Foreign Institutional Investment in India: An Analysis since 2000

A

Thesis

Submitted to

Lovely Professional University

for the award of the degree

of

DOCTOR OF PHILOSOPHY

IN

DEPARTMENT OF MANAGEMENT

By

Suresh Kumar

Guide

Dr. Jasdeep Kaur Dhami

Faculty of Business and Applied Arts

Lovely Professional University

Phagwara

July, 2014

DECLARATION

I declare that the thesis entitled **"Foreign Institutional Investment in India: An Analysis since 2000"** has been prepared by me under the guidance of **Dr. Jasdeep Kaur Dhami**, Assistant Professor, Department of Management, Lovely Professional University, Phagwara. No part of this thesis has formed the basis for the award of any degree or fellowship previously.

Suresh Kumar
Department of Management,
Lovely Professional University,
Phagwara, Punjab.

Date :……

CERTIFICATE

I certify that Suresh Kumar has prepared his thesis entitled **"Foreign Institutional Investment in India: An Analysis since 2000"** for the award of Ph.D degree of Lovely Professional University**,** under my guidance. He has carried out the work at the Department of Management, Lovely Professional University, Phagwara.

Dr.Jasdeep Kaur Dhami
Department of Management,
Lovely Professional University,
Phagwara, Punjab.

Date : ……..

ACKNOWLEDGEMENT

This thesis is the outcome of the support and encouragement of many of my teachers, friends, family members and well wishers. First of all, I would like to thank GOD who has instilled enough insight within me to undertake and complete this research work.

My sincere and abundant acknowledgment goes to my guide, Dr.Jasdeep Kaur Dhami, who has been a continuous source of inspiration, motivation and encouragement during the entire course of this research work. Despite her busy schedule, she has been available all the time, devoted good energy and given a proper advice whenever required. This has made me sail through the tough time and completed this enormous task.

I am also grateful to Dr. Sanjay Modi (Executive Dean – Faculty of Business and Applied Arts, Lovely Professional University) who has always been there in the thick and the thin. His ever motivational advice keeps me on the target path and ultimately helped me to continue my efforts for this study work. My sincere thanks also go to the 'Management of this University' which has started this doctoral programme and provided a good platform to the research scholars.

I also acknowledge the library services of LPU Phagwara, Punjabi University Patiala, Punjab University Chandigarh and GNDU Amritsar which have proved to be a good source for this research work. I am also thankful to all my colleagues in LPU and caring friends who through their constructive advice and elaborative discussions have helped me in this research work.

My sincere feeling of gratefulness also goes to my parents who always motivated me in all the endeavours of my life including this research work in LPU.

I am also thankful to my wife Deepika who has provided the full support to me during the entire period of my research work. My special thanks to my daughter Pragati and nephew Manik, Sargam, Netik for giving me joyful and happy moments during the entire journey of my research work. Finally I would like to thank each and every person who has directly and indirectly helped and motivated me in this herculean task.

Dated : **Suresh Kumar**

ABSTRACT

Since 1991, Indian economy has emerged as a prominent market for the global investors. FII, in particular, has constituted a major portion of the total foreign capital flows in India. During the last decade i.e. from 2000 onwards, there has been a great spurt in the flows of FII which has impacted and has got impacted by various factors of the Indian economy like Stock Prices of the Indian capital market, Credit Rating of the Country, Return and Risk factor, Price-Earnings Ratio, Industrial Growth, FERs, Infrastructure Facility, Exchange Rate, Inflation Rate and so on. Though there has been good research work undertaken in this area, majority of the researches have concentrated on the relationship study between Indian stock market and FII flows. In the light of the above scenario, a herculean effort has been made in the present research to study various perspectives and dimensions related to FII.

The research design of the present study is both descriptive as well as empirical in nature. The main objectives of the present research include; i) To study the magnitude and trends of FII flows in India since 2000 and their forecasting; ii) To find out the factors affecting FII flows in India; iii) To examine the relationship between FII and other economic factors like Stock Market, FERs, ER and Inflation; and iv) To study the impact of FII flows on the volatility of the stock market in India. In the present study, secondary data from various sources like Newswire, Capital Line, web sites of SEBI, RBI, BSE, NSE, GOI and CSO have been collected and used. For the purpose of graphical presentation and statistical analysis, various statistical tools like Histogram, Frequency Curve, Simple Percentage Analysis, t test and Correlation Analysis with the help of Microsoft excel have been used. And for the advanced statistical testing and analysis, various econometric tools like Granger Causality, VAR, Variance Decomposition, Impulse Response Function, ARCH, GARCH and ARIMA have been used with the help of eviews.

According to the findings of this study, FIIs have become a reckoned force in the Indian capital market during the last ten years. Their number has grown up substantially during the last decade. The cash inflows through FIIs have become surprisingly large.

The number of countries from where they have been hailing have been found growing very fast. It has been further found that FIIs have been investing more dominantly in the Indian equity market as compared to the debt market. Their share in the total FPI has increased during the last decade. Moreover, their share in the companies enlisted on NSE has been showing good degree of consistency. The percentage of their share in the total value under the custody of various entities like Financial Institutions, Mutual Fund, NRIs, OCBs, Brokers, Corporate, FDI, Banks, Foreign Venture Capital Investment, Insurance Companies, Local Pension Fund and others has gone up. Their share in the total market turnover and the total market capitalization of BSE and NSE along with percentage in the Indian GDP has also been found on the rise. On the one hand, FII has been found to have positive correlation with Sensex and FERs and on the other hand, their relationship has been found to be negative with ER and Inflation. On the basis of the study, it has been concluded that FII flows enjoy bidirectional causality with Sensex and ER. The study has also established unidirectional causality from FII flows to Inflation. However, no causality has been revealed between FII flows and FERs.

According to the variance decomposition analysis, it has been observed that lagged value as an exogenous variable defines itself much more than other variables. For Sensex, the conclusion is that Sensex along with FII flows influences itself more than any other variables like ER, FERs and inflation in the short run. For ER, the conclusion is that ER lagged values along with FII and FERs values have more impact on its value than the Sensex and inflation. For FERs, the conclusion is that FERs explain itself more predominantly in the short span of time of twelve months as compared to other variables. And in case of Inflation, its own lagged value along with FII explains the variance in the inflation values. Further, from the results obtained from impulse response function, it can be concluded that as compared to ER and FERs, Sensex and inflation have reacted more promptly due to a standard deviation shock in FII flows. On the basis of monthly data analysis done with the help of GARCH and ARCH, it has been observed that FII flows have increased volatility in the Indian stock market in the pre crisis as well as in the post crisis period. Moreover, according to the analysis based on daily data, it is also concluded that FII flows have increased volatility in the Indian stock market for the whole period under study. As per the observations of forecasting which has been performed with the

help of ARIMA model, it has been estimated that FIIs will make huge foreign investments in the future period in the Indian economy. Thus in nutshell, it is concluded that FII has become an important force in the Indian capital market which needs to be handled cautiously and intelligently.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

Abbreviations	Description
AC	Auto Correlation
ADR	American Depository Receipt
ADF	Augmented Dicker Fuller
AIC	Akaike Information Criteria
AMC	Asset Management Company
ARC	Asset Construction Company
ARCH	Autoregressive Conditional Hetroscedasticity
ARIMA	Autoregressive Integrated Moving Average
AUC	Asset Under Custody
BIC	Bayesian Information Criterion
BRIC	Brazil, Russia, India and China
BSE	Bombay Stock Exchange
CAD	Current Account Deficit
CAGR	Compound Annual Growth Rate
CAP	Capitalisation
CCI	Controller of Capital Issue
CRR	Cash Reserve Ratio
CSO	Central Statistical Organisation
DFIs	Development Financial Institutions
DFIs	Domestic Financial Institutions
DTAA	Double Taxation Avoidance Agreement
ECBs	External Commercial Borrowings
EMEs	Emerging Market Economies

Abbreviations	Description
ER	Exchange Rate
EU	European Union
FIs	Financial Institutions
FCCBs	Foreign Currency Convertible Bonds
FDI	Foreign Direct Investment
FEMA	Foreign Exchange Management Act
FERA	Foreign Exchange Regulation Act
FERs	Foreign Exchange Reserves
FII	Foreign Institutional Investment
FIIs	Foreign Institutional Investors
FIPB	Foreign Investment Promotion Board
FPI	Foreign Portfolio Investment
FVCI	Financial Venture Capital Investor
GAAP	Generally Accepted Accounting Principles
GAAR	General Anti Avoidance Rules
GARCH	Generalised Autoregressive Conditional Hetroscedasticity
GDP	Gross Domestic Product
GDR	Global Depository Receipt
GOI	Government of India
HQC	Hannan-Quinn Information Criterion
IFC	International Finance Corporation
IIP	Index of Industrial Production
IMF	International Monetary Fund
INF	Inflation
INR	Indian Rupee
IRF	Impulse Response Function

Abbreviations	Description
LSE	London Stock Exchange
MDG	Millennium Development Goal
Mkt	Market
MSCI	Morgan Stanley Country Index
MSGF	Morgan Stanley Growth Fund
MSIM	Morgan Stanley Investment Management
MWPL	Market-Wise Position Limit
NASDAQ	National Association of Securities Dealers Automated Quotations
NRI	Non-Resident Indian
NSE	National Stock Exchange
NSCC	National Securities Clearing Corporation
NYSE	New York Stock Exchange
OCBs	Overseas Corporate Bodies
OCB	Overseas Commercial Borrowing
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OTC	Over The Counter
PAC	Partial Auto Correlation
PIO	Person of Indian Origin
P-E Ratio	Price-Earnings Ratio
P Notes	Participatory Notes
PP	Phillips-Perron
QE	Quantitative Easing
RBI	Reserve Bank of India
SEBI	Securities and Exchange Board of India
SEC	Securities and Exchange Commission

Abbreviations	Description
SLR	Statutory Liquidity Ratio
S&P	Standard and Poor
USD	USA Dollar
VAR	Vector Auto regression
VECM	Vector Error Correction Model
WPI	Whole Sale Price Index

Appendix – I

FIRST SCHEDULE

FORMS

[FORM A]

Application Form for Grant of Certificate of Registration as Foreign Institutional Investor(FII)

[See regulation 3(2)]

1. Details of the Applicant:

1.1 Name of the applicant:

1.2 Address of the Applicant:

Address			
Postal Code		Country	
Telephone No.		Fax No	
Web-site			

1.3 Date of incorporation/establishment:

1.4 Place and Country of Incorporation:

Place		**Country**	

1.5 Legal form of the applicant and the law, under which it is incorporated, established or registered, if any:

1.6 Brief description of the principal activities:

1.7 Date of commencement of such activities:

1.8 Brief description of the group, if any, to which the applicant belongs:

1.9 Information pertaining to Compliance Officer:

Name			
Job Title			
Telephone no		Fax No	
E-mail id			

2. Category of the applicant

2.1 If the applicant is a fund:

□ Pension Fund □ University fund

□ Mutual Fund □ Endowment

□ Investment Trust □ Foundation

□ Bank Charitable Trust

□ Charitable society Insurance/Reinsurance Company

□ Foreign Central Bank □ Foreign Governmental Agency

□ Sovereign Wealth Fund International / Multilateral Organization / agency

□ Broad Based Fund (only if it does not satisfy any other category)

(Please state the corpus of the fund, Generic type and Number of investors in the fund along with their respective proportionate holdings in a separate annexure in the following format)

Sr. No.	Generic Type of Investors	No. of Investors	Percentage of Holding
Total Corpus of the Fund			

2.2 If the applicant is not a fund:

□ Asset Management Company □ Institutional Portfolio Manager

□ Investment Manager/Advisor □ Trustee of a Trust

3. Classification of the applicant:

□ 70:30 (Equity: Debt) □ 100% Debt

4. Details of Regulatory authority by which the applicant is regulated

4.1 Contact details:

Name			
Country		Web-site	

4.2 Registration Number/Code:

4.3 Please mention briefly the activities which the applicant is permitted to undertake under the registration/license granted by the above regulatory authority:

5. Details of Proposed Investments to be made in Indian Securities markets:

5.1. Nature of Investments to be made by the applicant:

□ On behalf of Self □ On behalf of client(s)/fund(s) □ Both

5.2 In case of investments being made on behalf of clients/funds, details of the same:

Name	Category	Country

6. Disciplinary History

Whether there has been any instance of violation or non-adherence to the securities laws, code of ethics/conduct, code of business rules, for which the applicant, or its parent / holding company or affiliate may have been subjected to economic or criminal liability or suspended from carrying out its operations or the registration, has been revoked, temporarily or permanently.

□Yes □ No

If yes, please furnish details in annexure

7. Details of the domestic custodian and designated bank appointed

7.1 Details of the domestic custodian

Name	
SEBI Reg. No.	

7.2 Details of designated bank:

Name of the Bank and Branch	
Address	

8. Details of prior association with the Indian securities market.

8.1 Whether the applicant was anytime registered as FII or Sub account with Securities and Exchange Board of India.

□ Yes □ No

If yes, then please provide details:

Name of the entity	Registered as	SEBI Registration No.	Period of registration	
			From	To

8.2 Whether any of your associate/s or group company/s, having office in India, have ever been registered with Securities and Exchange Board of India

□ Yes □ No

If yes, then please provide details:

Name of the entity	Registered as	SEBI Registration No.	Period of registration	
			From	To

(*Please attach separate sheet, in the same format, if the space provided here is not sufficient)*

9. Declaration and Undertaking

We declare that:

a. No winding up orders have been passed against the applicant.
b. no order suspending or debarring the applicant from permanently carrying on activities in the financial sector has been passed by any regulatory authority;
c. no order withdrawing or refusing to grant any license/approval to the applicant which has a bearing on the securities market has been passed by any authority in the preceding five years;
d. any penalty imposed (including monetary penalty) by any regulatory authority has been undergone or paid.
e. the information supplied in the application, including the attachment sheets, is complete and true.

Undertaking:

We undertake to:

1. notify the Securities and Exchange Board of India and the Reserve Bank of India of any change in the information provided in the application promptly.
2. comply with the provisions of the Act, and regulations issued there under and all other relevant laws including guidelines issued by the Reserve Bank of India and the Government of India.
3. abide by operational instructions/ directives as may be issued by Securities and Exchange Board of India and by the Reserve Bank of India from time to time under provisions of the Act or any other law for the time being in force.

4. be held responsible and liable for all acts of commission and omission of all its sub-accounts and other deeds and things done by such sub accounts under these regulations, irrespective of whether discretion is exercised by us in respect of the sub-account.

For and on behalf of applicant _____

Signature of Authorized Signatory	
Name	
Designation	
Date	*dd/mm/yyyy*

Notes:

1. Securities and Exchange Board of India (SEBI) and Reserve Bank of India (RBI) reserve the right to call for any further information from the applicant regarding this application.
2. Applications along with necessary documents should be submitted at:

Securities and Exchange Board of India,

Division of Foreign Institutional Investors & Custodians,

Plot No. C4-A, "G" Block,

Bandra Kurla Complex,

Mumbai-400051.

3. **Documents & Instruments to be enclosed with the application:**

(i) Certified copy of the relevant clause of Articles of the Memorandum and Articles of Association or the agreement authorizing the applicant to invest on behalf of its clients.

(ii) Audited financial statements/ annual report for the previous financial year, (period covered shall not be less than twelve months)

(iii) Draft of US $ 5,000 in favor of 'Securities and Exchange Board of India' payable in New York.

Appendix – II

Form AA

Application Form for Grant of Certificate of Registration as Sub–account

[See regulation 12(1)]

1. Details of the applicant:

1.1 Name and Address of the applicant:

Name			
Address			
Postal Code		Country	
Telephone no		Fax No	

1.2 Date of incorporation/establishment:

1.3 Place and Country of Incorporation/ establishment:

Place		**Country**	

1.4 Legal form of the applicant :

2. Category of the applicant

2.1 Please select the most appropriate category of the applicant:

□ Broad Based Fund □ Broad Based Portfolio

□ Proprietary fund of the FII □ University Fund

□ Foreign Corporate □ Endowment

□ Foundation □ Charitable Trust

□ Charitable Society □ Sovereign Wealth Fund

□ Foreign Individual (Please furnish requisite information in 2.4)

2.2. In case of broad based fund / broad based Portfolio, please specify the constitution:

□ Mutual Fund □ Pension Fund

□ Insurance Investment Trust

□ Others (only if it does not satisfy any other category)

(Please state the corpus of the fund, Generic type and Number of investors in the fund along with their respective proportionate holdings in a separate annexure in the following format)

Sr. No.	Generic Type of Investors	No. of Investors	Percentage of Holding
Total Corpus of the Fund			

2.3 In case of Foreign Corporate, please specify the name of the Exchange/s where the applicant is listed:

2.4 In case of Foreign Individual applicant, please specify the nationality and passport no. of the applicant:

Nationality		**Passport No.**	

2.5 Classification of the applicant: □ 70:30 (Equity: Debt) □ 100% Debt

2.6 If the applicant is applying as a Proprietary fund of the FII, whether such funds would be invested through Multi-Managed Structure?

□ Yes □ No

3. Details of the taxation authority

3.1 Name and Address of the tax Authority where the applicant is subject to taxation:

3.2 Unique Taxation-Id/Number (if any):

4. Details of domestic custodian and designated bank appointed in India

4.1 Details of the domestic custodian:

Name	
SEBI Registration Number	

4.2 Details of designated bank:

Name of the Bank & Branch	
Address	

5. Declaration to be furnished by the Foreign Institutional Investor

A. We declare that:

f. no winding up orders have been passed against the applicant.
g. no order suspending or debarring the applicant from permanently carrying on activities in the financial sector has been passed by any regulatory authority;
h. no order withdrawing or refusing to grant any license/approval to the applicant which has a bearing on the securities market has been passed by any authority in the preceding five years;
i. any penalty imposed (including monetary penalty) by any regulatory authority has been undergone or paid.

B. In case the sub-account applicant is a Foreign Corporate:

a) its securities are listed on a stock exchange outside India;
b) it has a asset base of not less than two billion US dollars;
c) it has an average net profit of not less than fifty million US dollars during the three financial years preceding the date of the application, **OR**

In case the sub-account applicant is a Foreign Individual:

a) has a net worth of not less than fifty million US dollars;
b) holds the passport of a foreign country for a period of at least five years preceding the date of application;
c) holds a certificate of good standing from a bank;

d) is a client of the foreign institutional investor or any other entity which belongs to the same group as the foreign institutional investor, for a period of at least three years preceding the date of the application;

6. Undertaking

A. Undertakings to be submitted by FII

(i) In case the sub-account applicant is a broad based fund:

"We undertake that the proprietary funds of _____ (name of FII) - shall not be invested through _____ (name of the sub account applicant)."

OR

(ii) In case the sub-account applicant is a proprietary fund of the Foreign Institutional Investor:

"We undertake that only the proprietary funds of _____ (name of FII) shall be invested through _____ (name of the sub account applicant)."

(Please Strike off which is not applicable)

B. Further declaration and undertaking:

1. We further declare that:

a. the Foreign Institutional Investor through whom an application for registration of sub-account is made, is authorized to invest on behalf of the sub-account;
b. the income of the applicant is from known and legitimate sources;
c. the applicant is not a non-resident Indian.
d. the foreign institutional investor through whom the application for registration of sub-account is made shall be responsible and liable for all acts of commission and omission of this sub-account and other deeds and things done by such sub accounts under these regulations, irrespective of whether discretion is exercised or not by the foreign institutional investor in respect of the sub-account.
e. the above obligation of the foreign institutional investor shall, however, not be deemed to detract from any responsibility or liability which the sub account shall incur under the Regulations made by the Board or under any law for the time being in force in India.

2. We hereby agree and declare that the information provided and the undertakings given above are complete and true.
3. We further undertake that we will immediately notify the Securities and Exchange Board of India and the Reserve Bank of India of any change in the information provided.

Authorized Signatory of the Sub Account Applicant	Authorized Signatory of the Foreign Institutional Investor
Name:	Name:
Date:	Date:

Note:

1. Securities and Exchange Board of India (SEBI) and Reserve Bank of India (RBI) reserve the right to call for any further information from the applicant regarding his application.

2. Applications along with necessary documents should be submitted at

Securities and Exchange Board of India,

Division of Foreign Institutional Investors & Custodians,

Plot No. C4-A, "G" Block,

Bandra Kurla Complex, Mumbai - 400051 , India

Appendix – III

FORM B - Certificate of Registration under Regulation 7 of SEBI (Foreign Institutional Investors) Regulations, 1995

FORM B

(Regulation 7)

SECURITIES AND EXCHANGE BOARD OF INDIA (FOREIGN INSTITUTIONAL INVESTORS) REGULATIONS, 1995

CERTIFICATE OF REGISTRATION

I. In exercise of the powers conferred by sub-section (1A) of section 12 of the Securities and Exchange Board of India Act, 1992, read with the regulations made there under the Board hereby grants a certificate of registration to as a Foreign Institutional Investor, subject to the conditions specified in the Act and in the regulations made there under.

II. Registration Number for the Foreign Institutional Investor is IN .....

III. Unless renewed, the certificate of registration is valid from..... to.....

Date:

By Order

for and on behalf of

Securities and Exchange Board of India

Authorised Signatory

Place: Bombay

Appendix – IV

Data Used for Empirical Testing and Studying the Relationship between the FII, Sensex, FERs, ER and Inflation

Month	Net Equity Investment by FIIs (Rs.crore)	Net Debt Investment by FIIs (Rs.crore)	Net Investment by FIIs (Rs.crore)	Sensex	Exchange Rate/US $ (Rs.)	Foreign Exchange Reserves (Rs.crore)	Inflation (%)
Jan-00	151.2	45.3	196.5	5205.29	43.55779	1522.83	3.55
Feb-00	2784.50	299.7	3084.20	5446.98	43.62491	1565.70	3.54
Mar-00	1064.50	134.4	1198.90	5001.28	43.60571	1659.13	5.58
Apr-00	2690.60	-103.9	2586.70	4657.55	43.65983	1654.54	6.53
May-00	484.1	-231.2	252.9	4433.61	43.94377	1660.38	6.3
Jun-00	-959.3	24.2	-935.1	4748.77	44.53533	1641.12	6.56
Jul-00	-1417.80	15.9	-1401.90	4279.86	44.78813	1630.02	6.54
Aug-00	1346.20	-87.3	1258.90	4477.31	45.74032	1631.34	6.09
Sep-00	142.4	76	218.4	4090.38	45.928	1632.60	6.47
Oct-00	-271.8	53.2	-218.6	3711.02	46.38918	1633.27	7.49
Nov-00	932.1	-27.1	905	3997.99	46.81613	1828.59	7.62
Dec-00	-576.8	-58.2	-635	3972.12	46.78855	1873.58	8.49
Jan-01	4045.00	228	4273.00	4326.72	46.58516	1908.35	8.7
Feb-01	1818.90	44.3	1863.20	4247.04	46.54501	1939.38	8.33
Mar-01	1973.10	-207.2	1765.90	3604.38	46.64484	1972.04	6.42
Apr-01	1769.80	209	1978.80	3519.16	46.795	1992.76	5.41
May-01	-112.3	-16.2	-128.5	3631.91	46.93658	2020.15	5.6
Jun-01	715.3	464.4	1179.70	3456.78	47.03333	2044.09	5.3
Jul-01	722.4	-244.7	477.7	3329.28	47.16948	2062.36	5.23
Aug-01	437.4	64.8	502.2	3244.95	47.16266	2138.65	5.41
Sep-01	-415.6	-117.7	-533.3	2811.60	47.63267	2147.81	4.52
Oct-01	715.7	168.7	884.4	2989.35	48.10145	2170.92	2.91

Month	Net Equity Investment by FIIs (Rs.crore)	Net Debt Investment by FIIs (Rs.crore)	Net Investment by FIIs (Rs.crore)	Sensex	Exchange Rate/US $ (Rs.)	Foreign Exchange Reserves (Rs.crore)	Inflation (%)
Nov-01	50.5	-46.7	3.8	3287.56	48.06407	2250.30	2.59
Dec-01	250.2	-22.3	227.9	3262.33	48.00174	2318.07	2.08
Jan-02	423.3	276.1	699.4	3311.03	48.3541	2403.71	1.51
Feb-02	1966.30	370.5	2336.80	3562.31	48.72775	2478.40	1.39
Mar-02	391.4	-62.4	329	3469.35	48.81968	2640.36	1.76
Apr-02	11.7	-124.6	-112.9	3338.16	48.99543	2735.93	1.5
May-02	-56	102.2	46.2	3125.73	49.09094	2783.89	1.56
Jun-02	-381.1	-484.9	-866	3244.70	49.053	2868.30	2.43
Jul-02	348.5	-110.1	238.4	2987.65	48.8571	2950.40	2.79
Aug-02	204.3	-30.2	174.1	3181.23	48.68677	3014.41	3.34
Sep-02	468.6	-146.2	322.4	2991.36	48.54593	3077.88	3.53
Oct-02	-776.4	-98.7	-875.1	2949.32	48.44694	3154.34	3.08
Nov-02	601.8	135.9	737.7	3228.82	48.35207	3261.97	3.39
Dec-02	427.2	220.7	647.9	3377.28	48.23245	3415.41	3.34
Jan-03	888	97.3	985.3	3250.38	48.02916	3549.45	4.22
Feb-03	378.7	49.5	428.2	3283.66	47.82693	3506.00	5.35
Mar-03	411.7	551.1	962.8	3048.72	47.74868	3614.70	5.99
Apr-03	430.3	562.2	992.5	2959.79	47.48087	3708.71	6.65
May-03	1220.80	1,839.70	3060.50	3180.75	47.20997	3871.00	6.51
Jun-03	2581.70	880.1	3461.80	3607.13	46.7953	3867.24	5.34
Jul-03	2346.50	-185.6	2160.90	3792.61	46.31481	3947.35	4.71
Aug-03	2091.30	136.2	2227.50	4244.73	46.01974	4003.00	3.95
Sep-03	3851.30	324.2	4175.50	4453.24	45.912	4233.70	4.9
Oct-03	6797.50	-74.7	6722.80	4906.87	45.45887	4251.17	5.13
Nov-03	3300.50	293.6	3594.10	5044.82	45.5935	4474.54	5.42
Dec-03	6161.10	220.8	6381.90	5838.96	45.62032	4704.72	5.74

Month	Net Equity Investment by FIIs (Rs.crore)	Net Debt Investment by FIIs (Rs.crore)	Net Investment by FIIs (Rs.crore)	Sensex	Exchange Rate/US $ (Rs.)	Foreign Exchange Reserves (Rs.crore)	Inflation (%)
Jan-04	3176.80	692.6	3869.40	5695.67	45.51081	4820.25	6.5
Feb-04	2397.50	276	2673.50	5667.51	45.3181	4959.28	6.14
Mar-04	5604.40	839.9	6444.30	5590.60	45.12042	4901.29	4.78
Apr-04	7638.20	-918.7	6719.50	5655.09	43.9081	5257.41	4.51
May-04	-3246.90	-299.5	-3546.40	4759.62	45.14758	5438.86	4.86
Jun-04	516.4	-790	-273.6	4795.46	45.51683	5495.08	5.12
Jul-04	913.6	-200.4	713.2	5170.32	46.06726	5498.97	6.14
Aug-04	2892.30	-371.4	2520.90	5192.08	46.36935	5475.31	7.46
Sep-04	2385.60	189.7	2575.30	5583.61	46.13633	5519.76	6.19
Oct-04	3263.30	-1,235.30	2028.00	5672.27	45.81723	5514.75	6.1
Nov-04	6740.80	1,444.50	8185.30	6234.29	45.1278	5738.12	6.46
Dec-04	6683.80	3,455.90	10139.70	6602.69	44.01174	5716.78	5.47
Jan-05	457.1	-773.7	-316.6	6555.94	43.71284	5656.26	4.87
Feb-05	8376.30	833.1	9209.40	6713.86	43.69611	5930.64	4.33
Mar-05	7502.20	424.4	7926.60	6492.82	43.71032	6191.16	4.64
Apr-05	-654.1	-821.4	-1475.50	6154.44	43.7617	6191.36	5.33
May-05	-1140.10	-245.7	-1385.80	6715.11	43.5279	6066.67	4.59
Jun-05	5328.60	-70.4	5258.20	7193.85	43.63617	6020.48	4.68
Jul-05	7934.10	-173.9	7760.20	7635.42	43.56532	6112.19	4.84
Aug-05	5051.20	-430	4621.20	7805.43	43.63339	6345.27	3.48
Sep-05	4646.80	-188.4	4458.40	8634.48	43.9415	6293.15	4.38
Oct-05	-3693.90	-933.5	-4627.40	7892.32	44.77548	6476.65	4.67
Nov-05	4038.70	-2,164.50	1874.20	8788.81	45.69972	6561.19	3.94
Dec-05	9335.00	-974.4	8360.60	9397.93	45.7022	6183.83	4.38
Jan-06	3677.60	-921.6	2756.00	9919.89	44.41861	6186.27	4.36
Feb-06	7587.80	-151.6	7436.20	10370.24	44.33497	6328.26	4.45

Month	Net Equity Investment by FIIs (Rs.crore)	Net Debt Investment by FIIs (Rs.crore)	Net Investment by FIIs (Rs.crore)	Sensex	Exchange Rate/US $ (Rs.)	Foreign Exchange Reserves (Rs.crore)	Inflation (%)
Mar-06	6688.80	-258.4	6430.40	11279.96	44.45056	6763.87	4.24
Apr-06	521.9	248.5	770.4	12042.56	44.92938	7225.63	4.97
May-06	-7354.20	706.8	-6647.40	10398.61	45.32908	7608.42	6.05
Jun-06	479.5	395.6	875.1	10609.25	46.056	7507.00	6.8
Jul-06	1145.20	152.2	1297.40	10743.88	46.44198	7654.45	6.54
Aug-06	4643.10	804.5	5447.60	11699.05	46.57638	7738.69	7.11
Sep-06	5424.70	708.7	6133.40	12454.42	46.21011	7597.47	6.96
Oct-06	8013.10	656.5	8669.60	12961.90	45.52255	7536.03	6.93
Nov-06	9380.10	806.4	10186.50	13696.31	44.88303	7816.90	6.73
Dec-06	-3667.40	901.4	-2766.00	13786.91	44.60359	7839.82	6.96
Jan-07	492.1	-2,174.00	-1681.90	14090.92	44.29191	7957.75	6.64
Feb-07	7239.60	955.5	8195.10	12938.09	44.1248	8621.10	6.63
Mar-07	-1082.00	1,442.60	360.6	13072.10	44.00258	8682.22	6.72
Apr-07	6679.20	1,042.30	7721.50	13872.37	42.26979	8440.01	6.22
May-07	3959.70	1,360.10	5319.80	14544.46	40.86676	8474.63	5.52
Jun-07	1643.10	-541.4	1101.70	14650.51	40.81072	8694.49	4.46
Jul-07	23872.40	-1,263.00	22609.40	15550.99	40.44829	9184.19	4.42
Aug-07	-7770.50	608.4	-7162.10	15318.60	40.78638	9373.62	4.04
Sep-07	16132.60	2,655.80	18788.40	17291.10	40.38143	9846.04	3.39
Oct-07	20590.90	2,499.50	23090.40	19837.99	39.54984	10407.70	3.19
Nov-07	-5849.90	-469.3	-6319.20	19363.19	39.45997	10850.56	3.73
Dec-07	5579.10	3,312.00	8891.10	20286.99	39.47839	10850.20	4.01
Jan-08	-13035.70	1,953.80	-11081.90	17648.71	39.36519	11550.72	4.54
Feb-08	1733.30	2,496.80	4230.10	17578.72	39.70811	12025.31	5.68
Mar-08	-130.4	-879.7	-1010.10	15644.44	40.3224	12379.65	7.71
Apr-08	1,074.80	-1,701.70	-626.9	17287.31	40.02107	12710.72	7.86

Month	Net Equity Investment by FIIs (Rs.crore)	Net Debt Investment by FIIs (Rs.crore)	Net Investment by FIIs (Rs.crore)	Sensex	Exchange Rate/US $ (Rs.)	Foreign Exchange Reserves (Rs.crore)	Inflation (%)
May-08	-5011.50	-162.9	-5174.40	16415.57	42.01153	13399.43	8.2
Jun-08	-10095.80	-998.7	-11094.50	13461.60	42.82064	13404.17	10.89
Jul-08	-1836.80	3,618.90	1782.10	14355.75	42.85845	13009.47	11.15
Aug-08	-1211.70	1,257.80	46.1	14564.53	43.01061	12931.57	11.12
Sep-08	-8278.10	3,204.20	-5073.90	12860.43	45.61134	13440.61	10.78
Oct-08	-15347.30	-1,858.10	-17205.40	9788.06	50.11125	12454.44	10.66
Nov-08	-2598.30	4,215.00	1616.70	9092.72	50.10541	12344.60	8.65
Dec-08	1750.10	626.5	2376.60	9647.31	49.66894	12401.61	6.68
Jan-09	-4245.30	802.3	-3443.00	9424.24	49.71918	12186.92	5.87
Feb-09	-2436.60	-687.8	-3124.40	8891.61	49.66042	12645.89	3.61
Mar-09	530.3	-6,420.30	-5890.00	9708.50	52.09306	12838.65	1.65
Apr-09	6508.20	2,490.30	8998.50	11403.25	50.61805	12640.48	1.21
May-09	20117.20	-2,711.40	17405.80	14625.25	48.98694	12404.41	1.45
Jun-09	3830.00	1,068.30	4898.30	14493.84	48.26572	12692.35	0.39
Jul-09	11066.30	2,115.40	13181.70	15670.31	48.84813	13082.20	0.31
Aug-09	4902.70	-379.4	4523.30	15666.64	48.61461	13552.09	0.54
Sep-09	18344.30	2,228.40	20572.70	17126.84	48.81542	13512.58	1.4
Oct-09	9077.00	6,895.60	15972.60	15896.28	47.06132	13355.02	1.79
Nov-09	5497.00	684.4	6181.40	16926.22	46.74186	13393.03	4.73
Dec-09	10233.10	-1,522.40	8710.70	17464.81	46.82223	13232.35	7.15
Jan-10	-500.3	8,912.90	8412.60	16357.96	46.177	13027.93	8.68
Feb-10	1216.90	3,146.10	4363.00	16429.55	46.47286	12868.48	9.65
Mar-10	19928.00	9,509.50	29437.50	17527.77	45.50036	12596.65	10.36
Apr-10	9361.30	3,031.80	12393.10	17558.71	44.56716	12426.91	10.88
May-10	-9436.70	2,450.60	-6986.10	16944.63	45.90534	12706.10	10.48
Jun-10	10508.40	740.7	11249.10	17700.90	46.69057	12848.07	10.25

Month	Net Equity Investment by FIIs (Rs.crore)	Net Debt Investment by FIIs (Rs.crore)	Net Investment by FIIs (Rs.crore)	Sensex	Exchange Rate/US $ (Rs.)	Foreign Exchange Reserves (Rs.crore)	Inflation (%)
Jul-10	16617.40	8,106.60	24724.00	17868.29	46.96888	13203.11	9.98
Aug-10	11687.20	2,999.10	14686.30	17971.12	46.69603	13330.33	8.87
Sep-10	24978.50	7,689.50	32668.00	20069.12	46.33208	13155.74	8.98
Oct-10	28562.90	-4,260.30	24302.60	20032.34	44.67013	13270.98	9.08
Nov-10	18293.10	2,917.60	21210.70	19521.25	45.41518	13461.60	8.2
Dec-10	2049.60	1,164.20	3213.80	20509.09	45.86617	13323.54	9.45
Jan-11	-4813.20	10,176.70	5363.50	18327.76	46.07773	13749.36	9.47
Feb-11	-4585.50	1,315.70	-3269.80	17823.40	45.89364	13625.94	9.54
Mar-11	6897.80	-14.9	6882.90	19445.22	45.71021	13610.13	9.68
Apr-11	7213.30	-17.2	7196.10	19135.96	44.99721	13913.65	9.74
May-11	-6614.40	2,338.40	-4276.00	18503.28	45.29826	14027.58	9.56
Jun-11	4572.20	311.1	4883.30	18845.87	45.54862	14118.78	9.51
Jul-11	8030.10	2,622.80	10652.90	18197.20	44.93912	14091.02	9.36
Aug-11	-10833.60	2,931.10	-7902.50	16676.75	45.66626	14817.62	9.78
Sep-11	-158.3	-1,707.40	-1865.70	16453.76	48.04852	15240.81	10
Oct-11	1677.40	1,401.40	3078.80	17705.01	49.94935	15453.19	9.87
Nov-11	-4197.90	934.7	-3263.20	16123.46	51.11289	16062.30	9.46
Dec-11	97.9	21,774.60	21872.50	15454.92	53.47384	15804.00	7.74

Appendix – V

Data used for Empirical Testing for Studying the Impact of FII on the Volatility of Indian Stock Market (BSE Sensex)

Month	Net Investment by FIIs (Rs.crore)	BSE Sensex
Jan-00	196.5	5205.29
Feb-00	3084.20	5446.98
Mar-00	1198.90	5001.28
Apr-00	2586.70	4657.55
May-00	252.9	4433.61
Jun-00	-935.1	4748.77
Jul-00	-1401.90	4279.86
Aug-00	1258.90	4477.31
Sep-00	218.4	4090.38
Oct-00	-218.6	3711.02
Nov-00	905	3997.99
Dec-00	-635	3972.12
Jan-01	4273.00	4326.72
Feb-01	1863.20	4247.04
Mar-01	1765.90	3604.38
Apr-01	1978.80	3519.16
May-01	-128.5	3631.91
Jun-01	1179.70	3456.78
Jul-01	477.7	3329.28
Aug-01	502.2	3244.95
Sep-01	-533.3	2811.60
Oct-01	884.4	2989.35
Nov-01	3.8	3287.56
Dec-01	227.9	3262.33
Jan-02	699.4	3311.03

Month	Net Investment by FIIs (Rs.crore)	BSE Sensex
Feb-02	2336.80	3562.31
Mar-02	329	3469.35
Apr-02	-112.9	3338.16
May-02	46.2	3125.73
Jun-02	-866	3244.70
Jul-02	238.4	2987.65
Aug-02	174.1	3181.23
Sep-02	322.4	2991.36
Oct-02	-875.1	2949.32
Nov-02	737.7	3228.82
Dec-02	647.9	3377.28
Jan-03	985.3	3250.38
Feb-03	428.2	3283.66
Mar-03	962.8	3048.72
Apr-03	992.5	2959.79
May-03	3060.50	3180.75
Jun-03	3461.80	3607.13
Jul-03	2160.90	3792.61
Aug-03	2227.50	4244.73
Sep-03	4175.50	4453.24
Oct-03	6722.80	4906.87
Nov-03	3594.10	5044.82
Dec-03	6381.90	5838.96
Jan-04	3869.40	5695.67
Feb-04	2673.50	5667.51
Mar-04	6444.30	5590.60
Apr-04	6719.50	5655.09
May-04	-3546.40	4759.62

Month	Net Investment by FIIs (Rs.crore)	BSE Sensex
Jun-04	-273.6	4795.46
Jul-04	713.2	5170.32
Aug-04	2520.90	5192.08
Sep-04	2575.30	5583.61
Oct-04	2028.00	5672.27
Nov-04	8185.30	6234.29
Dec-04	10139.70	6602.69
Jan-05	-316.6	6555.94
Feb-05	9209.40	6713.86
Mar-05	7926.60	6492.82
Apr-05	-1475.50	6154.44
May-05	-1385.80	6715.11
Jun-05	5258.20	7193.85
Jul-05	7760.20	7635.42
Aug-05	4621.20	7805.43
Sep-05	4458.40	8634.48
Oct-05	-4627.40	7892.32
Nov-05	1874.20	8788.81
Dec-05	8360.60	9397.93
Jan-06	2756.00	9919.89
Feb-06	7436.20	10370.24
Mar-06	6430.40	11279.96
Apr-06	770.4	12042.56
May-06	-6647.40	10398.61
Jun-06	875.1	10609.25
Jul-06	1297.40	10743.88
Aug-06	5447.60	11699.05
Sep-06	6133.40	12454.42

Month	Net Investment by FIIs (Rs.crore)	BSE Sensex
Oct-06	8669.60	12961.90
Nov-06	10186.50	13696.31
Dec-06	-2766.00	13786.91
Jan-07	-1681.90	14090.92
Feb-07	8195.10	12938.09
Mar-07	360.6	13072.10
Apr-07	7721.50	13872.37
May-07	5319.80	14544.46
Jun-07	1101.70	14650.51
Jul-07	22609.40	15550.99
Aug-07	-7162.10	15318.60
Sep-07	18788.40	17291.10
Oct-07	23090.40	19837.99
Nov-07	-6319.20	19363.19
Dec-07	8891.10	20286.99
Jan-08	-11081.90	17648.71
Feb-08	4230.10	17578.72
Mar-08	-1,010.10	15644.44
Apr-08	-626.9	17287.31
May-08	-5174.40	16415.57
Jun-08	-11094.50	13461.60
Jul-08	1782.10	14355.75
Aug-08	46.1	14564.53
Sep-08	-5073.90	12860.43
Oct-08	-17205.40	9788.06
Nov-08	1616.70	9092.72
Dec-08	2376.60	9647.31
Jan-09	-3443.00	9424.24

Month	Net Investment by FIIs (Rs.crore)	BSE Sensex
Feb-09	-3124.40	8891.61
Mar-09	-5890.00	9708.50
Apr-09	8998.50	11403.25
May-09	17405.80	14625.25
Jun-09	4898.30	14493.84
Jul-09	13181.70	15670.31
Aug-09	4523.30	15666.64
Sep-09	20572.70	17126.84
Oct-09	15972.60	15896.28
Nov-09	6181.40	16926.22
Dec-09	8710.70	17464.81
Jan-10	8412.60	16357.96
Feb-10	4363.00	16429.55
Mar-10	29437.50	17527.77
Apr-10	12393.10	17558.71
May-10	-6986.10	16944.63
Jun-10	11249.10	17700.90
Jul-10	24724.00	17868.29
Aug-10	14686.30	17971.12
Sep-10	32668.00	20069.12
Oct-10	24302.60	20032.34
Nov-10	21210.70	19521.25
Dec-10	3213.80	20509.09
Jan-11	5363.50	18327.76
Feb-11	-3269.80	17823.40
Mar-11	6882.90	19445.22
Apr-11	7196.10	19135.96
May-11	-4276.00	18503.28

Month	Net Investment by FIIs (Rs.crore)	BSE Sensex
Jun-11	4883.30	18845.87
Jul-11	10652.90	18197.20
Aug-11	-7902.50	16676.75
Sep-11	-1865.70	16453.76
Oct-11	3078.80	17705.01
Nov-11	-3263.20	16123.46
Dec-11	21872.50	15454.92
Jan-12	26328.9	17193.55
Feb-12	35227.9	17752.68
Mar-12	1792.5	17404.20
Apr-12	-4896.6	17318.81
May-12	3222	16218.53
Jun-12	1180.5	17429.98
Jul-12	13664.4	17236.18
Aug-12	11069.1	17429.56
Sep-12	19884	18762.74
Oct-12	19215.9	18505.38
Nov-12	9869.3	19339.90
Dec-12	26792.2	19426.71

Appendix : VI

VOLUME NO. 2 (2012), ISSUE NO. 7 (JULY) ISSN 2231-1009

FII INVESTMENT FORECASTING: AN INSIGHT INTO FUTURE TREND USING ARIMA MODEL

SURESH KUMAR
ASST. PROFESSOR
SCHOOL OF MANAGEMENT
LOVELY FACULTY OF BUSINESS AND APPLIED ARTS
LOVELY PROFESSIONAL UNIVERSITY
PHAGWARA

UTKARSH SHRIVASTAVA
ASST. PROFESSOR
SCHOOL OF MANAGEMENT
LOVELY FACULTY OF BUSINESS AND APPLIED ARTS
LOVELY PROFESSIONAL UNIVERSITY
PHAGWARA

JASDEEP DHAMI
ASST. PROFESSOR
SCHOOL OF MANAGEMENT
LOVELY FACULTY OF BUSINESS AND APPLIED ARTS
LOVELY PROFESSIONAL UNIVERSITY
PHAGWARA

ABSTRACT

This study mainly focuses on forecasting net investment by foreign institutional investor in Indian Debt and Securities markets. Past studies have concluded that FII investment depends upon recent past investment trend and follows herd behavior in context of Indian markets. Autoregressive and Moving Average Processes have been proven suitable for modeling time series exhibiting such characteristics. ARIMA specification parameters are identified by analysis of ACF and PACF of the time series. Net monthly FII data used to train the model is from jan-2000 till dec-10, while FII flow forecast is done for the year 2011 to check the accuracy of the model specific parameters obtained earlier. Comparison of actual and forecasted results showed that forecast are lying within 95% confidence limits which proves efficiency of these models. Long term forecast depicted continuous downtrend which is the indicator of FII's negative sentiments and calls for policy changes to boost their confidence.

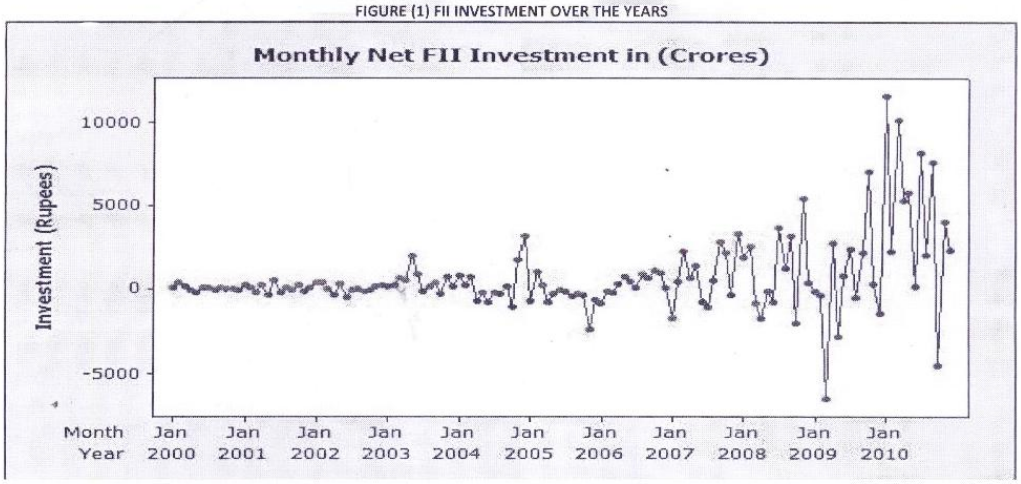
KEYWORDS

ARIMA, FII, ACF, PACF, Ljung-Box Test.

INTRODUCTION

Stock markets in the India and other developing countries are becoming attractive place of investment for Foreign Institutional Investors (FII). Investment by FII to the markets has its pros and cons. It helps in increasing the valuations of the domestic firms and brings foreign currency to the country although sudden withdrawal of huge funds from the market adversely affects the environment of the domestic country. Foreign Institutional Investment (FII) generally done by individuals and institutional investors from foreign nations to diversify their international portfolios. In an economy like India FII investment was not an attractive option until pace of liberalization and globalization increased. In the last decade of 19th century FII investment has drastically increased and has made Indian markets highly volatile. Fig(1) clearly depicts the changes in FII investment.

FIGURE (1) FII INVESTMENT OVER THE YEARS



Appendix : VII

INTERNATIONAL JOURNAL OF MARKETING,
FINANCIAL SERVICES & MANAGEMENT RESEARCH
Vol.2 No. 2, April.-June 2013, ISSN 2277-6788

CAUSAL RELATIONSHIP BETWEEN FII FLOWS AND MACRO ECONOMIC VARIABLES: A CASE OF INDIA

Utkarsh Shrivastava[1], Suresh Kashayap[2], Jasdeep Dhami[3]
[1,2,3]Lovely Professional University, Punjab, India - 144411

ABSTRACT

Liberalization and consistent growth of developing nations like China and India have attracted Foreign Institutional Investors to invest in capital markets of these countries. Due to weak currency of these nations a small investment can multiply immensely and bring a lot of volatility in the market. Hence, studying the factor which can cause FII movements will be of great help in predicting the same. This study analyzes four key macroeconomic variables of Inflation, Sensex, Exchange Rate and Foreign Exchange Reserves for their impact on net FII investment in India. First part of study analyzes monthly time series of these variables from 2000 till 2011 for stationarity and unit root using ADF and KPSS test. Second part studies the causal relationship of these variables with FII using prominent Granger Causality Test.

KEYWORDS- Stationarity Test, Financial Institutional Investors, Causality, Indian Economic Indicators

INTRODUCTION

This Foreign Institutional Investors are continuously looking for investment opportunities in developing countries like India, China and Brazil to name a few. Some of reasons behind this spur of FII include global integration of capital markets, advancement in technology, more opportunities due to consistent and stable growth of developing economies, quest for diversification of portfolio. FII introduces external liquidity to the markets of country in which they are investing and are beneficial for various firms looking for capital. In India since liberalization of 1990 the investment of FII have grown from US$4 million in 1992-93 to over US$32 billion in 2010-11. FII flows turned negative in during 2008-09 and there was a net outflow of US$ 12 billion.

Several studies have been conducted in the past analyzing causal relationship between FII flows and benchmark index. Chakrabarti (2001) studied the relationship between FII inflows and returns of BSE National Index using Granger Causality test.[1] Study concluded that FII flows were affected by index but not caused its movements. Similarly Kohli (2003) found that FII flows were effecting on money supply in the economy and leading to liquidity and volatility in the market[2] Bakaert and Harvey (2000) found that flow of FII have positive impact on the growth of the economy [3]. Since, economy is effected by flows so, quite possibility other macro economic factors like Inflation , Foreign Exchange Reserves, Exchange Rates might also be effected or may affect FII flows in the nation. This study does comprehensive analysis of time series properties of these variables and studies causal relationship with FII flow into the country for a period of 10 years from 2000 till 2011. Results unfold some interesting and new statistics which were undiscovered in similar studies done earlier.

This research firstly studies the time series properties of the variables under consideration using Augmented Dicky Fuller (ADF) test and KPSS test for stationarity. Make required a change to the series so as to make is suitable for applying the Granger Causality Test. The results and recommendations of this study would be useful to policymakers in exercising control over maco economic variables by controlling other.

Appendix : VIII

Determinants of Foreign Institutional Investment And Their Relationship Study

Suresh Kumar[1] and Jasdeep Dhami[2]

Abstract :

Foreign investment plays an important role in the economic development of a country. In the wake of economic liberalisation policy initiated in 1991, the Government of India has taken several measures to encourage foreign investment, both direct and portfolio, in almost all sectors of the economy.

The flows if these FII in India has been the results of many factors operating at the domestic and global level. Some of the main domestic factors are economic reading of the Indian economy, risk in Indian share market, home biasness, credit rating, price-earnings ratio, infrastructure facility, country risk and other economic factors like (industrial growth, inflation, foreign exchange reserves etc.), politically and economically stable environment., potential for growth opportunities, supportive policies of the host government towards FIIs , orientation towards privatization, more congenial taxation policies, a supportive and enabling investment environment—such as good governance practices, an effective legal system, better Administrative machinery , a suitable regulatory regime and a positive investment climate. And some of the major global factors are performance of other countries, global liquidity, interest rates in global market, tax heaven countries, the drivers in the global market , global crisis, herding mentality in FIIs, and so on.

Keywords: *FIIs, Determinants, Indian stock market.*

1. Introduction:

The flow of foreign capital was restricted by many countries including India till the early 1990s and there was huge dependence upon external financial aid and official development assistance. Gradually, the economies of most of the developing countries were opened by way of dismantling the so called capital controls in order to attract foreign capital, accompanied by domestic capital to speed up the domestic growth, productivity and output. Since then, portfolio flows from foreign institutional investors (FII) have emerged as a major source of capital for emerging market economies (EMEs) such as China, India, South Africa and Brazil.

Besides, this the substantial increase in foreign portfolio flows since early 1990s can also be attributed to the greater integration among global financial markets, more advancement in information technology and growing interest in EMEs among FIIs such as hedge fund and private equity funds in order to achieve the objective of

Appendix : IX

Vol. IV Issue-II February 2014 Asian Journal of Research in Business Economics & Management ISSN 2250-1673

TRENDS, MAGNITUDE AND COMPOSITION OF FIIs IN INDIA

Suresh Kumar, Dr Jasdeep Kaur Dhami***
*Associate Professor, School of Business, LPU, Phagwara
**Assistant Professor, LPU, Phagwara

ABSTRACT

Since 1991 when India under the so called regime of LPG (liberalisation, privatisation and globalisation) opened its economy, there have been continuous flows of Foreign Intuitional Investment. These flows have been experiencing different trends during the last few decades due to many domestic and global factors. The foreign investment which was just Rs 9933 in 2000-01 got increased to Rs 93725 in 2011-12. The numbers of FIIs registered with SEBI has also witnessed a sharp and steep increase confirming the ever growing interest of FIIs in India economy. Total FIIs registered was 527 in 2000-01 increased to 1765 in 2011-12. Moreover FIIs from various countries (USA, Singapore, Luxemburg, Australia, Mauritius and son) have shown great interest in the Indian stock market. Out of the total foreign portfolio investment as compared to ADRs/GDRs, offshore and other funds, FIIs have been contributing the maximum in the kitty of FPI.

Key words: FIIs, Indian stock market, FPI, SEBI, Offshore fund.

Introduction

Since 1991 till date Indian economy has gone through many developments. It has seen many contemporary changes in terms of changing trends in economic growth, inflation, high fiscal deficits, capital investment flows (FDI & FIIs),current account and capital accounts convertibility, foreign exchanges reserves and so on. In 1991 India faced major problems like low income level, low capital formation and quite low foreign exchange reserves and thereby it faced the challenge of no remarkable economic development and a big problem in making payments for imports. Under such situation there were two alternatives available; one was borrowings which were inherently limited and the second alternative was allowing foreign investors with abundant recourses to invest in the country. India decided to follow the second by liberalising its economy through its globalisation policies, and implemented the same during 1990s. India not only opened up its economy, it introduced many economic reforms with more thrust towards globalisation, privatisation and liberalisation. Since past 1990s , FIIs have been flowing in Indian economy with leaps and bonds except few years.

Review of Literature

A number of empirical researches have been undertaken upon foreign institutional investment. For this research, various empirical research papers which have addressed the various issues related to foreign capital flows and FIIs have been studied. Kohli (2003) in her paper "Capital Flows and Domestic Financial Sector in India" analysed that whole world including India had witnessed a significant changes in composition and direction of capital flows during the last decade (1990-2001). Mohan (2008) in his BIS (Bank of International Settlement) paper titled "Capital Flows to India" attempted to analysed foreign capital flows since post 1990s. The study observed that before the beginning of major reforms in post 1990s, the flow of foreign capital was very restricted to India and it was only the result of major financial reforms in 1990 which gave major impetus to foreign capital flows. Mohan (2008) in his BIS (Bank of International Settlement) paper titled "Capital Flows to India" attempted to analysed foreign capital flows since post 1990s. The study observed that before the beginning of major reforms in post 1990s, the flow of foreign capital was very restricted to India and it was only the result of major financial reforms in 1990 which gave major impetus to foreign capital flows. Bansal And Pasricha (2009), in the study on "Investment Trends of FIIs in India: An Analytical View" examined the investment trends by FIIs during the years from 1992 to 2009. The study observed that before 1990 the major funds in India constituted the money inflows from NRI and other commercial borrowings. However after 1990s, the whole picture got changed. Sumanjeet (2009) in his study titled "Foreign Capital Flows into India and Composition, Regulations , Issues and Policy Options" studied the contribution of various investing bodies (FDI, FPI, FVC, ECB, NRIs,etc) and the composition of foreign capital and the rules governing them. The period of the study was 1990-91 to 2007-08. The study observed that foreign capital had come to

Appendix : X

JOURNAL OF ACADEMIC RESEARCH IN ECONOMICS

IMPACT OF FOREIGN INSTITUTIONAL INVESTMENT ON THE VOLATILITY OF INDIAN STOCK MARKET

SURESH KUMAR[1]
Lovely Professional University, Phagwara, India
E-mail: Suresh.kashyap@lpu.co.in

JASDEEP DHAMI[2]
Lovely Professional University, Phagwara, India
E-mail: Jasdeep.dhami@lpu.co.in

Abstract

Firstly this research paper aims at discussing how the economic scenario post 1990s forced the Indian economy to open up with the three triggers of Liberalisation, Privatisation and Globalisation. This further discusses the opening of economy for the foreign investors under the given scenario. It narrates the positives and negatives of FIIs in India in terms of their impact on the Indian economy. Secondly it also studies the movement of Indian stock market i.e. BSE Index vs. FIIs investment. Thirdly and more importantly this paper has also made a herculean efforts for studying the impact of FIIs investment on the volatility of Indian stock market on the basis of daily as well as monthly data (from 2000 to 2012). For daily data 3000 observations have been used and for monthly data 156 observations have been used. GARCH and ARCH techniques have been applied for the same. The time period from 2000 to 2012 has been divided into two phases i.e. pre crisis period from 2000 to 2008 and post crisis period from 2009 to 2012. It has been found in the study that FIIs flows have had an impact on the volatility of the Indian stock market in the pre crisis as well as post crisis period.

Keywords: FIIs, Volatility, BSE, Sensex.
JEL Classification: F 21.

---

[1] Suresh Kumar, Associate Professor, School of Business, LPU, Phagwara
E-mail: Suresh.kashyap@lpu.co.in
[2] Jasdeep Dhami, Assistant Professor, School of Business, LPU, Phagwara
E-mail: Jasdeep.dhami@lpu.co.in

CHAPTER – 1

INTRODUCTION

1.1 INTRODUCTION

Since 1991, Indian economy has emerged as a prominent market for the global investors. The FII, in particular, has constituted a major portion of the total foreign capital flows in India over the last few decades (*Pati, 1999*). These capital flows have had both positive as well as negative repercussions for the Indian economy. On the positive side, these capital flows have speeded up the process of economic development by augmenting the domestic investment, contributed towards increased market capitalization, enhanced the level of competition in the Indian capital market and widened the scope for financial intermediation of the Indian economy. But at the same time, these capital flows have also posed several threats to the economic and financial system of the Indian economy in terms of inflationary trends, appreciation in ER, overheating of the Indian economy and unmanageable volatility in the Indian capital market due to the uncertain nature of these FII flows characterised by the possibility of their sudden withdrawal.

Foreign institutional investors' money is often referred to as 'Hot Money' because the FII flows are considered more volatile than other market forces working in the capital market. However, there is one more school of thought who considers FIIs as fair weather friends because they continue to invest in a country till the time they enjoy good returns; and pull their money back from the market, the moment they smell small sign of trouble *(Report of Working Group on Foreign Investment, 2010).* The same experience was felt in India during 2007. FIIs showed great interest in the Indian economy during the year 2007-08 putting in an investment worth Rs. 66179 crore the highest ever investment since their beginning in India in 1992. These unprecedented flows of FII led BSE Sensex and NSE Nifty to go beyond the level of 20000 and 6000 points respectively during that year itself. But, due to the global financial crisis (sub-prime crisis which originated in USA), their investment took a total turnabout change and they pulled back more than Rs. 50000 crore from the Indian stock market during 2008 leading to the biggest ever market crash

(Sumanjeet, 2010). Thus, FII flows have been impacting various economic factors of the Indian economy directly and indirectly. Some of the major factors which have been affected by FII flows include Risk-Return patterns, Volatility in the Stock Market, Inflationary Trends, Economic Growth, FERs, ER and so on.

Thus, there are many perspectives attached with FII flows in the Indian economy. From the problem of scarcity in the early 1990s to the problem of plenty now, the large FII flows in our economy have assumed great importance in recent times. However, at the same time, managing such enormous flows has become a challenge in itself. Such foreign capital flows have thrown up new policy challenges before the country as they have influenced all the major macro level economic factors like Inflation, FERs, ER, Market Capitalization, Market turnover etc.

Moreover, as India has already been undergoing the process of liberalization of the capital account, it is going to have an important effect on the flows of foreign investments and particularly on flows of FII, because this would have an untold impact on the stability of Indian stock market in the short period and the Indian financial market in the long period. This issue has become extremely important for the contemporary policy makers since managing such large FII flows in India in recent times has come to haunt both the RBI and the capital market regulator (SEBI). Given the above scenario, it is important to study further the FII magnitude, their investment trends, their determinants and their impact upon various macro level factors of the Indian economy as it would help various stakeholders (Government, RBI, Capital Market Regulator-SEBI, domestic and individual investors, middlemen etc.) to fine tune their policies and decision making process with regard to FII. More precisely speaking, the aim of this study is to throw more light on the analysis of FII flows in India. It is hoped that the insight offered by this study would help the policy makers to construct suitable foreign investment policies in such a way that, on the one hand, the Indian economy would enjoy substantially large flows of FII, but at the same time, there would not be any unnecessary enhanced degree of volatility in the Indian capital market. This would help in cementing, consolidating and stabilising the economic scenario of the Indian economy in general and

confidence of the investors in particular. This would further help India in showcasing its self as a desired and potential destination for foreign investment by FIIs.

1.2 EVOLUTION OF INDIAN FINANCIAL SYSTEM

There have been continuous developments in the Indian financial system since independence and the present system is the outcome of these developments. Broadly speaking, the evolution of the Indian Financial System can be classified into three phases from the point of view of its exposure. The brief details of these phases have been outlined as below:

i) Phase I : Pre 1980

ii) Phase II: 1980 -1990

iii) Phase III: Post Nineties

i) Phase I : Pre 1980

From 1947 till 1980, Indian economy was not an open economy. There were many noticeable characteristics which featured the Indian economy. Some of the prominent features were as follows:

- Interest rates were controlled and not market driven.
- Lot of controls existed upon the industry through licensing policy.
- Public sector dominated the industry scenario.
- There was very limited competition.

The consequent impact of these controls was that the Indian resources, be it the human resources or the natural recourses remained not only underutilized; there was also emergence of a non-economic and an ineffective Indian economic system. This led to low productivity and more dependence on foreign aid in spite of high saving rates in the country. Because of the closed economic system, economic growth rate of India hovered around 4 % for more than 35 years *(Mohan, 2008).* And on the contrary, many other comparatively less developed countries achieved a growth rate of over 5 % per annum. Moreover, countries like Japan and other East Asian countries were also able to catch up

with the industrialized countries of the west by adopting market-oriented patterns of industrialization.

ii) Phase II: 1980 -1990

Prior to the onset of financial sectors reforms in 1991, the capital market structure in India remained subject to several controls and opaque procedures were adopted from 1980 to 1990. During these years, the main objective of control over capital issues was to channelize the limited capital resources available for investment in the country into the desired areas. Apart from this main objective, capital issues control was also put to several others uses, some of these were as follows (*Phull, 2013)*:

- Regulation of bonus issues.
- Regulation of terms and conditions of foreign capital participation in the Indian companies and regulations of the terms and conditions of dilution or repatriation of foreign equity.
- Regulation of capital re-organization plans of companies including mergers and amalgamations.
- Regulation of capital structure of companies as well as the terms and conditions of additional issues.
- Regulation of the volume and timing of the private issue of capital.

Moreover, during this period, the trading and settlement system was outdated and was not much in tune with the international practices. At that time, the capital fund raising from the market was under the regulation of the Capital Issues Control Act, 1947 which in turn was under the administration of the Controller of Capital issues, the Ministry of Finance, Government of India.

iii) Phase III: Post Nineties

In the initial phase of 1990s, the whole world faced the trauma of Gulf war; and as a result, the oil prices all over the world observed unprecedented increase. This increase in oil prices was further accentuated by steep decrease in the foreign capital in the form of reduced capital remittances which the people settled in gulf countries used to

remit to their country including India. And a result, foreign exchange crisis was seeded in the worsening condition of India's balance of payment account *(Cerra and Saxena, 2002).* The story did not stop here, the birth of one more fear that the Indian government might default in its external financial commitments led to the outflows of foreign capital from the Indian economy. Thus, the real reason behind this crisis was burgeoning fiscal deficit and non existence of an effective financial strategy which allowed many lacunas to exist and ultimately got aggravated. Under such conditions, the first task before the Government of India was to control fiscal deficit there by 'the balance of payment' scenario; and second task was to keep the momentum high for the economic reforms initiated post 1980s.

Under such pressing economic conditions, Government of India initiated many reforms in the post 1990s era for the above stated objectives. Under this process of reforms initiation, domestic investment was liberalized, infrastructure sector was opened for private players, a large number of barriers like import tariffs and controls were reduced to bring in more competition, interest rates were de regularized, foreign capital was encouraged as the polices motivated the entry of FIIs along with provoking them to enhance their investment in the Indian capital market, public sector units were disinvested and a large number of tax reforms were also introduced in the Indian economy.

Thus, along with all these reforms, the major thrust was undertaken to encourage FDI and FII in India. Subsequently, in almost all the sectors of the Indian economy, foreign direct investment with 100 % participation was allowed. More importantly in 1992, FIIs were also allowed to make investment in the India stock market. Though in the initial stage, the limit was fixed up to 24 % only. This limit was kept applicable on the paid up share capital of the concerned public limited company. However, it was made mandatory for the company to have approval from the shareholders for allowing FIIs to make investment in the concerned company. These limits were further increased many folds subject to certain conditions. Moreover, the protection of property rights, physical as well as intellectual; and other basic rights continued to be a recognized aspect of the operating environment for foreign investment in India. Later on, India became the

member of the Multilateral Investment Guarantee Agency *(MIGA)* which protected investors by way of insurance for their non-business risks including expropriation. Further, India entered into investment agreement on bilateral basis with many countries as a result of which the foreign investments from these respective countries remained protected.

Gradually, many positive steps were announced and taken by the Government of India which helped in making Indian capital market more efficient and lucrative. These developments enabled the companies to raise finance from the domestic as well as from the foreign market. One of the major steps amongst these was that the office of the Controller of Capital Issues (CCI) was abolished and in lieu of that, autonomous body called 'Securities and Exchange Board of India' was established. Through these steps, government helped the Indian companies to raise their required funds through various foreign markets like Euro issues. The establishment of SEBI also helped in creating a more congenial environment for FIIs as various effective measures were announced by it from time to time. Moreover, to make trading more transparent and efficient and for minimizing transaction costs, open outcry trading system was also replaced with screen based online trading system. This practice integrated Indian stock market further with the global stock markets as the flow of information became more speedy and transparent.

Thus, one of the best responses of India's liberalization policy has been from FIIs in terms of their huge portfolio investment, particularly, in the equity capital of the Indian companies. And moreover, GDRs and ADRs issues have also been permitted to be issued by the Indian companies with high credit rating. In short, it is safely concluded that the private capital flows have become a very important part of the Indian capital market and these flows have dominated FPI scenario in the Indian economy *(Kohli, 2003)*.

1.3 EVOLUTION OF POLICY FRAME WORK FOR FII IN INDIA

Till 1980s, the overall objective of the Indian economic policies has focussed on being more self reliant and self sufficient for the substitution of imports. Till that time, Indian government has been trying to meet its needs for capital account deficit particularly through official development assistance (ODC) and debt flows. Foreign

capital flows and other private flows have not been much resorted to. However post 1990s era, when Indian government introduced many large scale economic reforms, its primary aim got focussed on the foreign capital flows including both FDI and FII. The overall perspective about the financial reforms pertaining to external sector was also discussed in the 'High Level Committee Report' framed to give valuable suggestions on the balance of payment situation under the Chairmanship of C. Rangarajan. This committee gave many land marking recommendations. Some of the major recommendations of this committee were as follows:

- It suggested that there should be a gradual shift from debt-oriented flows to non–debt oriented flows.
- It suggested that there should be strict regulations for the External Commercial Borrowings (ECBs).
- It also suggested that the volatile portion within the NRIs investment in the Indian economy should be discouraged.
- It suggested that gradually capital flows in the Indian economy be further liberalised for getting more FERs.
- It also advocated that the government's role as a middleman should be reduced as much as possible.

Consequently, after the government introduced many reforms in post 1990s era, the capital account component of balance of payment was made more convertible which was earlier totally non-convertible. After September, 1992, FIIs as well as Overseas Corporate Bodies were allowed to make investment into the primary market of the Indian economy. However, a separate press note (dated 14 September, 1992) on FII was issued in the form of GOI's guidelines which not only made it compulsory for FIIs to get registered with SEBI but it also clarified each and every aspect relating to FII in the Indian economy *(Indian Securities Market Review, 2011).*

As per the SEBI guidelines and RBI rules, the initial permission was granted for 5 years for FIIs to trade in the Indian stock market and thereafter, they were required mandatorily to get it renewed. As per the rules and regulations contained under FERA

Act,1973, FIIs could involve themselves in selling, buying and making capital gains on the securities held by them. However, they could trade in the securities of only those companies which were registered on the recognised stock exchanges. They were also allowed to operate through their domestic agents i.e. authorised bank and one authorised custodian which would maintain all the records relating to their trading activities in the Indian stock market.

The guidelines issued by SEBI in 1992 also mentioned as to who is eligible to be registered as FIIs, their financial condition, past history (track record) etc. These guidelines were exclusively explained in SEBI Regulations Act 1995. One of the major objective of these guidelines was to maintain a proper balance and link between the guidelines issued by Government of India and the regulator (SEBI) in such a manner that FIIs were not only guided by SEBI, they also follow the same. By this mechanism, the government has been able to prescribe the limits for FII in various Indian industries. As per the FEMA Act, 1999 which started applying from 2000 onwards, the purpose of these guidelines was to control FIIs' transactions also, thereby protecting the Indian economy from over or under heating.

From 1992 till date, almost all the securities have been opened where FIIs could make investment or where they could trade. This includes the securities of the Indian primary market as well as secondary market like equity shares, preference shares, warrants, debentures and different types of mutual fund schemes started by various Indian companies and mutual fund houses which have got themselves registered on the recognised stock exchanges. A brief review of the major policy changes and initiatives for FII has been provided in the following table:

Table 1.1 : Policy Changes for FII in India

Year	Policy Changes
September 1992	For the first time in the history of the Indian stock market, the FIIs were allowed to make investment in almost all types of securities of the Indian primary as well as secondary market. However, there were some conditions to be observed e.g. a single foreign institutional investor could invest up to 5 % and all FIIs taken together could invest up to 24 % of the company's total capital issued.

Year	Policy Changes
November 1996	Operational flexibility was offered to FIIs by allowing fully debt oriented FII.
April 1997	30 % was the new limit up to which FIIs could invest. However such limit was subject to some special provisions and resolutions. And the aim was to encourage more FII in India.
April 1998	Dated government securities were opened for FII. This investment was allowed through the normal route as well as through fully debt oriented fund route. But there was an overall approved limit up to US $ 1 billion. In 2004, this limit was enhanced to US$ 1.75 billion.
June 1998	Total investment limit in portfolio securities was increased from 5 % to 10 % for FIIs, Persons of Indian Origin/Non Resident Indians/Overseas Commercial Borrowers.
June 1998	Forward contracts were permitted in equity market. FIIs were allowed to invest in equity based derivatives so that hedging instruments could also be made available.
February 2000	Foreign organisations and individuals with high net worth were allowed to make investment as sub-accounts. Domestic overseas bodies with interest in portfolio investment were permitted to get registered in the name of FIIs so that they could manage the sub-accounts' funds. The aim of this reform was to bring in more operational flexibility, and also to ensure that FIIs could have access to the domestic asset management capability.
March 2001	Under the provision of special procedure, FII limit was increased to 49 %.
September 2001	Under the provision of special procedure, FII limit was raised to sectoral cap.
December 2003	A single approval system was introduced for FIIs' registration instead of dual system of approval from SEBI and RBI which was existing earlier. The objective of this initiative was to make the system simpler and less time consuming.

Year	Policy Changes
November 2004	The limit for outstanding corporate debt had been prescribed up to US $ 0.5 billion. The main objective of this move was to reduce the flows of short-term debt.
April 2006	US $ 1.5 billion was the new corporate debt limit. Moreover, for FII to be made in government securities, the limit was increased to US $ 2 billion. There was a special mention of the same in the Union Budget of 2006-07.
November 2006	FIIs could make investment up to 23 % of their capital in the securities of a special class of institutions e.g. Clearing House corporations, Depository Houses and Stock Exchanges. This was done in the light of compulsory regulations for demutualisation and stock exchanges' corporatisation.
January and October 2007	Further, the limit for FII in government securities was increased to US $ 3.2 billion.
June 2008	In the light of analysis of the ECBs' scenario, the following decisions were taken: 1. The cumulative debt investment limit was increased from US $ 3.2 billion to US $ 5 billion. 2. The cumulative corporate investment limit was increased from to US $ 1.5 billion to US $ 3 billion.
October 2008	The cumulative debt investment limit in corporate was increased from to US $ 3 billion to US $ 6 billion.
October 2008	The FII limit restriction in the ratio of 70:30 in equity and debt respectively was removed.
October 2008	The restrictions applying on Overseas Derivative securities were removed.
March 2009	FIIs' lending of shares in the foreign market was disapproved. And a new platform of E-bids was introduced for FIIs.
August 2009	Interest rate futures were opened for FIIs also.
April 2010	Domestic government securities and foreign sovereign securities (having AAA rating) were permitted to be used as collateral securities (in addition to cash) to be deposited with the Indian stock exchange for transacting the business in the cash domain.

Year	Policy Changes
November 2010	FII limits both in corporate bonds as well as in government bonds were increased by US $ 5 billion. In case of corporate bond, it was increased to US $ 10 billion; and in case of government bond, it was increased to US $ 20 billion.
March 2011	FII limit in the corporate bonds of those companies which deal in infrastructure was increased substantially from US $ 5 billion to US $ 25 billion.
August 2011	Guidelines had been issued for Qualified Foreign Investors also. These guidelines were applicable for those QFIs who followed KYC norms. Direct route was opened for Qualified Foreign Investors' investment in equity and debt scripts of various mutual funds.
September 2012	The allocation procedure for FII's debt limits was changed to the open bidding process wherein bifurcation in terms of lock-in-period and manner of allocation for long term infrastructure limits was increased up to US $ 22 billion.
January 2012	The re-investment mechanism had been discontinued for all new allocations applying to debt limits for FIIs/sub-accounts; And the limits would come to the pool once the investment was sold/redeemed. These limits would again be allocated in the subsequent bidding processes.
January 2012	Qualified Foreign Investors (QFI) meeting 'Know Your Customers' norms were also permitted to make investment into the securities of those companies which had been registered with the recognised stock exchange(s) in India. But the applicable condition was that all these shares had to be held by them in DEMAT account. And such account must also be opened with a recognised depository participant which in turn should be registered with SEBI.
March 2012	A dossier on the use of very advanced automated software was recommended by SEBI in order to avoid various types of risks caused by brokers.
September 2012	SEBI simplified the 'Know Your Client' (KYC) requirements for foreign investors thereby making it simpler for FIIs to make investment through the portfolio route.

Year	Policy Changes
January 2013	For that FIIs/sub-accounts which could not be able in holding debt investment limit during 2012 were allowed to exercise re-investment provision and facility up to maximum of 50 % of the debt holding during the year 2013.
April 2013	Again all FIIs and sub-accounts were allowed to make re-investment facility provision to the maximum limit of 50 % of the holding of debt by them by the end of the year

Source: Indian Stock Market Review-2011, NSE.

1.4 SOURCES OF FOREIGN CAPITAL FLOWS IN INDIA

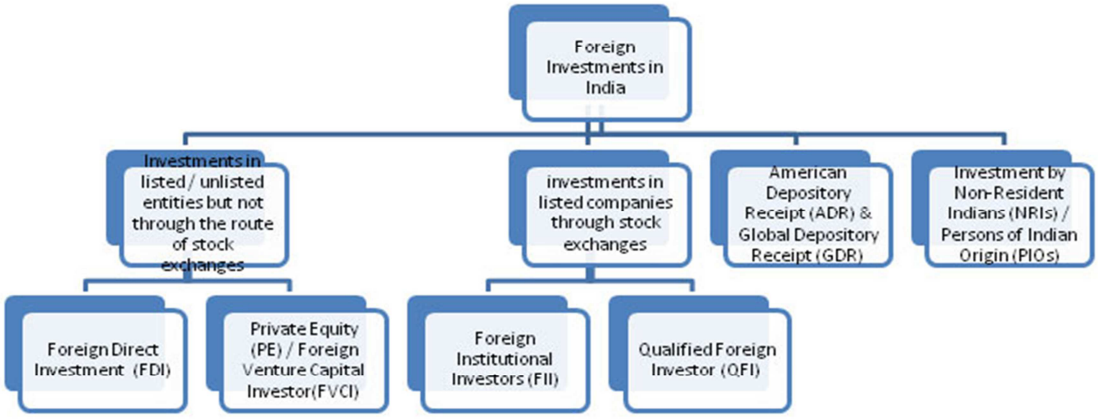
There has been a large range of sources in the global capital market from where funds have been flowing to various developing countries including India. Some of the major sources amongst the same include FDI, FVCI or Private Equity, investment by NRIs, ECBs, ODA, FCCBs, FDI and FPI. A brief summary of foreign capital flows has been shown in the Figure 1.1.

After various capital market reforms initiated under the slogan of LPG (Liberalisation, Privatisation and Globalisation) in the post 1990s period, one of the main policy change was the fact that the Indian corporates were permitted to raise funds from the global financial market. Earlier, debt was the main source which was permitted to be raised from the global market. In the early part of 1990s, the corpus of Indian FERs came down drastically and the country's rating was downgraded by various international credit rating agencies. This led to a big crisis in maintaining the required amount of FERs (*Cerra and Saxena, 2002).* Under such circumstances, it became very difficult for the Indian government to meet the import bill requirements of the Indian companies. Thus, one of the most amicable solutions under such tight financial conditions was the decision to allow Indian corporates to raise funds from the equity and bond market of the foreign countries.

Subsequently, the Indian companies have tapped foreign market and raised the money from international markets through various instruments like American Depository Receipts, Global Depositary Receipts, Foreign Currency Convertible Bonds (FCCBs) and

other methods of External Commercial Borrowings (ECBs). Along with this, FIIs from many foreign countries have also showed great interest in the Indian capital market and have invested heavily in the securities of the Indian companies.

Figure 1.1 : Foreign Investments in India



Source: Indian Stock Market Review-2011 published by NSE.

Though there are many channels of foreign capital flows in developing countries like India, some of the important ones are discussed as follow:

1.4.1 ODA (Official Development Assistance)

1.4.2 ECBs (External Commercial Borrowings)

1.4.3 FCCB (Foreign Currency Convertible Bond)

1.4.4 Foreign Venture Capital Investor (FVCI)

1.4.5 FDI (Foreign Direct Investment)

1.4.6 FPI (Foreign Portfolio Investment)

1.4.1 Official Development Assistance (ODA)

These are the official flows for financing various types of projects. The reason for the existence of ODA is to promote the welfare and all round development of the developing countries. Such financing is done with some concessional rate of interest usually fixed at 10 %. These flows also carry an element of grant up to 25 % of the total

flows. It has been the convention that ODA flows are financed by the various donor agencies of government at different levels to either multilateral agencies/institutions or the under developed or the developing countries too. There may be some bilateral ODAs also. ***----- (Organisation for Economic Cooperation and Development)***

The government and the government agencies of the developed countries have been providing economic assistance to the less developed and the developing countries of the world. Through UN General Assembly resolutions in 1970, the developed countries of the world have pledged to commit at least 0.7 % of Gross National Product as ODA for the underdeveloped and the developing countries *(Kevin, 2010).* The target has been reaffirmed in the subsequent conferences on ODA. The UN Millennium Project which has specific development goals known as 'Millennium Development Goal' to be achieved by 2015 has again urged all developed countries to contribute at least 0.7 % of their GNP towards achieving MDG by 2015 *(Kevin, 2010).*

Though the developed countries have generally failed to achieve this target, they have been an important source of official development assistance. Unfortunately, over the years, ODA has lost its dominance in capital flows because of certain underlying reasons, like failure on the part of developed countries to achieve the targets, misappropriation of aid receipts, prevalence of corruption at all levels in the recipient countries and availability of other sources of foreign capital across the world.

1.4.2 External Commercial Borrowings (ECBs)

External Commercial Borrowings typically mean the loans from commercial banks in the form of commercial loans. These loans may take any of the forms like bank loan or buyers' credit or also other securities which may include fixed interest rate bonds and floating interest rate notes. Such loans are usually made available in the country by non-resident lenders. These loans are usually issued for a duration of 3 years. The spectrum and scope for ECBs also get extended to include FCCBs (foreign currency convertible bonds). There are two routes through which ECBs can be raised: Automatic Route Method and Approval Route Method *(Khan, 2011).*

i) **Automatic Route Method:** The ECBs under automatic route don't require the approval from RBI or Government. Usually, the money raised and to be used in the real sector like infrastructure and the industrial sector fall under the category of automatic route method.

In addition to banks, NBFCs and the housing finance companies, only those corporates are allowed to borrow money through this route which are registered under the Companies Act 1956. Additionally various international banks and agencies like Asian Development Bank , International Finance Corporation , Import Export Houses are also legally recognised body to operate through this route. External Commercial Borrowings up to US $ 500 million having maturity period between 3 to 5 years per borrowing company per financial year has been permitted under this rout *(Sumanjeet, 2009).*

ii) **Approval Route Method :** The eligible borrowers under this route are as follows:

(a) Financial institutions which deal specifically in infrastructure and export financing e.g. Power Finance Corporation (PFC).

(b) Financial institutions which are active participants in the steel and textile restructuring processes approved by Government of India.

(c) NBFCs which apply for ECBs with minimum 5 years having enjoyed the status of Multilateral Financial Institutions.

(d) FCCBs and Corporates in service sectors like Hotels, Hospitals and NGOs engaged in micro finance.

During 1970s, Official Development Assistance from bilateral sources of multilateral agencies like World Bank, IFC, and ADB was the main source of capital for the developing countries. Initially, ODA sources were very limited to meet the ever rising demand of the developing countries, so they started searching for alternative sources of capital. Subsequently, ECBs emerged as an alternative source of international capital. It has been experienced over the last couple of years that Indian companies have been raising ECBs for financing their various types of projects including infrastructure projects. In August 1996, it was the Reliance Petroleum which became the first Indian

corporate to raise funds through the channel of ECB. The aggregate value of the issue was US $125 million *(Pathak, 2008)*, and it was considered to be one of the most important event because Reliance was the only Indian company at that time which raised such a huge amount from the international market through this route. As ECBs supplement to the domestically available sources of funds, it helps the companies in enhancing their existing production capacity as well as making fresh investment. Over the years, Indian corporates have followed and preferred this means of funds because the cost of ECBs has been found to be comparatively low in global markets. As the norms of raising funds through the channel of ECBs are quite sound, hence in case of any default, the repercussions are also stern and wider as it increases the risk premium for the borrowers. FCCB being very important component of ECB has been discussed separately in the subsequent pages.

1.4.3 Foreign Currency Convertible Bond (FCCB)

FCCB simply connotes a bond which is expressed in foreign currency denomination. In this case, the principle as well as interest amount due on FCCB is also expressed and paid in foreign currency. Indian companies also issue such bonds. These are subscribed and applied to by a person who is a resident outside India. Such bonds offer a fixed coupon rate and they can be converted into equity shares at a pre decided price. There are two options for the conversion of FCCBs i.e. full conversion or conversion in parts. These bonds are listed in the foreign stock exchanges and are traded therein. Till the time, the conversion option of FCCBs is not used, the issuing company has to make payment of interest in US dollar. Suppose the conversion option of FCCBs is not used till the time of maturity, then even redemption of FCCBs has to be made in US $. One important thing to note is that the interest rate due on FCCBs is quite low but the exchange risk is quite high as the interest due is payable in foreign currency. Therefore, the companies having low debt-equity ratio and good potential for earning more foreign exchange reserves prefer such option. It has been observed that the rate of coupon interest on FCCBs is lower than the domestic rate and it becomes quite cheaper for the corporates to raise the funds from such a source. The issuance period of FCCBs is 5 years. However, no time period restriction has been existing with regard to conversion of FCCBs into shares.

The scheme of FCCBs has three types of controlling mechanism:

i) Automatic Clearance: Bonds up to the value of US $ 50 million are cleared automatically.

ii) RBI: Bonds having value between US $ 50 million to US $ 100 million are cleared by RBI.

iii) Ministry of Finance: Bonds with value above US $ 100 million are cleared by Ministry of Finance.

Between 2001 and 2002, there were two public issues of FCCBs, one by BSES and another by Gujrat Ambuja Cement. Subsequently in 2004, US $ 1.6 billion FCCBs were issued by Indian companies. This had been possible for the two reasons namely: low interest rate and surge of Indian equity market *(Pathak, 2008).* With the stock market becoming buoyant, FCCBs have also emerged as more preferred route to raise foreign currency than pure ECBs.

1.4.4 Foreign Venture Capital Investor (FVCI)

It is an investor which is established and incorporated outside India. Such investor proposes to make investments in venture capital fund(s) or venture capital undertakings operating in India and are compulsorily registered as per the SEBI (FVCI) Regulations Act, 1996 and Foreign Venture Capital Investor - SEBI Regulations Act, 2000.

Venture capital means an investment opportunity or venture which has very high degree of return as well as high degree of risk. The financing from venture capital is done generally in the form of equity stake rather than as a loan by an outside party which may be a bank or a financial institution. In 2000, as per the recommendations of the committee under the chairmanship of Sh. K.B. Chandrasekhar, SEBI was made the nodal regulator for this. Subsequently, SEBI (FVCI) regulations Act, 2000 was enacted which freed the industry from bureaucratic hurdles and provided a platform for the entry of foreign funds in India. Total VCs and FVCIs registered with SEBI stood at 205 and 164 respectively in the year 2011-12. There was total US $ 10.78 billion investment by VCs and FVCIs in the venture capital undertaking as on 31 March 2011. Now, almost all the sectors have been opened for financing by FVCIs except very few areas like financing of gold trading,

non-banking services and activities not allowed as per the Industrial Policy of Government from time to time (*Parekh, 2012).*

1.4.5 Foreign Direct Investment (FDI)

Under this form of foreign capital flow, either there is direct participation by the foreign players in the ownership of the Indian company or setting up of its branches, subsidiaries or expanding its foreign branch business or acquiring an Indian company or merging with the same with long term interests to be pursued. The United Nations Conference on Trade and Development (UNCTAD) has defined FDI as "When a foreign player makes permanent investment in the enterprise outside the boundaries of its own country with the long lasting interests to be pursued, it reflects a true example of FDI". Broadly speaking FDI takes place through two routes namely: Government Approval Route and Automatic Route.

- **Government Approval Route**:

Under the philosophy of government approval route, a specialised board called 'Foreign Investment Promotion Board' (FIPB) operating under the control of Government of India has been established. The main objective of the board is to consider the FDI proposals which do not fall within the purview of automatic route as per certain guidelines issued from time to time. For the following sectors, FDI is neither allowed through government route nor through automatic route (FDI *policy 2013).*

i) Business of Chit Fund
ii) Lottery Business
iii) Nidhi Company
iv) Atomic Energy
v) Gambling
vi) Agricultural and Plantation activities. However, in case of agriculture, there are certain areas which are not covered under the government approval route like Animal Husbandry, Horticulture, Development of seeds, Pisciculture, Floriculture, and vegetable cultivations, mushrooms cultivations and agro and

allied sectors. In case of plantation activities, tea plantations are also excluded from the scope of this approval.

vii) Real Estate and Housing Business.There are certain areas like townships development, commercial premises and residential buildings, bridges and roads which are excluded from the scope of this route but to the extent as specified in the FIPB guidelines.

viii) Trading involving Transferable Development Rights.

ix) Cigars, Cigarillos, Cheroots and Cigarettes, Tobacco or substitutes for tobacco products.

All these sectors fall in the negative list. Basically, FDI investment promotes a long-term relationship between the foreign entity and the domestic company through active participation in managing the affairs of the company on a mutual consent basis. Foreign individual, corporate, company, or organisation may bring in FDI in various forms. For example, it may be joint a venture or merger or acquisition or starting of new subsidiary with 100 % stake in it or even expanding the business of existing branches or establishment of new branches also *(Kevin, 2010).*

- **Automatic Route:**

It is the FDI route under which no prior permission of Government is needed to make investment. As per the *FDI Policy 2013,* some of these sectors are as follows, subject to the conditions provided in the same policy:

i) Agriculture and Animal Husbandry

ii) Mining and Exploration of Metal and Non-Metal

iii) Coal and Lignite

iv) Petroleum and Natural Gas

v) Broadcasting Carriage Services

vi) Cable Networks

vii) Airports

viii) Air Transport Services

ix) Construction and Development : Township, Housing , Built in infrastructure

x) Industrial Parks

xi) Trading (Cash and Wholesale)

xii) Banking –Private Sector

xiii) Insurance

xiv) NBFCs

However, a special approval of Government is required in the following sectors:

i) Sectors that involve Industrial Licensing.

ii) If the proposed foreign direct investor is already having existing tie up in the same field.

iii) If an NRI makes a proposal to acquire stake in the Indian company.

1.4.6 Foreign Portfolio Investment (FPI)

Foreign Portfolio investment consists of the following forms of investment:

i) Global Depository Receipts

ii) American Depository Receipts

iii) Country Funds

iv) Offshore Funds

v) FIIs

The investment horizon of FDI is usually broader than FPI. This is so because FDI flows are encouraged by long term interest in controlling the destination of the firm whereas FPI flows are predominantly tempted by financial returns which may take the form of dividend or capital gain to be earned on investment in the host country. Within FPI, GDRs, ADRs and FII are the major sources of finance *(Kohli, 2003).* The discussion on the active components of FPI is undertaken in the following pages:

i) Global Depository Receipts (GDRs)

GDRs are the negotiable financial securities traded on a local stock exchange but they represent securities (usually equity shares) issued by a foreign public listed company *(Kevin, 2010).* GDRs allow investors in one country to hold the securities of companies

of other countries. In the functioning of GDRs, the two key functionaries are the depository and the custodian. Depository is a bank or financial institution in the foreign country such as Europe where GDRs are proposed to be issued, appointed or designated as depository by the issuing company. The shares or other securities set apart for the foreign market are issued to the depository. Custodian is a bank appointed by the depository to keep custody of the securities issued to the depository.

The shares issued to the depository are bundled or grouped into convenient lots by the depository. A depository receipt is issued by the depository to represent ownership in such group of shares of the issuing company. These GDRs are issued to the investors in that country; these are negotiable and are traded in the stock exchanges of the country. These are freely transferable outside the domestic country (e.g. India) and dividend due on them is pain in rupee form as GDRs can be converted into shares at any time. Before the conversion of GDRs into shares, there are no voting rights available to GDRs holders. But the moment GDRs are converted into shares, the holders of GDRs get the voting rights.

Many of the Indian companies have had their GDRs issue on London Stock Exchange and Luxemburg stock exchange. GDRs of big Indian corporates are mainly issued to the institutional investors and majority of them are based in USA, UK, Singapore, and France. It is worth to note that GDRs also provide some special benefits to the issuing companies *(Kevin, 2010).* Some of these benefits are:

- There is no dilution of control as the GDRs before conversion have no voting rights.
- There is no foreign exchange risk as dividends and other benefits are paid in the domestic currency.
- Foreign Exchange resources become available to the issuing companies.

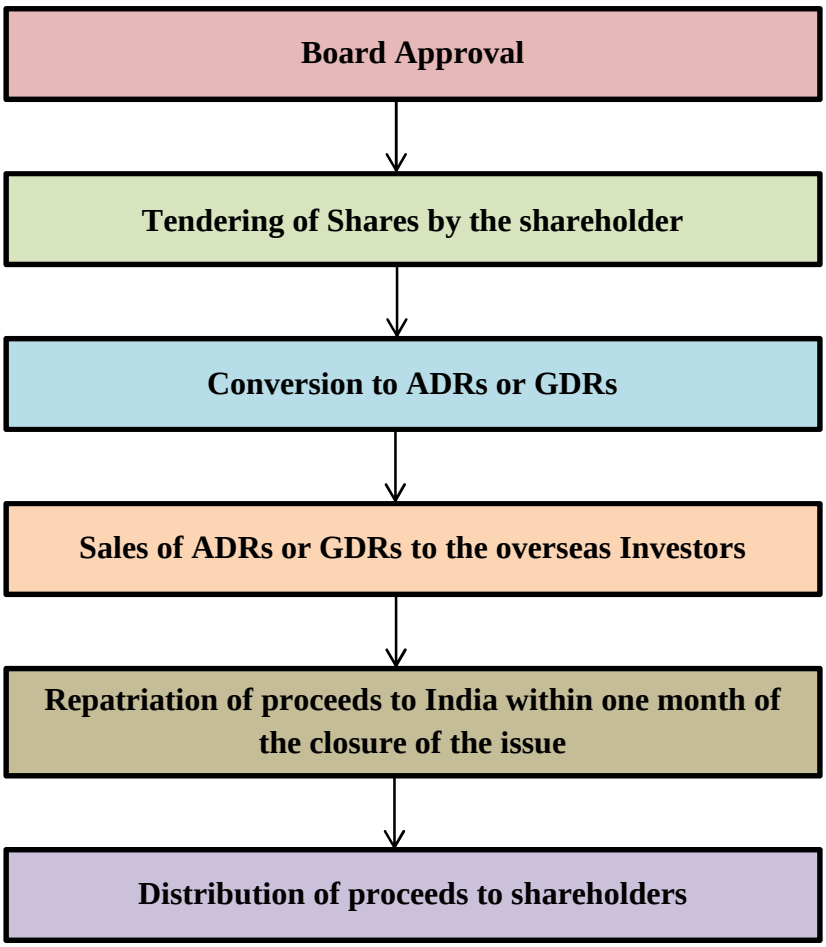
ii) American Depository Receipt (ADRs)

ADRs represent ownership in the stock of a non-US based company. Each and every ADR may represent a fraction of a security. This means, it may represent a single share or multiple shares also *(Kevin, 2010).* ADRs are issued by a US depository bank in

exchange for the shares of a foreign company deposited with the depository based in the domestic country. The largest depository bank in USA is the Bank of New York. There are various types of ADR issues which a foreign company may choose and finalise for listing and trading its shares in USA based stock exchange (s).

In case of ADRs, there are both sponsored and unsponsored programmes followed. The sponsored programmes are of different level such as Level 1, Level 2 and Level 3. In a sponsored Programme Level 1, the foreign company is required to have a single designated depository to act as its transfer agent. The ADRs which are issued as per Level 1 can be traded only on the OTC exchange market. The company which adopts Level 1 programmes for its ADRs issue has minimal reporting requirements.

Figure 1.2 : Process of Issuing ADRs and GDRs



Source: Bharti V. Pathak, Indian Financial System, Pearson Education 2ed Edition.

The company or companies issuing ADRs under level 1 programmes are not required to issue periodic reports like quarterly or annual reports. They are also not required to follow the standards explained as US Generally Accepted Accounting Principles (GAAP) for their reporting purpose and they may use their own currency in their reports.

ADRs issued under Level 2 programmes are eligible for their listing on the national stock exchange(s) of USA such as NYSE, NASDAQ and AMEX. Such issue comes under the American SEC (Securities and Exchange Commission) regulations. The foreign companies are required to comply with the SEC reporting regulations. They have to file annual reports prepared according to the GAAP standards. They are also required to fulfil the listing requirements of the stock exchanges where these ADRs are listed.

A foreign company which adopts Level 3 programmes can not only list the ADRs for trading in the US national stock exchanges but can also use them to raise fresh capital from the USA capital market. Other reporting requirements applicable under SEC are the same as are applicable for companies following Level 2 programmes. In an unsponsored ADR programme, there is no formal agreement between the foreign company and any custodian bank in the USA. ADRs are issued by any depository as per the demand for such ADRs. These ADRs can be traded only on the OTC market. As these are mostly private in nature, no regulatory reporting requirements are imposed on the foreign company. The process of issuing GDRs and ADRs has been outlined in figure 1.2.

1.5 REGULATORY FRAMEWORK FOR FIIs IN INDIA

A foreign institutional investor is an institution which has been incorporated and established outside India and whose objective is to earn return by investing into different types of securities of various companies operating in the Indian capital market.

"FII is a proposed investment into the stocks of Indian companies on behalf of the small and big foreign investors with a common goal of getting returns, bearing various types of risks and enjoying the capital gains also." ***---- (European Union)***

"Foreign institutional investors, in simple words, mean specialised financial institutions which include mutual funds, assets management companies, foreign pension funds, charitable/university/endowment funds and other portfolio managers on whose behalf they make investment in the foreign capital market."

---- (Securities and Exchange Board of India)

The FIIs are basically the members of the investment advisory community that act on the behalf of the owners of foreign funds for a given fee. In other words, they are the portfolio managers which trade on behalf of the owners of the funds. They may take form of any of the mentioned structure like insurance companies, portfolio managers, mutual funds, high net worth individuals, pension funds or corporations (*ISMR, 2011)*. Under section 30 of SEBI Act, 1992, sufficient powers have been conferred upon SEBI for the regulation of the working of FIIs in India. As per these guidelines of the given act, the provisions have clearly stated as to who get eligible for registration as FIIs, its registration process , eligibility conditions of FIIs, fees applicable, investment areas, investment restrictions etc.

Along with this, general responsibilities and obligations, the process and procedure for action against FIIs (in case they do not follow the rules and regulations e.g. default in case of fee payment) has also been mentioned in the same Act.

1.5.1 Entities to be Qualified as Foreign Institutional Investor

The following entities are eligible for registration as foreign institutional investor in the Indian capital market:

i) As Foreign Institutional Investor

- Bank
- Insurance Company/ Reinsurance Company
- Mutual Fund
- Investment Trusts
- Pension Fund
- University Fund

- Charitable Trusts/ Charitable Societies
- Foreign Central Bank or Multilateral Organization
- Foundations (with big social cause)
- Endowments (with big broader social cause)

Further, the following entities which propose to make investment (with broad based fund acting as their principal) are also qualified for their registration as foreign institutions investor :

- Assets Management Company (AMC)
- Institutional Portfolio Bodies
- Investment Advisor and Manager
- Trustees

'Broad Based Fund', in simple words, means a fund which has been incorporated and/or established outside India. The main features of such fund are that there must be at least 20 investors but not even single investor should hold more than 10 % units of the fund with two exemptions:

- If such a fund has a foreign institutional investor or investors, then it will not be mandatory to have 20 investors with itself.
- If such a fund has a foreign institutional investor which is the owner of more than 10 % of units of the funds, it is automatically implied that the foreign institutional investor is itself a broad based fund.

ii) As Sub-Accounts:

Sub-accounts simply means the institutional funds, foreign corporate managers, or portfolios which have been established or incorporated outside India and these are the principal on whose behalf FIIs make investment in the Indian financial market.

Following foreign bodies are eligible to invest through sub-account route.

- Pension Funds
- Investment Trusts

- Institutions or portfolios or funds incorporated and established outside India.
- Foreign Companies: Foreign individual with a net worth of at least US $ 50 million with a valid passport for 5 years, with a good standing from a bank of a foreign country, holds a certificate of good credibility from a bank, and is also the client of the foreign institutional investor for a minimum period of three years.
- Foreign companies which have got their securities registered in the global market, having asset base of not less than US $2 billion and also having been able to maintain an average net profit of at least US $ 50 million during the last three financial years preceding immediately from the date of application.
- Partnership Firms

iii) Domestic Entity:

A domestic asset management company or domestic portfolio manager is also eligible for its registration as foreign institutional investor for managing the funds of sub accounts. Foreign institutional investor can get registered with SEBI either as a regular foreign institutional investor or 100% debt fund foreign institutional investor. These are:

- Regular FIIs: These funds are required to make 70% of their investment in the equity or equity related instruments and the rest i.e. 30 % in debt or debt related instruments.
- FIIs with 100% Debt-fund: These funds are permitted to make investment in debt securities or debt related instruments only.

1.5.2 Registration of FIIs

1.5.2.1 FIIs' Registration

FIIs have to get registered with SEBI compulsorily before they start buying, selling or otherwise start trading in the Indian securities market. After FIIs get registered with SEBI, they get registration certificate. The registration process of FIIs has been shown in Figure 1.3. The whole process of registration is discussed in the follows paragraphs:

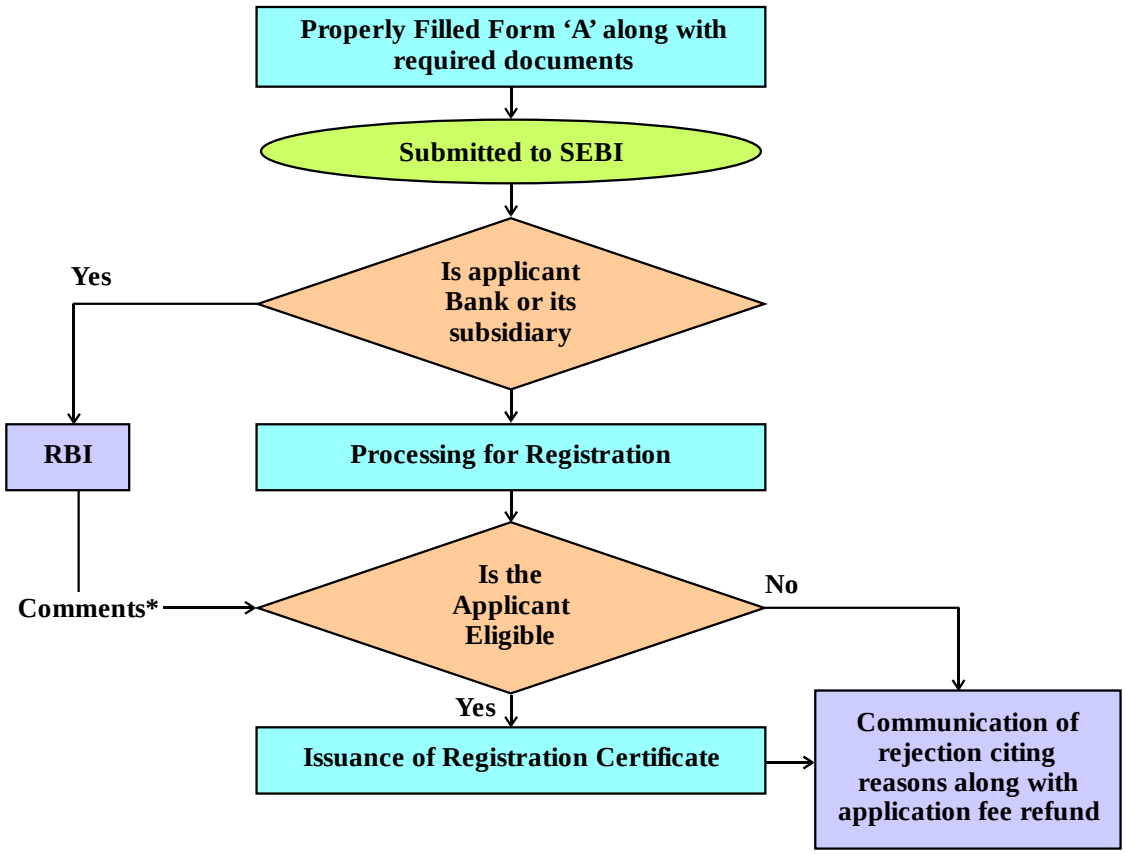
i) Application for Registration

As shared earlier, registration certificate from SEBI is compulsory before starting trading operation in Indian stock market. FIIs are required to submit application for registration with SEBI as per the "Form A" which has been prescribed in SEBI Regulations Act, 1995. The following documents are the other important documents which should also be attached while submitting form A:

a) Memorandum of Association (MOA), Article of Association (AOA) and Article of Incorporation (AOI).

b) Financial statements and annual reports for the last one year which has been audited and authenticated by a competent authority.

Figure 1.3 : Registration Process for FIIs



Source: www.sebi.gov.in

ii) Furnishing of Information, Explanation and Personal Representation

The FIIs are also required to furnish information or clarifications, as the SEBI may consider necessary from time to time. If in any case, SEBI insists for personal appearance of FIIs before board for some clarification, FIIs themselves or their authorized representative will have to appear before the SEBI board. Board after scrutiny of the application and after its satisfaction with the documents and clarification given with application, will issue a registration certificate to foreign institutional investor. The validity of the registration certificate is for 3 years. After the lapse of 3 years, certificate registration has to be renewed. Three months before the expiry of certificate registration, FIIs will apply for renewal of registration on a special application form along with the requisite documents. This registration will remain in force till FIIs continue to satisfy all conditions imposed on them at the time of registration. If applicant happens to be a bank or its subsidiary, then SEBI board will seek the comments and feedback from RBI also.

iii) Conditions for Registration

The FII applicant has to comply with the following conditions for its registration as foreign institutional investor in India as per the provisions of SEBI Regulations Act, 1995:

- FII applicant needs to have professional competency, good track record, and general reputation of fairness, financial soundness, experience and integrity.
- In the home country, the FII applicant should also be regulated by an appropriate regulatory authority.
- The domestic regulator should permit the FII applicant to make investment outside the country where it has been incorporated.
- The FII applicant must get the approval as per the provisions of the FEMA Act, also.
- The FII applicant needs to have a valid contract with the local custodian which would carry on custodial services with respect to all trading securities on its behalf.

- The applicant needs to be a fit and proper person with regard to SEBI Regulations 2004.
- The FII applicant needs to appoint a designated bank to facilitate its transactions in the Indian security market. Designated bank is a branch of any commercial bank operating in India that has been authorized by RBI.
- A bank account denominated in foreign currency; and a special non-resident rupee account will be required to be opened with a specified bank branch by the FII applicant.

iv) Payment of Fees

The institutions wishing to get registered as FIIs need to deposit US $ 5000 with SEBI. And in case of the Institution wishing to invest as sub-account the fee payable is US $ 1000. The registration is valid for 5 years. The institutions registered as FIIs or FIIs as sub-accounts need to redeposit US $5000 and US $1000 three months before the expiry of the registration with SEBI every time when renewal is due. The renewal application should be submitted with SEBI at least 3 months before the lapse of registration; and FIIs are required to deposit the renewal fees within 15 days from the date of intimation by SEBI. Thus, the institutions seeking the status of FIIs in India are required to pay registration fees at the beginning and at the time of each renewal. The registration fees is payable by the applicant through demand draft which should be drawn in favour of "Securities and Exchange Board of India" or through any other accepted mode(s) as specified by SEBI. However, the board has the power to get exempted from fees, an applicant like World Bank or any other institution incorporated outside India which has been provided with certain privileges by the central government.

v) Grant of Certificate

When the registration fee as applicable is deposited by FIIs with SEBI as per the mentioned regulations, the board, if satisfied with regard to all particulars furnished by FIIs, will grant registration certificate. Generally, seven days are taken by SEBI in granting registration to foreign institutional investor. But, in case, incomplete information

is provided by foreign institutional investor applicant, the seven days period is calculated from the day when the complete information as demanded by SEBI reaches its office.

vi) Certificate Validity

The FII registration and the subsequent renewal of the same would be valid for five years from its registration date or the date of renewal, as the case may be. In case, the registration certificate or renewal expires in the face of non-submission of fees or any other reasons as per the SEBI regulations, the concerned foreign institutional investor will automatically be stopped from carrying on any trading activities and will be conditioned to SEBI's guidelines about the trading activities, or the concerned records that happen to be under the control of the concerned foreign institutional investor.

vii) Application for the Renewal of Certificate

It is also important to note that the FIIs' registration is valid for a period of five years. If foreign institutional investor wishes that the same be renewed, again it has to make a renewal request with SEBI for registration at least three months before the expiry of the initial registration. The renewal application will go through the same procedure as the original certificate of registration undergoes. If the board is satisfied with respects to all the requirements, it will issue a renewal registration certificate subject to the payment of applicable fees.

viii) Circumstances for Renewal Certificate to FIIs

The renewal certificate is granted to FIIs with the following conditions to be observed:

- It would follow all the provisions of the applicable regulations.
- In case, the foreign institutional investor has submitted any information and particulars earlier and they have been found misleading, it will immediately inform the board.
- If the information provided by the foreign institutional investor has some change(s) which may have an impact on the grant of renewal certificate, the foreign institutional investor will inform to the board about this change.

- Foreign Institutional Investor, before starting trading in India, will appoint a domestic custodian and will also have a contract with it to possess the securities to be traded into its custody.
- Foreign institutional Investor, before starting trading in India, will also have a contract with a designated bank which will undertake to operate an account denominated in foreign currency or it may also be a special non-resident rupee account.
- Foreign institutional investor, before it starts trading on the behalf of sub-account, needs to get the registration certificate to act on behalf of sub-account from SEBI without any delay.

ix) Circumstances when Certificate is not Granted

If SEBI is not satisfied with the information stated by FII applicant, SEBI may reject the application. However, it needs to give a reasonable opportunity to the FII applicant for being heard. The final rejection decision is intimated to the concerned foreign institutional investor in writing, along with the objections due to which permission has not been granted.

1.5.2.2 Registration of FIIs as Sub-Account

A sub-account simply means a fund or a portfolio which has been incorporated outside the country of its investment like India. The sub-account cannot make investment in India directly. FIIs make investment on the behalf of the sub-accounts. The main path of investment by FIIs on behalf of these sub accounts is mainly through P Notes (Participatory Notes). This sub account fund to get eligible to be used as an investment channel needs to be a 'broad based fund'. The broad based fund simply means the fund which has more than 20 shareholders and not even a single customer should possess more than 10 % of the share of the total fund. However, a foreign individual or a foreign corporate is also eligible to get registered as a sub account, though; it is not required to be broad based. But neither NRIs nor OCBs can get themselves registered as sub-account as per the SEBI regulations.

i) Application for FIIs Registration as Sub-Accounts

Foreign institutional investor needs to apply for the registration of each and every sub-account separately on whose behalf it would invest. Form AA needs to be deposited by foreign institutional investor for each of its sub-account. However, there is no other document to be submitted along with this form in this case. Both the parties namely foreign institutional investor as well as sub-account should sign the application form. The fee for sub-account registration is US $ 1000 which needs to be deposited at the time of submission of application form. Though, there is no specific period described for sub-account registration's validity but validity goes hand in hand with the concerned foreign institutional investor's registration. The sub-account transfer is allowed by SEBI from one foreign institutional investor to another foreign institutional investor. For this purpose, the transferred foreign institutional investor has to give a No Objection Certificate (NOC) and the transferee foreign institutional investor has to submit an undertaking that it has the authority to invest on behalf of the sub-account. Generally, three days are taken by SEBI in affecting this change. However, in case of incomplete information submitted by FII applicant, three days would be counted from the day of submission of complete information by the concerned foreign institutional investor.

ii) Conditions for FIIs' Registration as Sub-Account

For the purpose of registration of foreign institutional investor as sub - account, the board shall consider all relevant matters which are important for such certification. More specifically, the following are the conditions which must be ensured by the board before issuing a certificate to foreign institutional investor as sub-account:

- The foreign institutional investor applicant needs to be a fund or an institution or portfolio which has been incorporated and established outside India and which proposes to invest in India.
- The foreign institutional investor applicant is a proprietary fund or a broad based fund be it a corporate and individual who are fit and proper person as per SEBI regulation 2004. The condition applicable to this is that no NRI or OCB can get themselves registered as sub-account or foreign institutional investor.

- The foreign institutional investor which proposes to get registered as sub-account needs to hold registration certificate as foreign institutional investor.
- The foreign institutional investor which proposes to get registered as sub-account needs to have authority to invest on behalf of sub-account.
- The foreign institutional investor applicant through whom the application for registration of sub-account is moved needs to deposit one undertaking that the sub account fulfils all the criteria as per the provisions of SEBI Act 1995.
- The sub-account has paid the registration fees in accordance with second schedule.

After the SEBI board has received undertaking and the registration fees, it would grant registration certificate to the concerned sub- account. Once a sub-account has been granted registration as per the provisions of SEBI Act 1995, it would be deemed to have got registered as foreign institutional investor with SEBI. However it would be applicable only for the pre decided purpose (s) and benefits being available to FIIsas per the section 115 AD of Income Tax, Act 1961.

1.5.3 Investment Opportunities and Limits

SEBI has issued specific guidelines with regard to the investment by foreign institutional investor and sub-account into the Indian capital market. These guidelines are contained under the chapter third of SEBI (foreign institutional investor) Regulations, 1995. As per the SEBI guidelines, FIIs and sub-accounts can make investment in the following types of securities of the Indian capital market:

i) Various types of scripts and securities existing in Indian capital market (both primary and secondary) like shares, warrants and debentures of companies which are either listed or are to be listed with the recognized Indian stock exchanges.
ii) Commercial papers.
iii) Units of mutual funds floated under various types of schemes.
iv) Securities receipts.
v) Debt instruments and Government Securities.
vi) Derivatives tradable on Indian stock exchanges.

1.5.3.1 Investment Limits for FIIs

The applicable limits are specified for the investment by FIIs into equity, debt related instruments, government securities and derivatives. There are two types of ceilings on FII: statutory and administrative. Currently the ceiling for overall investment is 24 % of the company's paid up capital. The ceiling of 24 % can be raised subject to certain conditions. Public sector banks and insurance sector are capped under the Act at 20 % and 26 % respectively.

(a) Limits on Equity Investments

In SEBI (FII) Regulations Act, 1995 and thereafter, there has been no specification with regard to 'lock in period' for the investment in equity shares by FIIs, but, following are some limits regarding the investment by FIIs in equity shares as specified by the regulations:

i) Each and every foreign institutional investor, if investing singly, or if investing on behalf of sub-account, can invest only up to 10 % of the Company's paid up capital.

ii) While a sub-account, if covered under the category of being the foreign corporate or individual category, can invest only up to 5 % of the company's paid up capital.

iii) The maximum permissible investment limit into the shares of an Indian company by all the FIIs taken together is 24 % of the company's paid up capital.

iv) The maximum limit of 24 % investment by all the FIIs taken jointly can be raised up to 30 %, or 40 % or 49 % or up to FDI limits specified for that sector, however, the company needs to have approval for the same from its shareholders as well as from RBI.

v) In case of public sector banks, the ownership limits is 20 %.

vi) Equity shares obtained only from primary and secondary market will be included in calculating the limits applicable on foreign institutional investor.

Table 1.2 : Sectoral Caps on FDI and FII

Type	Limits
Ban on FDI and FII	Lottery Business, Betting , Gambling, Chit Fund and Nidhi Company
Print Media	Up to 26% Investment by FIIs/PIOs/NRIs
Airport Transport	49 % by FDI and FII together
Asset Construction Companies	74% of paid-up capital when FDI and FII taken together
Banking –Private sector	74 % overall (49 % by Automatic route and up to 25 % by Government route)
In Commodity Exchange	49% investment when FDI and FII taken together and Up to 23 % by FIIs as per Portfolio Investment policy and up to 26 % under the FDI policy.
Credit Information Companies (CICs)	49% investment when FDI & Foreign Institutional Investor taken together
Companies dealing in infrastructure of Securities Markets, e.g. Clearing Corporations, Stock Exchanges and Depositories as per the SEBI Regulations.	49% investment when FDI & Foreign Institutional Investor taken together; and in case of FII, up to 23 % of company's paid up capital and in case of FDI, up to 26 % of the company's paid up capital.
Power Exchanges incorporated as per the Central Electricity Regulatory Commission, 2010	49% - FDI and FII taken together

Source: Consolidated FDI Policy (2013), Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India

However, the acquisition of company shares through direct investment approval rout and investment through ADRs, GDRs and FCCBs will not be included in this.

vii) Monitoring of Investment Position by RBI

RBI has been empowered to keep a check on FIIs in terms of them complying with their investment limits in the Indian stock market even on daily basis. In practice, RBI fixes 2 % limit less than the actual limit applicable for that company. For instance, if the actual limit for a particular company is 30 %, then RBI will fix 28 % as the cut–off limit. And in case the FIIs' buying limit reaches the cut off limit i.e. 28 %, it instructs all the designated bank branches to stop buying additional shares of the company. RBI at the same time also informs the public through its notifications.

(b) Limits on Debt Investments and Government Securities.

The policy of Government of India governs the FII in the debt or debt related securities. As per the policy, normally FIIs (registered as regular foreign institutional investors) have to compulsorily divide their investment between equity and debt instruments in the proportion of 70: 30. But, it is quite possible that a foreign institutional investor is declared 100 % debt- oriented foreign institutional investor. In that situation, it will put all its funds into the debt or debt oriented instruments only. For the sake of FII in debts, they are further classified into two categories:

1. **Government Debt**
2. **Corporate Debt**

Table 1.3 : FII Limits in Government Debt and Corporate Debt

Type of Investment	100% Debt Route FIIs	70:30 Route FIIs and Regular FIIs
Government Debt or Treasury Bills	2.0	0.6
Corporate Debt	1.0	0.5

Source: sebi.gov.in

(c) Derivative Position Limits

To cover the risk in cash markets, SEBI and RBI have allowed FIIs to do trading in derivative markets also. However, foreign institutional investor or sub-accounts can trade in derivative as per the rules specified by SEBI and RBI only.

i) **Investment Limits in Stock based Derivative Contracts by FIIs and Sub Accounts**

The position limits of the foreign institutional investor and sub-account in case of a derivative contract applying to a particular stock (stock future or stock option) are as follows:

- For those stocks on which market-wise position limit (MWPL) of Rs. 500 crore or more applies, the combined limit for future and option contract would be 20% of MWPL or Rs. 300 crore, whichever happens to be lower. Moreover, within this limit, future position can go to a maximum of 10% of MWPL or Rs. 150 crore, whichever happens to be lower.

- For those stocks on which market-wise position limit (MWPL) of less than Rs. 500 crore applies, the combined limit for future and option contract would be 20% of MWPL. Moreover within this limit, stock future position can go to a maximum of 20% of MWPL or Rs. 50 crore whichever happens to be lower.

In addition to that, the gross position applying on all derivative contracts of a foreign institutional investor's sub account (applying on a specified stock) must not exceed the following's higher up:

- Up to 1% of the market capitalization of free float (when counted as number of shares)

Or

- 5% of the derivative contracts' open interest applying on a particular specified stock (when counted as number of contracts).

The above mentioned limits would be applicable on all the derivative contracts entered into about a specified stock tradable at the Indian stock exchange.

ii) **FIIs Position Limits in Index Derivative Contracts**

Every foreign institutional investor will have the following position:

- Position limit of a foreign institutional investor in case of all index option contracts (applying on a specified index) will be Rs. 500 crore or 15 % of the market's total open interest in index options, whichever happens to be higher (per stock exchange). Moreover, this will be applicable for all open positions taken in option contracts on a specified index.
- Position limit of a foreign institutional investor in case of all future contracts (applying on a specified index) will be Rs. 500 crore or 15 % of the market's total open interest in index future, whichever happens to be higher (per stock exchange). Moreover, this will be applicable for all open positions taken in future contracts on a specified index.

Additionally, FIIs can also make themselves exposed in equity index derivatives with following conditions to be met:

- All short positions taken in index derivatives (be short calls or short futures) must not exceed the holding of stocks by FIIs in terms of its notional value.
- All long positions taken in index derivatives (be it long calls or long futures) must not exceed the holding of cash, government securities, T-Bills and similar instruments by FIIs in terms of its notional value.

➢ There needs to be full disclosure about the person or persons who together own 15% or more of all derivative contracts' open interest on a specified index.

iii) **Position Limits for Interest Rate Derivative Contracts by FIIs**

➢ **At Foreign Institutional Investor Level:** The limit for the gross open position's notional value of a foreign institutional investor in the interest rate derivative contracts (tradable on stock exchange) will be as follows:

  - US $ 100 million

- Moreover, the FIIs can also get exposure in the interest rate derivative contracts (tradable on stock exchange) equivalent to their cash market exposure's book value to be traded in Government securities.

- **At Sub-account level:** For a Sub-account, the position limits in interest rate derivative contracts (being traded in near month exchange) will be higher of the following:

  - 15 % of open interest being into the interest rate derivative contracts (being traded in stock exchange)

  or

  - Rs. 100 crore.

1.5.3.2 Other Important Clauses Related to FIIs and Sub-Accounts

There are some other important clauses related to FIIs and sub-accounts which are discussed below:

i) It is compulsory for FIIs for taking and giving the deliveries of securities of business transactions, that is, they are not permitted to get involved in short selling of securities. This condition is not applicable in derivative trades carried on by them on a recognized stock exchange.

ii) Cary forward of transactions is not allowed on the stock exchange.

iii) All kinds of business transactions in securities will be undertaken only through the SEBI certified share brokers. However, FIIs may sell the securities without the interference of certified broker in the case of buyback offer by the company as per the guidelines of the SEBI (Buy-back of Securities) Regulations Act, 1998. Similarly, this condition is not applicable where FIIs are selling the securities on the basis of 'a letter of offer' from an acquirer as per the guidelines of the SEBI (Substantial Acquisition of Shares and Takeovers) Regulations Act, 1997. Moreover, in case of government securities, commercial papers and treasury bills,

FIIs will purchase and sell the securities according to the procedure specified by RBI for such type of securities.

iv) Normally, all the securities (tradable on the Indian stock exchanges) are registered in the name of foreign institutional investor or in the name of sub-account in case of foreign institutional investor investing on behalf of sub-account. However, in that case foreign institutional investor has to disclose the name of sub-account on whose behalf foreign institutional investor proposes to make investment in the Indian capital market.

v) All the transactions will be settled through the dematerialisation account by the last working day of the financial year, in case, foreign institutional investor or sub-account are having investment worth Rs 10 crore or more.

vi) Any change in the name of foreign institutional investor or sub-account should be immediately informed to SEBI along with the reasons for such a change in the name. An undertaking should also be submitted declaring that only name has been changed and no other change has taken place with regard to control or beneficiary or ownership. Moreover, the application should be accompanied with the certificate of approval from home regulator mentioning its new name. Original registration certificate should also be submitted for necessary amendments.

vii) The foreign institutional investor/sub-account can issue, hold or deal in off-shore derivative instruments like Equity Linked Notes, P-Notes against the specified securities which are either listed or will be listed on the Indian stock exchanges (in favour of those companies/corporations which are under the regulation of the specific regulating body of the country, with specific condition of “Know Your Client” requirement).

viii) Foreign institutional investor can change its domestic custodian. However, the request for the same by foreign institutional investor must be supported by a ‘No Objection Certificate’ from the domestic custodian to be submitted with SEBI for the above stated objective.

1.5.4 Obligations and Responsibilities of FIIs

1.5.4.1 Opening Foreign Currency Account or Non-Resident Rupee Account

For sale and purchase of the securities (officially accepted and allowed in the Indian capital market and money market), there must be a 'Foreign Currency Account or Non-Resident Rupee Account' to be opened by each and every foreign institutional investor proposing to make investment in India. It also needs to have one branch of an authorized exchange dealer. All trading of securities must be done through this account only. All cash inflows and cash outflows of shares and debentures traded need to be deposited in this account. All the purchases of permitted securities need to be made through this account. Foreign institutional investor is permitted to send sale proceeds abroad only after the payment of applicable taxes at that time. It is also important to note that the transfer of funds from 'Foreign Currency Account' to 'Non-Resident Rupee Account' and vice-versa is permitted. However, the applicable condition for the same is that the funds should belong to the same foreign institutional investor.

Earlier in the beginning, FIIs were allowed to hedge their foreign exchange exposure position only for their investments in debt instruments. But from 1998 onwards, forward cover of FIIs' investment equity has also been allowed with some conditions to be fulfilled by FIIs. So now FIIs can obtain a forward exchange cover from authorized dealers as per the specific guidelines framed in this respect.

1.5.4.2 Appointment of Domestic Custodian

Each and every foreign institutional investor has to get the services of domestic custodian. This domestic custodian would keep the custody of all types of securities traded by foreign institutional investor in the Indian capital markets. The prime responsibility of custodian is to monitor the investments of foreign institutional investor in Indian financial markets and report the transactions to SEBI on daily basis. From time to time, the domestic custodian is required to provide the desired information to SEBI within the stipulated time period. Foreign institutional investor has to ensure that the local custodian has been accomplishing its duties accordingly. With the prior approval of SEBI, foreign institutional investor may also appoint more than one local custodian. As

domestic custodian plays a significant role in the functioning of foreign institutional investor, SEBI would ensure that the domestic custodian looks after the interests of foreign institutional investor(s). For this purpose, domestic custodian will be required to undertake the following actions on its part :

- Keeping a vigilant eye on the foreign institutional investor investment in India.
- Feedback on the daily trading by foreign institutional investor(s) to SEBI
- Up keep of official records of all trading activities by foreign institutional investor(s) for at least last five years.
- Providing all the necessary and desired information about foreign institutional investor trading activities which may be called for by the board from foreign institutional investor from time to time.

1.5.4.3 Appointing a Designated Bank

One branch of a bank is appointed by the foreign institutional investor out of the list approved by RBI as FII designated bank. In that bank branch, foreign currency denominated special Non-Resident account is opened by foreign institutional investor for facilitating its trading activities in the Indian capital market.

1.5.4.4 Investment Advice at the Public forum

Foreign institutional investor or its employee is not allowed to get involved in providing specialised counselling and advice about the securities being traded in the Indian stock market at the public forum. However, in case, any of its member or employee is involved into such activities, and then he /she has to disclose the interest therein.

1.5.4.5 Maintaining Books of Accounts and Records

Every foreign institutional investor is required to maintain the following books of accounts and records:

- Correct record about the trading activities of its investment.
- Bank statement for all types of its accounts;

- Records of all cash inflows to India for investing purpose, the capital gains realised and the outflows of money out of the country.
- All information about the trading activities from its domestic custodian.
- Contract notes about the trading activities like purchase and sale of securities.

The foreign institutional investor will provide all the information to SEBI board about the place where these records have been prepared and maintained.

1.5.4.6 Preservation of Books of Accounts and Records

All FIIs are required to maintain their books of account and other records at least for a minimum period of 5 years subject to any other laws (if any and being in force).

1.5.4.7 Appointing a Compliance Officer

Every foreign institutional investor is required to appoint one compliance officer who would ensure that all the rules, regulation or instructions by SEBI, RBI and central government are being followed. This compliance officer may report to SEBI board independently also whenever he feels that there are some instances of non-compliance.

1.5.4.8 Information to the Board

Each and every foreign institutional investor is required to provide and submit all the desired information/documents/records to SEBI board and RBI as and when needed. Moreover, foreign institutional investor is also required to disclose the information about its sub-account(s), equity linked notes and P-Notes as and when required.

1.5.5 Cancellation of Registration

As per the rules, cancellation of registration of foreign institutional investor and sub-account is allowed by SEBI. For this purpose, a written request containing registration number is required to be submitted to SEBI. Before cancellation of the registration, concerned foreign institutional investor has to ensure that it itself and sub-account does not have any cash and holding of securities.

In case, the application for the renewal of registration is not deposited well on time by foreign institutional investor, then its exiting registration formalities come to an end or get cancelled. Moreover, foreign institutional investor or sub-account is not permitted to make investment or trade in Indian capital market through any unmentioned and non approved channel. In addition to this, in case, the foreign institutional investor or sub-account do not want to renew their application but it has some residual assets left out, it can apply for the disinvestment process to be followed as per the guidelines specified by SEBI in this regard.

1.6 ADVANTAGES AND DISADVANTAGES OF FII

FIIs have many natural advantages in the processing of information. It is expected that as there has been rapid progress in disclosure norms, legal framework is providing more supporting environment, accounting standards being equalised with the global standards, shareholders rights being protected more and corporate governance practices being stressed upon, FII is going to accelerate in India. Since India has opened its stock market, it has enjoyed very good flows of foreign investment in general and FII in particular.

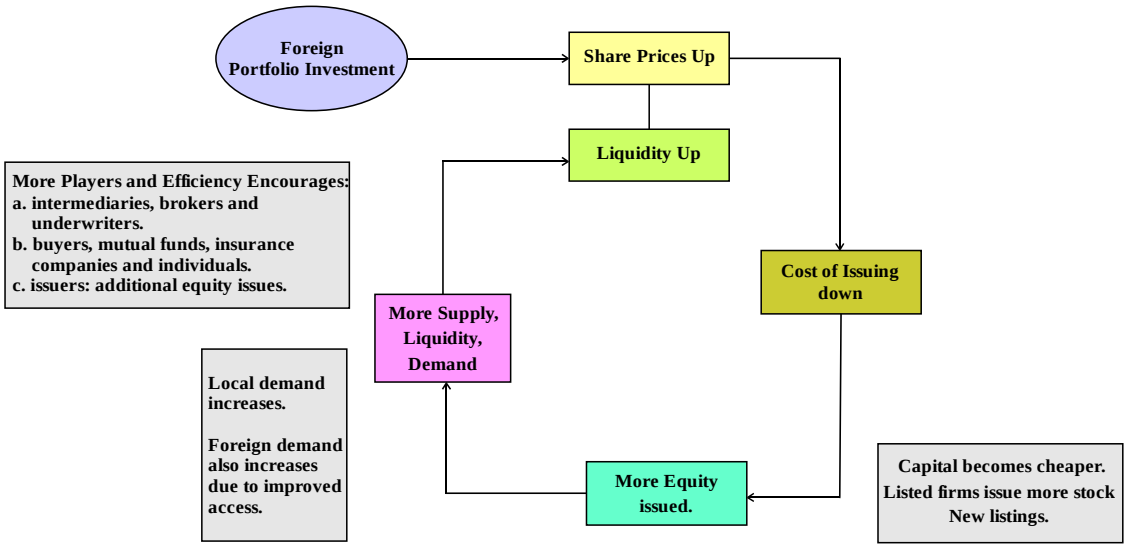
1.6.1 Advantages

Some of the major advantages of having FII are discussed as below:

i) Flows of Equity Capital

It is a well-known fact that the FIIs have a great preference for equity investment than the debt investment. This has probably been one of the underlying reasons that the opening of the Indian capital market (equity market in particular) has come up to their expectations. And the subsequent results have been that they have brought in huge flows of capital in the Indian stock market. Moreover, the tendency of FIIs investing into equity market has also reduced the return-differential and has helped in improving the capital structure of the companies. More importantly, the FII flows have also gone a long way in bridging the gap between saving and investment which the Indian economy could not do due to the limited capacity of the Indian public to save and invest. And this phenomenon has, in turn, led to the capital formation process *(Pathak, 2008).* The role of foreign capital has been demonstrated by the Figure 1.4.

Figure 1.4 : Role of Foreign Funds in Domestic Secondary and Primary Market



Source: **Guruswamy. S, Global Financial Institutions, Vijay Nicole Imprints Private Limited, 2009.**

ii) Management of Uncertainty and Controlling of Risk

FIIs do not bring capital flows only; they also bring in financial innovation along with various types of hedging instruments. As FIIs always try to hedge their risks and enhance their returns, these tendencies on their part lead to the growth of zero coupon bonds and index futures market. Moreover, FIIs being financial experts, market analysts and professional bodies enhance the degree of competition in the capital market. It also leads to a situation when the prevailing market prices of securities are aligned to the economic fundamentals *(Kevin2010).*

iii) Improved Capital Markets

FIIs also play an effective and important role in improving the Indian capital market. Firstly, they have consolidated the Indian financial market by increasing the degree of competition. This way, the realistic market forces have tended to prevail in the market; and market prices have become more representative of the demand and supply forces; and thereby have consolidated financial market further. Secondly, by supplying

long term capital in the Indian economy for financing various types of projects, FIIs have helped in strengthening the industrialisation process further. In nut shell, it has also played an important in the development of the Indian economy as a whole *(Guruswamy, 2009).*

iv) Market Stability

FIIs are known to be good carrier of full information about the market they are investing in. Hence, their investment decisions are considered to be well guided. This way, their trading activities help in aligning the Indian stock market prices to its basic economic fundamentals. Secondly, as FIIs are always risk hedger, they tend to enter into various types of hedging contracts like future contract. Thirdly, their reasonably good presence in the Indian capital market also shows that they value the strength of the Indian economy. All these developments help in reducing volatility and enhancing the market stability (*Kevin, 2010).*

v) Improvement in Corporate Governance Practices

In Indian economy, lack of good corporate governance practices has been a key feature of the financial markets. However, over the years, in order to make their presence felt across the globe and raise funds from the foreign markets, many corporate houses have been approaching foreign markets on the one hand. And on the other hand, to make the Indian economy integrated with the world economy, foreign investment has been permitted and a congenial environment has been created for the same. Both these macro level developments have led to the philosophy of more accentuated 'corporate governance practices by the Indian companies. FIIs' presence has been ensuring that there is proper spread of information. All these developments have helped in bringing in better corporate governance practices along with the growth of the Indian capital market *(Pathak, 2008).*

vi) Overcoming Limitations of Small Shareholding

It is worth to note that the problem arising due to the small shareholding pattern has also been addressed by the presence of FIIs in the Indian stock market. It has been

observed over a long time that small shareholders do not have adequate say in the decision making process during the AGM and they are also taken for granted for many strategic issues like announcement of dividend. But, with the presence and participation of foreign institutional investor, not only decisions are taken with more consensuses; nobody can have free ride upon the rights of the small shareholders. However, at the same time, it needs to be taken care that there is also some hidden danger in this positive development, because as the FIIs' shareholding goes beyond 5 % in the capital structure, it may also lead to exploitation of the small shareholders. This undesirable phenomena needs to be well taken care by SEBI (*Guruswamy, 2009).*

vii) Professional Management

As the FIIs are professionally sound financial analysts, they participate in the affairs of the company very constructively. For example, they ensure adoption of better corporate governance practices by companies, managing the company's affairs on sound principles, compliance to various acts, adoption of rules and regulations and so on. This way, they help in managing the company with more professional approach. FIIs also ensure more role for the performance oriented persons and removal of underperforming employees. In nutshell, it has been the experience that FIIs have not only increased payout ratios but have also increased the productivity of the company *(Guruswamy, 2009).*

1.6.2 Disadvantages

In spite of many advantages, there are also many disadvantages of FII flows. Some of the major disadvantages of FII flows are discussed below:

i) Management Control

It has been found that the ultimate aim of the FIIs has been to get maximum returns on their investment in the Indian stock market along with controlling the affairs of their investing company. FIIs through their huge investment get to have the lasting interest in the affairs of the company. This shows that there happens a presence of long term relationship between the company and themselves. This relationship, on the one

hand gives opportunity to FIIs to start controlling the affairs of the company and on the other hand, it also provides leveraged favour to FIIs. Moreover, one another effect of such development is that when FIIs misuse this power, it leads to uncalled and undesirable enhanced control by FIIs upon the small shareholders and sometimes unnecessary decisive say in the crucial decisions of the company. The ultimate repercussion of these developments leads to hampering in the healthy existence and growth of the company *(Guruswamy, 2009).*

ii) Market Destabilization

As noted, one of the typical features of the FII flows is that they are "Hot Money" due to their herding behaviour and instantaneous withdrawal practices. Under their natural choice, FIIs park their money in any of the country with high potential for good returns. If the calculations done by them happen to be correct, they continue to invest in the same country thinking that there would be more opportunities to earn. But the moment, they feel or they get to know about any negatives of the same country, they immediately withdraw their money and put the same in a different country with better future prospects leaving the earlier country totally unprepared for such a situation *(Shajan, 2006).*

iii) Danger of Hedge Funds

One of another major source of concern is the hedging activities undertaken by FIIs. By hedge funds, FIIs take short position through aggressive borrowings. Thus, these funds also tend to increase the volatility of the stock market (*Shajan, 2006).*

1.7 RESEARCH METHODOLOGY

1.7.1 Need for Study

Since the opening of Indian economy in the post period of 1990s, there have been large flows of FII in India. Their number and investment have grown many times in the span of last 20 years. These FII flows have been affecting Indian economy in different respects like enhancement of capital formation process, more FERs, contribution towards market turnover and capitalization, volatility in the stock market and so on. Due to these

reasons, research in the field of FII flows in the Indian Economy has received reasonably good amount of attention for academicians, policy makers and the market regulator (SEBI). But, it has been observed that though there has been a good research work undertaken on this area; the same has not been very comprehensive. Moreover, most of the researches have included stock return as the deciding variable for studying the determinants of FII flows in India. Since the investment in stock market is based on market sentiments, thus FII flows are affected by almost everything which has a direct and indirect impact on the psychology of the investors. This means there have been many factors which have been affecting FII flows in India. However, the critical task has been to zero in on the critical market determinants which affect the flows of FII in India. In addition, majority of the research works have offered mixed results. There have been some studies whose findings have not been inconsonance with each other though pertaining to the same data base. For example, *Gordon & Gupta (2003)* whose findings supported the view that there was causation from FII to return in BSE were found to be contradictory to the findings of *Rai and Bhanumurthy (2003)* who concluded that there was no causation from FII to return in BSE.

Moreover, it has been observed that there is a void in the field of research on FII flows in India as far as empirical investigations are concerned. After going through the review of literature, it is found that study and analysis on FII flows, their magnitude, their trends, their determinants and the impact of FII flows on the volatility of the Indian stock market need more intensive investigation. Partly, this could fill part of the existing knowledge gap. Hence the study undertaken is important for the following reasons:

i) The main reason for investment in the stock market by an investor is to earn good return. Good returns depend upon the price movement. Price movement is affected by volatility which is caused by many factors including FII flows. Therefore, FIIs being major players in the Indian stock market are of utmost importance to be studied.

ii) In 2008, when there was a big global economic subprime crisis , the most haunting question which chased everybody mind was the role of FIIs in affecting price movement and thereby volatility of the stock market.

iii) As FII flows are not normally long term capital investment and they act like hot money, it is very important for the government to study FII strategy; and to ensure objective and safe investment environment in the country.

iv) For the protection of investors, it is important for the market regulator (SEBI) to regulate the FII flows and frame out its strategy accordingly.

v) As majority of FIIs bring in huge money which may supplement the capital formation and fill up the saving gaps. But at the time an immediate withdrawal by FIIs may also lead to big crash and in turn collapse the stock market. So it is very important on the part of market regulator to observe the trends of FII flows and take action if the need be.

1.7.2 Research Design

The present research study is both descriptive as well as empirical research aimed at describing and exploring the relationship between the FII flows and various economic fundamental factors like BSE Sensex, ER, FERs and Inflation.

1.7.3 Objectives of the Study

The present research work has been undertaken with the below mentioned objectives to be achieved:

i) To study the magnitude and trends of FII flows in India since 2000 and their forecasting.
ii) To find out the factors affecting FII flows in India.
iii) To examine the relationship between FII and other economic factors like Stock Market, FERs, ER and Inflation.
iv) To study the impact of FII flows on the volatility of the stock market in India.

1.7.4 Hypothesis

In the light of the above mentioned objectives of the study, the following hypotheses have been framed and tested:

i) Stock Market Return, ER, FERs and Inflation rate do not affect the flows of FII in India.

ii) FII flows do not have an impact on the stock market volatility in India.

1.7.5 Sources of Secondary Data Collection

The secondary data required for this research work have been collected from various sources as mentioned below:

i) Annual Reports of Securities and Exchange Board of India (SEBI)

ii) Handbook of Statistics on the Indian Securities Market, Securities and Exchange Board of India (SEBI)

iii) Bulletins, Securities and Exchange Board of India (SEBI)

iv) Annual Reports, Reserve Bank of India (RBI)

v) Handbook of Statistics on the Indian Economy, Reserve Bank of India (RBI)

vi) Bulletins, Reserve Bank of India (RBI)

vii) Various Issues of Indian Security Market Review (ISMR) by National Stock Exchange (NSE)

viii) Annual reports of BSE, NSE.

ix) Annual Reports, Ministry of Finance, Government of India (GOI)

x) Publications and Reports of Central Statistical Organisation (CSO)

xi) Data from Newswire and Capital line.

1.7.6 Period of the Study

The study has been conducted for the period starting from 2000-01 to 2011-12.

1.7.7 Selection of Variables

The present study includes various economic variables namely FII, BSE Sensex, ER, FERs and Inflation. The logic of including these variables into this study is based upon the trading behaviour of FIIs. Objectively speaking, the trading behaviour of the FIIs is classifiable into two types:

i) Positive Feedback Trades or Momentum Trading

As per this approach, FIIs prefer to observe the returns being generated by the movements of stock market index and identify who are the winners and the losers coming out of this development. Accordingly, they take a decision in buying the recent winners and selling the recent losers. Thus, they prefer to have a continuous eye on the performance of major stock indices like BSE. Hence, BSE Sensex is a very important variable which has been included in this study to analyse the behaviour of FIIs with respect to its movements.

ii) Herding Strategy

As per this approach, FIIs prefer to observe the behaviour of other FIIs and behave in the same manner as the other FIIs do. It has been empirically observed that many FIIs while investing in India observe the performance of various economic indicators. Therefore, many economic indicators like ER, FERs and Inflation are some of the important variables which reflect the overall health of the economy. Even during post 1990s era, it was the FERs which became the pivotal of economic problems of India. Thus, all these variables amongst many others play a crucial role in the decision making process of FIIs. Hence, they have been included in the study.

All other variables have been assumed to be constant in the present study.

1.7.8 Techniques of Data Presentation, Analysis and Interpretation

For the present study, various statistical tools have been employed. The secondary data collected from various sources have been properly classified, edited, tabulated and analysed. For the purpose of graphical presentation and statistical analysis, various statistical tools like Histogram, Frequency Curve, Simple Percentage Analysis, t Test and Correlation Analysis with the help of Microsoft excel have been used. And for the advanced statistical testing and analysis, various econometric tools like Granger Causality, VAR, Variance Decomposition, Impulse Response Function, ARCH, GARCH and ARIMA have been used with the help of Eviews. A comprehensive description of the statistical tools used in this study is as follows:

i) Histogram

This is one of the popular graphical methods of presenting a frequency distribution. While constructing the histogram, the variables are always taken on the x-axis and the frequencies are taken on the Y-axis. This method has been used in the present research work to present various types of frequency distributions like FIIs registered with SEBI in India.

ii) Frequency Curve

A smoothed frequency curve can also be drawn through various points of the polygon. The same has been used in this research work for presenting various types of time series data like county wise classification of FIIs, composition of foreign portfolio investment in India, trends of FII in India, shareholding patterns of FII in companies listed on NSE, FII in equity and debt market, MCR, TOR and VTR for BSE and NSE, total FII as percentage of total market turnover, FII as percentage of total market capitalization.

iii) Simple Percentage Analysis

Mathematically, percentage is a mode of expressing a figure as fraction of 100. Simple percentage analysis is one of the most important and widely used statistical tools in the analysis and interpretation of the time series data. In the present research work, this method has been used for analysing various types of data through a single figure and comparison of various percentages also. The following formula has been used for calculating percentage.

$$\textbf{Percentage} = \frac{\textbf{Single Unit in a Whole of N Units}}{\textbf{N}} \times \textbf{100}$$

iv) t-Test

T test is based on the t distribution and is considered an appropriate test for judging the significance of a sample mean or for judging the significance of difference between the means of two samples in case of sample(s) when population variance is unknown. In

the present research study, t test has been applied to know the significance of FII in the total FPI, significance of FII in the Indian equity and debt market, significance of FIIs' assets as compared to the total assets under various custodians, significance of FII in total market turnover, significance of FII in total market capitalization and significance of FII in Indian GDP.

v) Correlation Analysis

The correlation is one of another widely used, most common and handy statistical tools to indicate the strength and direction of a linear relationship between two random variables. A correlation is single number having value between +1 and -1 which explains the degree of relationship between the two variables. In the present study, the correlation has been calculated with the help of e-view software by using the differenced time series data to avoid the problem of non-stationarity. For instance, the following data have been used for relationship analysis:

DFII = Differenced FII

DSensex = Differenced Sensex

DER = Differenced Exchange Rate

DFERs = Differenced Foreign Exchange Reserves

DWPI = Differenced Whole Sale Price Index (used for Inflation)

vi) Granger Causality Test

It is important to note that correlation analysis is not sufficient to have an in-depth study of relationship between the variables. There exists a more relevant concept called the concept of causality. This test is conducted to know whether the behaviour of one variable is caused by another given variable or vice versa named as unidirectional causality or behaviour of both the variables is caused by each other , this phenomena called the concept of 'bi-directional causality' or there may exist a situation when both the variables do not cause each other , this situation is called a no causality situation between them. Framed as one of the major objectives of this study, in order to know the

causality between the given variables under consideration, granger causality test has been applied for this purpose. Under the application of this econometric model, various steps discussed below have been followed:

- **Hypotheses to be Tested using Granger Causality:**

The following hypotheses have been framed to be tested by applying granger causality econometric model :

Null Hypothesis (H_0): FII does not granger cause Sensex, FERs, ER and Inflation.

Alternative Hypothesis (H_a): FII does granger cause Sensex, FERs, ER and Inflation.

Before this test is applied, the following conditions need to be fulfilled:

i) All the series to be used for the analysis need to be checked for their stationarity and in case of non-stationary series, the same need to be been converted into stationary by differencing.

ii) The lag length selection has been made as per the relevant criteria.

- **Testing of Stationarity or unit root test – Augmented Dicker Fuller (ADF) Test**

As there are five time series in the present study, namely, FII, BSE Sensex, FERs, ER and Inflation, all these have been tested for their stationarity by using the following form of ADF regression equation:

$$Y_t = \beta_1 + \beta_{2t} + \delta Y_{t-1} + \alpha_i \sum_{i=1}^{m} \Delta_{t-1} + \epsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$

Where ϵ_t is a white noise error term and Y_{t-1} additional lagged terms are with an idea to ensure that the error terms are not correlated. β_1, β_2, δ, α are the coefficients where δ is the first difference operator which is equal to (p-1), estimated to test the null hypothesis that $\delta = 0$. If δ is equal to 0, it means that there is a unit root which implies non-stationarity in the time series under consideration.

- **Hypothesis for Checking the Stationarity of time series**

Null Hypothesis (H_o): FII /FERs/ER/Inflation/Sensex is a non stationary time series or it has unit root.

Alternative Hypothesis (H_a): FII/FERs/ER/Inflation/Sensex is a stationary time series or it has no unit root.

- **Conversion of Non-stationary time series into stationary series**

The time series of the given variables (FII, BSE Sensex, FERs, ER and Inflation) if found non-stationary have been converted into stationary time series by differencing them.

- **Testing for Selection of Proper Lag Length through AIC**

The second requirement for the granger causality test is to find out the appropriate lag length for each pair of variables. For this purpose, Akaike information criterion (AIC) has been used for choosing optimal lag order selection.

In general case, the AIC is

$$AIC = 2k-2l$$

where k is the number of parameters in the statistical model, L is the maximized value of the likelihood function for the estimated model.

- **Co-integration Analysis for choosing the Vector Auto Regression (VAR) Model**

In the present research study, Co integration (long term association) amongst the variables under study has been checked by using the Johansenn Co integration model. Restricted VAR model has been used in the granger causality model as the four variables namely FII, FERs, ER and Inflation have been found to have long term association.

- **Relationship Study with Granger Causality Test**

Granger causality test has been applied to analyse whether there is any casual relationship between the variables under study. As it is a known fact that the granger

casualty is a bi-variate analysis, hence, we have developed two equations for each and every variable one by one:

FII and Sensex pair of regression equations are:

$$FII_t = \sum_{i=1}^{n} \alpha_i Sensex_{t-1} + \sum_{i=1}^{n} \beta_i FII_{t-1+} \mu_{1t} \text{ .....}$$

$$Sensex_t = \sum_{i=1}^{n} \lambda_i FII_{t-1} + \sum_{i=1}^{n} \delta_i Sensex_{t-1+} u_{2t} \text{ .....}$$

FII and Foreign Exchange Reserves (FERs) pair of regression equations are:

$$FII_t = \sum_{i=1}^{n} \alpha_i FER_{t-1} + \sum_{i=1}^{n} \beta_i FII_{t-1+} \mu_{1t} \text{ .....}$$

$$FER_t = \sum_{i=1}^{n} \lambda_i FII_{t-1} + \sum_{i=1}^{n} \delta_i FER_{t-1+} u_{2t} \text{ .....}$$

FII and Exchange Rate (ER) pair of regression equations are:

$$FII_t = \sum_{i=1}^{n} \alpha_i ER_{t-1} + \sum_{i=1}^{n} \beta_i FII_{t-1+} \mu_{1t} \text{ .....}$$

$$ER_t = \sum_{i=1}^{n} \lambda_i FII_{t-1} + \sum_{i=1}^{n} \delta_I ER_{t-1+} u_{2t} \text{ .....}$$

FII and Inflation pair of regression equations are :

$$FII_t = \sum_{i=1}^{n} \alpha_i Inflation_{t-1} + \sum_{i=1}^{n} \beta_i FII_{t-1+} \mu_{1t} \text{ .....}$$

$$Inflation_t = \sum_{i=1}^{n} \lambda_{i\,i} FII_{t-1} + \sum_{i=1}^{n} \delta_i Inflation_{t-1+} u_{2t} \text{ .....}$$

In the above equations FII, Sensex, FERs, ER and Inflation are the variables to be tested. α_i, $\beta_{i,}$ $\lambda_{i,}$ δ_i are the coefficients which explain the relation of dependent variable with the lag terms of independent variable and the lag terms of dependent variable itself.

t is the period and I is the number of lags.

u_{1t} and u_{2t} are the disturbances or white noise errors or residuals which are assumed to be mutually uncorrelated.

vii) Vector Auto regression (VAR)

This model is basically used to find the relationship between various economic variables by taking into account the feedback by other variables. Estimation based on

VAR includes endogenous (or also named dependent) as well as exogenous (or also named independent) variables in the equation making. It is an important tool for multivariate analysis. In this model, the value of a given variable (endogenous) is considered as the linear function of its own lagged value or its past value and also the function depending upon all other variables (exogenous) variables considered in this model. All the variables are considered as endogenous (dependent) variables one by one and its own past or lagged values and other variables are considered as exogenous (independent) variables. Two very useful methods of examining the properties of VAR are Variance Decomposition and Impulse Response.

viii) Variance Decomposition

In the present study, variance decomposition method has been applied to examine the dynamics of VAR system. Under this econometric model, an effort has been made to know as to how much movement in the value of a given variable (dependent one) is due to its own shock or its lagged value (s); and how much movement is attributable to other variables (independent one). It is stated that whenever there is a shock in the value of the ith variable (dependent), it would not only affect that variable directly, it would also get travelled to other variables through the dynamic system of VAR.

In addition to this, it is also worth to notice that the order of selecting the variables is an important issue in variance decomposition. In the present study, Cholesky Decomposition model has been employed for deciding the order of the variables.

The equations for variance decomposition are as follows:

$$\Delta X_t = \alpha_1 + {}^{k}\sum_{i=1} (\alpha_{11}(t)\Delta X_{t-j}) + {}^{k}\sum_{f=1} \alpha_{12}(F)\, \Delta Y_{t-f} + \epsilon_{xt}$$

$$\Delta Y_t = \alpha_2 + {}^{k}\sum_{i=1} (\alpha_{21}(t)\Delta X_{t-j}) + {}^{k}\sum_{f=1} \alpha_{22}(F)\, \Delta Y_{t-f} + \epsilon_{yt}$$

where ϵ's are stochastic error term; called impulse response or innovation or shock in the language of VAR.

ix) Impulse Response Function (IRF)

In order to have an in-depth understanding of the behaviour of one variable due to the changes in the value of other variables or due to the changes in its own value, IRF has

been used in the present study. In simple words, Impulse Response is a graphical statistical tool through which the change (s) brought in one variable due to the shock or the impulse in the same variable; or due to shock or the impulse in the other variables over a short period of time normally one year is shown. Though, there are various techniques which can be used to know what type of change is desired to be made in the system, however, normally, a positive change of one standard deviation is made in the system. When this positive change of one standard deviation is introduced in the system, it gets propagated or spread into the entire system and also changes the value of the dependent (endogenous) variables for each and every period of time. When both the econometric methods namely variance decomposition and impulse response function are used together , they are collectively called 'Innovation Accounting' as termed by Enders in 1995. In the present study, Choleski Impulse Response model has been used for the generation of impulse response.

x) Autoregressive Conditional Heteroscedasticity (ARCH) and Generalised Auto regressive Conditional Heteroscedasticity (GARCH)

FIIs are motivated not only by the domestic and global factors but also by the short run expectations normally called market sentiments. These market sentiments give birth to the element of speculation and high mobility. Volatility is, thus, the uncalled and naturally present phenomena in the stock market which enhances the degree of risk for the investment made by the investors. As stock market volatility as a measure of risk plays an important role in the financial decision making for many stakeholders, the data from 2000 to 2012 of net FII along with BSE Sensex have been used to study the phenomena of volatility in the Indian stock market.

Before ARCH and GARCH models are applied, the cluster Volatility present in the residual of variance has been checked along with model selection.

- **Checking of Cluster Volatility in Residuals or Errors terms**

This has been investigated by analysing the existence of cluster volatility in the residuals or errors terms generated with the help of Eviews application on Sensex monthly time series data from 2000 to 2012.

- **Model Selection**

Lag length has been selected by using Normal Gaussaian Distribution Model on the basis of various information criteria like Akaike Information Criteria AIC, Schwarz Information Criteria or Bayesian Information Criterion (SIC) and Hannan-Quinn Information Criterion (HQ).

To specify the ARCH and GARCH model, two equations have been specified. One is mean equation and the second is variance equation.

Mean Equation is as follows:

Sensex = C1 + C2*FII + e …… (1.1)

Here Sensex = sensitivity index of BSE, C1, C2 = constant, FII = FII, e = Residual.

Second equation (developed from mean equation) is the Variance Equation which is as follows:

Residual derived from mean equation (1.1) is used in making variance equation.

$H_1 = C3 + C4*e^2_{t-1+}C5H_{t-1} + C6*FII$ ……. (1.2)

H_1 = Variance of the residual (error term) derived from equation (1.1). It is also known as current period's variance or volatility of stock market (BSE Sensex).

C3=Constant

C4, C5……C6 = Constant/Coefficient

e^2_{t-1} or RESID (-1)^2 = Previous period's squared residual derived from equation (1.1). It is also known as previous period's stock market (Sensex) information about volatility. It is **ARCH term.**

H_{t-1} = Previous days' residual variance or volatility of stock market (Sensex). It is **GARH term.**

FII = FII (variance repressor or exogenous or independent variable)

xi) Time Series Modelling using ARIMA Model (Autoregressive Integrated Moving Average) for forecasting

In the present research work, the forecasting of FII for the future period has been done with the help of ARIMA modelling. Under this technique, firstly the stationarity of the time series of foreign institutional investor has been checked with the help of ADF. Steps involved in ARIMA estimation include checking of stationarity of time series, equations building, identifying the model, checking model adequacy and forecasting.

- **Checking Stationarity of the time Series**

It is one of the important conditions that ARIMA models can be applied only on a stationary time series. If a series is not stationary, then stationarity need to be induced into it by differencing it and that differenced time series ΔY_t is represented by:

$\Delta Y_t = Y_t - Y_{t-1}$ ……

In the present series, the same procedure has been adopted to make the non-stationary time series into stationary time series.

- **Equation Building** : In an autoregressive model, the value of FII depends linearly on its own past values :

$FII_t = b_0 + b_1 FII_{t-1} + b_2 FII_{t-2}$ …….$+ b_p FII_{t-p} + u_p$ .....

where b_o, b_1, b_2 .....b_p are the coefficients which can be estimated by ordinary least squares regression and u_p is white noise error term.

In moving average model (MA), the current value of FII depends linearly on past 'shocks'.

$FII_t = c_0 + c_1 FII_{t-1} + c_2 FII_{t-2}$ …….$+ c_q FII_{t-q} + u_q$ .....

where c_0, c_1, c_2 .....c_q are the parameters and u_q is the shock or disturbance which affect for q period.

- **ARIMA Model Section**

The selection of p, d and q value is very important in case of ARIMA model as the value when used as an input in the given ARIMA model can directly affect forecasting results. The ARIMA model has been selected on the basis of AIC, SC and DW test

- **Checking Model Adequacy through Residuals of AC and PAC**

Before the forecasting is done with the help of ARIMA model, it is important to see whether residuals of the AC (auto correlation) and PAC (Partial Auto correlation) show random movement. If residuals of AC and PAC show random movement, then the given ARIMA models best fit for the further processing.

1.7.9 Limitations of the Study

The present study has the below mentioned limitations:

i) The present study is based upon the secondary data collected from the official sites of SEBI, RBI, BSE, and NSE along with other database like newswire and capital line. The results and conclusions are also based on this data. Hence, any inconsistency in the results and conclusions drawn on the basis of this data cannot be ruled out.

ii) As the data has been tabulated as per the need of this study, hence some chances of human errors cannot be ruled.

iii) The results and outcome of this research will not be capable of being generalized for all the time as the data analysis has been made for a specific time period.

iv) Though due care has been taken to overcome the limitations of statistical tools used in this research, the inherent limitations of the tools cannot be ruled out and it also applies to this research.

v) The findings and conclusions are the results of human interpretations and hence the chances of less objectivity cannot be ruled out also.

1.8. CHAPTER SCHEME

The present study has been divided into five chapters which are discussed as below:

First chapter titled 'Introduction' studies the inception of the concept of FII in India, its evolution, conceptual and regulatory framework.

Second chapter titled 'Review of Literature' undertakes an extensive and exhaustive review of the empirical research studies on the present research area.

Third chapter titled 'Trends, Magnitude and Composition of FII in India' studies FII magnitude, their trends and the composition. It also discusses the FII flows in equity and debt instruments along with their contribution in the market turnover, market capitalization and Indian GDP.

Fourth chapter titled 'Determinants of FII and Their Relationship Study" discuses the selection of various variables as determinants of FII on the basis of different empirical researches and the study on their dynamic relationship.

Fifth chapter titled "Summary of Findings, Conclusions and Suggestions" summarises all the findings and gives final conclusion. It also gives suggestions to the policy makers, academicians and market regulator for attracting more FII flows by ensuring a more congenial investment environment. It also provides glimpse on the scope for future research.

CHAPTER – 2

REVIEW OF LITERATURE

Since India started its major capital reforms in 1990s, there have been regular inflows of FII in India. These FII flows have affected Indian economy positively as well as negatively. On the positive side, these capital inflows have raised the level of economic development by augmenting the domestic investment, contributed towards increased market capitalisation, enhanced competitiveness in the capital market thereby more thrust towards corporate governance practices and widened financial intermediation. But at the same time, these capital flows have also posed several threats to the economic system of India like inflationary trends, overheating of the Indian economy, unprecedented increase in ER and unmanageable volatility in the capital market due to the possibility of their sudden withdrawal. A large number of empirical studies have been undertaken with respect to FII. In this chapter, various empirical researches which have addressed diversified issues relating to foreign capital flows in general and foreign institutional flows in particular have been studied, interpreted and analysed. The empirical studies which have been undertaken in this chapter are divided into three categories which are discussed as below:

SECTION – I

2.1 EMPIRICAL RESEARCHES ON FII FLOWS IN INDIA

Pati et al (1999), in his study "Flow of Foreign Investment in India: Myths and Realities", stated that the liberalisation reforms which were started in post nineties era had been responded well by the foreign investment in India which was evident in the form of good foreign capital flows. This had been further evidenced by the fact that foreign intuitional investment flows had been found quite well at least in the initial years of nineties. It had been found further that during 1991-97, foreign capital flows worth rupee 7.1 billion had flown into Indian economy while the flow of FPI category had been US $7.5 billion in India till early part of 1997. The study also revealed that in order to attract more foreign capital flows, political stability would be very important, and to

attract FPI, a good depository system, shorter settlement period, efficient custodial services and transparent stock market trading etc. would play an important role.

Kohli et al (2003), in her research work "Capital Flows and Domestic Financial Sector in India", analysed that the whole world including India had witnessed significant changes in the composition and direction of capital flows during the last decade (1990-2001). As per the study, it was revealed that private capital flows had dominated overall capital flow components. Such developments had created a good amount of interest amongst the economists and academicians to understand and analyse the trends of foreign capital flows, and had also motivated them to create an environment where it became desirable for the government to bring in important policy changes. Gradually, this issue had gained more importance in India. This had been supported by the fact that periodically, India had been relaxing controls on capital flows under its policy of "financial liberalization". So the present study conducted to analyse the impact of these flows on the behaviour of economic variables in particular and Indian financial system in general had revealed many surprising outcomes. The study had stated that during these years, portfolio flows had been more volatile than direct investment flows. In the end, the study concluded that they (FII flows) had a great impact upon stock market and domestic money supply. The market indicators suggested that market prices had also been affected by capital flows.

Mohan et al (2008), in his research paper titled "Capital Flows to India", attempted to analyse foreign capital flows in the post nineties era. The study had observed that before the beginning of major reforms in the nineties, the flow of foreign capital was largely restricted to India and it was mainly the result of drastic financial reforms started in the post 1990 phase. These reforms gave a major impetus to foreign capital flows as observed by the study. The study also revealed that the capital flows went up with leap and bonds. For example, net foreign capital flows got enhanced from US $ 7.1 billion in the year 1991 to US $ 45 billion in the year 2006. And the study also found that their nature underwent a major shift from earlier being predominantly official and private debt flows to non-debt flows. It was also observed by the study that net foreign capital flows with US $ 97 million and net FPI US $ 6 million in 1990-91 went up to US

$ 15545 million and US $ 29261 million in 2007 and 2008 respectively. It was observed by the study that though private flows benefited the economy, an excessive sudden withdrawal over a short span of time also posed unforeseen danger and made the economy more stressful by affecting the ER in a negative manner. This also made the economy overheated and caused frequent bubbles in share price of the securities. All these developments affected the current account deficit negatively and gave birth to more challenges in managing the money value and ER value as concluded by this study.

Mohan et al (2008), in his report on "Global Financial Crisis and Key Risks: Impact on India and Asia", examined as to what extent, India as one of the developing country had been able to face the challenges posed by the global financial meltdown. The study observed that there had been numerous factors which acted in favour of the country and which saved the country from the grim clutches of global melt down originated in USA (due to the problem of subprime crisis). One of the major reasons amongst them, as claimed by the study, had been that the Indian economy had been a demand-driven country and its dependence on the foreign saving had been very limited.

The study further claimed that the second reason for the same had been an effective Indian banking policy managed by RBI like timely action in terms of making changes in Cash Reserve Ratio (CRR), Statutory Reserve Ratio (SLR) and Capital Adequate Ratios etc. On the foreign capital flows' front, foreign direct investment as well as FPI had shown good trends of growth after 2002 in particular. However, in the initial stage, foreign direct investment had shown more consistent trends, but later on, it showed more upward moving trends in its flows. Foreign portfolio investment (FPI), on the other hand, had shown more volatility in the trends of its flows. In short, it was concluded by the study that the flows of the foreign capital (including both FDI and FPI) had grown substantially after 2002. However, during 2008 crisis, the country had remained comparatively less affected due to its more proactive economic and banking policies.

Bansal and Pasricha (2009), in their study on "Investment Trends of FII in India: An Analytical View", examined the investment trends by FIIs during the years from 1992 to 2009. The study observed that before 1990, the major flows in India constituted the money inflows from NRI and other commercial borrowings. However, after 1990s, the

whole picture got changed as claimed by the study. The total FPI which was just US $ 244 million in 1992-93, increased to US $ 29,395 million in 2007-08. The study further revealed that the composition of foreign investment also underwent major changes, like in 1992-93, FII constituted 0.41% in total FPI and in the year 2007-08, it got increased to 69%. Further the study observed that in order to maintain a good rate of economic growth (around 7 %), US $ 40 billion were needed by Indian companies along with other sources of finance like FIIs, Domestic Financial Institutions DFIs and individual domestic investors. Moreover, Government of India needed to have good regulatory system for all the market players and to ensure that this regulatory system needed to be in line with international regulatory system and practices. It was also observed by the study that by the end of 2009, around 1600 FIIs and 5200 sub-accounts were registered with SEBI, but only few and selected FIIs were active in the Indian stock market which was a major source of concern. To the utter surprise to the authors of this study, it was revealed that these few and selected FIIs hailed mainly from USA and UK. So the study stated that FIIs from other countries should have been encouraged too. It was observed by the study that though there had been a gradual increase in FII flows, subsequently, there was a great need felt to maintain the same and to ensure participation of FIIs in India from across the world as well.

Sumanjeet et al (2009), in his study titled “Foreign Capital Flows into India and their Composition, Regulations, Issues and Policy Options”, studied the contribution of various investing bodies like FDI, FPI, FVC, ECBs, NRIs etc. and the composition of foreign capital flows and the rules governing them. The period of the study was from 1990 to 2008. As per the study, the total foreign investment in India stood at US $ 59288 million in 2007-08. The study after making a thorough analysis of the facts and figures concluded that foreign capital had come to play an effective role in the economic growth of the country. This study further observed that foreign capital investment was not a natural blessing. Rather a proper balance was needed to be maintained as claimed by the study. Because, whenever there were excessive inflows of foreign capital, it led to many economic problems like inflationary pressure, appreciation of ER, depreciation in the current account etc, and for some times unbalancing of the financial stability of the capital market. The study also observed that it would become more dangerous (as it

would increase the degree of volatility in the stock market) if foreign players would invest with short term objective. The paper highlighted the fact that the countries which had better macroeconomic policies and defined regulatory mechanism in place were in a better position to deal with FII flows even when the flows were found to be for short term. The study revealed that during the above period, if India had not been able to manage FIIs well, the reasons responsible for the same included partial inactiveness at many times or over activeness at other times but not ensuring smart work at the right time on the part of government. So though the government had been taking some actions, it needed to do more because countries which allowed FII flows must choose between the two options: choice of stability in current account as FII flows would increase the kitty of FERs at the cost of risks involved with the same or the second choice of loosing FIIs which India could not afford in the light of current globalised environment.

Akula et al (2011), in his research study titled "An Overview of FII in India", studied FII data for five years i.e. from 2006 to 2010. The main aim of the paper was to study the process of FII registration and trends of their investment during the above period. The study observed that India was one of the fastest growing economies after China during this period. As per the World Bank Report, in terms of GDP growth, India stood 10^{th} amongst the largest economies of the world as observed by the study. It further stated that FII had increased liquidity in the Indian capital market (including both BSE and NSE securities). In the last, as per the study, a positive correlation was found amongst FII, market capitalization, BSE and NSE indices which in turned proved that the liquidity and the volatility of the Indian capital market was highly driven by FII flows.

Shankar (2011), in his working paper titled "Quantitative Easing and FII Inflows into India – Is there a Connection", studied the impact of QE easing on FII flows and their investment patterns on the basis of daily data from March 2010 to June 2011. The paper observed that in 2010, when faced with the problem of zero interest and a weak market, USA had to announce a fresh round of monetary measures which came to be known as QE-II. It was also observed that this action on the part of USA led to more FII flows into EMEs (Emerging Market Economies) including India. The study, however, also observed that the FII flows had gone down fully well in India only after November,

2010. As claimed by this study, one of the main reasons which accounted for this result was that the FIIs had already anticipated the action of USA government and changed their investment strategy accordingly. Additionally, it was also disclosed by the study that as per the granger causality test, there was found causality running from NSE Nifty to FII flows.

Dhiman (2012), in his research paper titled "Impact of FII Flows on Stock Market", made an analysis of FII flows data ranging from 1992 to 2010. The study observed that over the years, the FIIs had grown many folds in terms of their total amount and registration numbers. It was found by the study that there were around 1484 FIIs and 38 foreign brokers operating in India in 2008-09. The major (around 50 %) proportion of total FII came from P Notes (also called off shore derivates). Though, FII flows grown up substantially, it has also facilitated bringing in more the capital market reforms along with increasing the kitty of FERs. Thus, FIIs provided a platform to Indian economy to use non-debt form of capital flows. However, their flows happened to be negative during 2008 due to the global financial crisis originated in USA. Even domestic FIs also preferred to sell their securities during that time. Such withdrawals made the market highly panicky. This situation did not last for a long time and in the very next year, FIIs invested heavily in the Indian capital market as observed by the study. In short, the study concluded that, one point on which everybody would agree, was that FIIs, by increasing the breadth and depth and bringing in more quantitative and qualitative changes, had changed the face of Indian economy since their early entry in post nineties era.

Prakash and Dharamveer (2012), in their paper titled "FIIs: Fuel of India's Growth Engine", studied the role of FIIs in accelerating the growth rate of Indian economy. They studied FII flows data for four years ranging from 2007 to 2010. The study stated that FIIs had been playing a major role in the Indian economy. It is further observed that the government decisions had also had a great impact on the FII flows. During 2007, there was speculation that government was going to ban P Notes and consequently the FII flows declined sharply. The government, however, when postponed its decision later on. The impact of FIIs action to invest less was so huge that local Financial Institutions and mutual fund also started keeping close eyes on FIIs activities.

Now the perception was that if FIIs had a good image about Indian economy, the economy in reality had strong economic fundamentals or vice versa. But at the same time, one thing which all local FIs, mutual funds and other inventors must understood was that FIIs which were investing through P Notes route were the hidden identities whose main aim was to reap benefits. P Notes was the route through which the unaccounted money also flew into the Indian economy. So the government needed to be more cautious as cautioned by the study. Moreover, the study also revealed that a direct correlation was found between the flows of FII and stock market which was also witnessed in 2007 and 2008 in the biggest ever fall in the stock market. The prime facie as claimed by the study was that FIIs had been playing a major role in the stock market.

Siddiqui and Azad (2012), undertook a research on the title “FII Flows and Indian Financial Market: Relationship and Way Forward”. The objective of this research work was to analyse the dynamic relationship between the indices of the Indian stock market and the flows of the FII in India. The study included a period of ten years ranging from 2000 to 2010. It observed that over the years, FII had become one of the most preferred choices as compared to other external finance sources which happened to be non-debt and non-volatile in nature. In the study, the sectoral examination of the FII flows’ impact clearly came out with the conclusion that the FIIs had focused on a few selected sectors, like auto, metal, IT and banking sector etc. for their investment over the years in India.

SECTION – II

2.2 EMPIRICAL RESEARCHES ON FII DETERMINANTS AND THEIR RELATIONSHIP

Chakrabarti et al (2001), in his paper titled "FII Flows to India: Nature and Causes", made an empirical investigation to analyse the inter relationship between FII flows, on one hand and equity returns in India in the Indian context, on the other. The study revealed that after the world faced the Asian crisis and info-tech bubble assumed serious proportions internationally in the year 1998-99, there was a sharp decline of FII flows by the tune of US $ 61 million. The study which used the monthly data from 1993 to 1999, found that there was a positive correlation between the stock returns and the

flows of FII. As per the study, the period under consideration was divided into two phases. The first phase was named as pre Asian crisis phase and the second phase was named as post Asian crisis phase. The aim of the same was to study the impact of the pre and post Asian crisis on the flows of FII.

This study found a significant difference in the nature of FII flows in the pre Asian and post Asian crisis phase. It was found that in the pre Asian period, if there was any change in the FII flows, it would also had an impact on stock market return. This meant that FII acted as an independent variable and the stock market return acted as the dependent variable. On the contrary, in the post Asian crisis, the changes occurred in FII flows were due to stock market return mainly. This meant that the stock returns acted as the independent variable and the FII flows acted the dependent variable.

The study further revealed that there was no information asymmetry and the FIIs had the full availability of all market information as the domestic players had. Moreover, as the study observed, any change(s) to the sovereign rating of India did not bring any change in the attitude of FIIs and they did not deter from investing in India. The beta (risk factor) of S&P 500 affected FII flows negatively only in the pre Asian crisis period, though in the post Asian crisis period, the effect either got highly marginalised or it just got disappeared. Moreover, in the post Asian crisis (after 1998), stock market returns became the ultimate force for FIIs to invest in India. In the study, it was concluded that there was a significant difference in the investment approach of FIIs towards India in the pre and post Asian crisis period.

Kohli et al (2001), in her paper "Capital Flows and their Macroeconomic Effects in India", analysed the trends and the composition of flows of foreign capital into Indian capital market and examined the effect of foreign capital flows on the important macroeconomic variables in the country. The paper also examined the policy responses of Indian Government to these capital flows. The author discovered that the foreign capital flows had a substantial impact on the real appreciation of the economy and it had also augmented the domestic money supply. However, during the period of capital surge, the undesirable results had been countered by the policy of interventions and sterilization. The research study finally observed that by bringing to light ‘the real cost of these polices

of intervention and sterilization' during the period of good FII flows, it further motivated government to attract more FII flows.

Kohli et al (2001), in her paper "Capital Account Liberalization: Empirical Evidence and Policy Issues", examined the trends and the impact of capital flows on key macro economic variables and discussed the implications for economic policy. The author in her paper presented a glimpse of changing trends in the composition of capital flows to Indian economy. She also traced the reasons for these developments. The author's observation reflected that official capital flows were no longer important source of capital flows but private capital flows, particularly portfolio capital flows gained huge importance over the last few years. The author also examined the impact of these flows on various macro level economic variables namely, ERs, FERs, interest rates, saving and investment scenario as well as domestic monetary condition. The study concluded that the FII flows had a great impact on all these variables.

Chakrabarti et al (2002), in his research paper "Market Reaction to Addition of Indian Stocks to the MSCI Index", explained that world market since long times was dominated by the international portfolio investors. As per this study, these portfolio investors invested their funds in those international funds that tracked some of the best stock market indices. In that situation, as claimed by the study, the international stock market indices played an important role in international portfolio investments decisions. International Finance Corporation and Morgan Stanley Capital International were some of the prominent international stock indices which were observed by FIIs for their decision making. Gradually, MSCI assumed the status of global leader. And inclusion of country stock in these international indexes generally increased the market price of included share. It also induced the trading volume of that stock in the markets. These types of effects after the inclusion of shares into indexes were called 'index effects'. This paper further discussed about the various forms of indices' effects and also the construction and methodology of MSCI country indices. This paper covered 19 Indian stock additions, which took place during 1997 to 2001. In the last, the paper concluded that the inclusion in an international index had been perceived as a positive signal by the market so the rise in price and volume of the shares traded was found to be obvious phenomena.

Khanna, Sushil (2002), in his paper "Has India Gained from Capital Account Liberalization? - Private Capital and the Indian Economy in the 1990s", analysed the experience of Indian economy with the private capital inflows post nineties era. In this research work, an endeavor had been made by the author to analyse the effects of the constraints imposed on the capital market of Indian economy. As the RBI had to manage the impact of foreign portfolio investment, the study discussed the situations that led to changes in the RBI policy which in turn had liberalized the financial sector in India. As per the study's observations about the macro economic analysis, it was revealed that the growth rate of Indian economy showed marginal decline during 1990s. But at the same time, rate of saving or investment did not show good sign in the economy during that period. Moreover, there was no empirical evidence as claimed by the study that the entry of FIIs had brought down the cost of capital. The study reinforced the view and concluded that FIIs were not the replacement for internal resources to be used by the corporate. And likewise, FII was also not the substitute for capital market to be tapped by the development banks as well.

Eun & Rensick (2002), in their book on foreign capital flows observed that there had been many reasons behind the surge of global foreign portfolio investment during the last few years. As per the analysis of this book, some of the reasons for this development included (a) deregulating the Indian financial markets, (b) introducing new investment alternative vehicles such as country funds, mutual funds and globally listed stocks which helped the foreign players in diversifying their portfolio, and (c) increasing their yield along with reducing the risks without enhancing their costs much. The study observed that in spite of the substantial return from the foreign market earned with the help of portfolio diversification process, a good chunk of FII flows were also put into the securities of their domestic companies due to the prevalence of the concept of 'home biasness'. The concept of home biasness not only brought in more market imperfection in the financial markets, it also led to the growth of some malpractices in the market like legal hurdles for foreign capital inflows, discriminatory treatment in terms of taxes for foreign players and charging of unnecessary excessive transaction fees as claimed by this study.

Mukherjee et al (2002) in his paper titled “FII in the Indian Equity Market: An Analysis of Daily Flows during January 1999-May 2002”, analysed the dynamic relationship between FII and its possible covariates in the Indian economy. The study was based on the daily data from 1999 to 2002. In this research work, two variables were included for study purpose. The first variable included the daily market return and its volatility in the domestic as well as global stock market. The next type of variables included the macro level economic variables like interest rate, IPI (Industrial Production Index) and ER which might had the possibility of affecting FIIs’ perception and expectations about the Indian economy.

The study observed that (a) the inflows and outlaws of FII from the Indian economy were caused by the stock market returns but the reverse did not hold good i.e. stock market returns were not likely to be caused by FII flows, (b) the Indian stock market returns acted as the biggest and the strongest factor to attract FII flows, (c) FII inflows and sale acted and reacted to the tune of the stock market performance but FII purchase did not act to the tune of the Indian stock market performance, (d) the Indian stock market was not perceived and used as a destination for the portfolio diversification, (e) the basic fundamentals of the Indian economy and the returns occurring due to the ER variance might have attracted the foreign institutional investment, but it did not last for a long time and (f) the daily FII flows were found to be highly auto correlated. The study further supported the fact that though the liberalisation regime in the emerging countries like India was a good step in the direction of capital formation, but it should have been supported by positive improvements in the Indian financial system. In addition to this, the study also revealed that substantial efforts were needed to be made in order to gain and consolidate the FIIs confidence in the Indian economy which would help in strengthening the base of the domestic shareholders further. The sooner we would do this, the easier, it would be possible to provide a cushion against the malpractices of sudden outflows by FII. Then, it would also be feasible to encash all the advantages of global market integration through the regular participation of FIIs. Hence, there was a need to do more to attract more FII in the Indian economy as observed by this study.

Batra et al (2003), in her paper titled "The Dynamics of Foreign Portfolio Inflows and Equity Return in India", tried to develop an understanding of investment decision making, trading strategies and the trading behaviour by FIIs in Indian equity market. The daily data as well as monthly data covering a period range from January, 2000 to December, 2002 had been used in the this research work. The monthly data period ranged from January, 1994 to December, 2002. This paper being based on positive feedback trading strategy tested the hypothesis that net equity demand by FIIs had been driven by recent returns in the equity market of the host country. The study further analysed the daily and monthly data to explore the trading behaviour of FIIs and their impact on stock market stability. On the basis of daily data analysis, the study found that FIIs were providing positive feedback about the investors and the trend chasers in the Indian economy. However, when the study analysed the data on monthly basis, it was found that there was no evidence of positive feedback trading. So both the results based on the daily and the monthly data had been found to be contradictory as claimed by this study.

Gordon and Gupta (2003), in their paper "Portfolio Flows into India: Do Domestic Fundamentals Matter", analysed the impact of various factors on the FII equity portfolio flows flowing into India. The study found that the FII flows to India were undersized as and when compared to emerging markets, but seemed to be relatively less volatile. This study classified variables into two categories, viz. domestic and external. The first group consisted of macro economic and political variables. If foreign investors followed these variables to track any foreign market, then they were stated to be following a top down approach, whereas bottom down approach was pursued, where foreign investors were following the second set of variables as observed by this study. Moreover, the study claimed that flows were decided by both the factors domestic as well as external ones. The study concluded that out of the external factors, emerging market returns and LIBOR were the most important ones amongst many other factors. And amongst the domestic factors, the change in credit rating of the company was the major reason as further concluded by this study.

Bose and Coondoo (2004), in their research paper "The Impact of FII Regulation of India – A Time Series Intervention Analysis of Equity Flows", studied the effect of the

FII policy reforms on the Indian stock market. The study observed that FIIs, which began investment in India in January 1993, gave a new direction to the regime of financial sector reforms in India. The study also made a herculean attempt to assess the effect of various policy decisions on FII flows. The period taken under this study spanned from 1999 to 2004. This study paper, for this purpose, applied the multivariate GARCH model of regression. As per the study, the results strongly supported the fact that Indian liberalization policies attracted FII flows very positively during these years. Even various preventive measures and actions which were taken for better controlling of FII flows did not reflect any sign of FII slowing down in the Indian capital market during that period. Thus, the study ultimately concluded that India proved to be a potentially hidden economy for FIIs. Therefore, almost all the flows of FII were more guided by the domestic market returns rather than only looking at the fundamentals of the economy as observed by this study.

Rai and Bhanumurthy (2004), in their research paper "Determinants of FII in India: The Role of Return, Risk, and Inflation", tried to examine which factors and determinants affected FII flows in India. The researchers attempted to examine the impact of risk, return and inflation on the flows of FII. The proposed hypothesis of the study was that risk and inflation in a domestic country (like Indian economy) and return in a foreign market (like USA economy) would have an adverse impact on the FII flows, whereas risk and inflation in foreign country (like USA economy) and yield in domestic country (like Indian economy) would have a positive impact on the FII flows. To test hypothesis, they arranged the monthly data from 1994 to 2002.

USA was selected as the major foreign destination for modelling FII inflows in India, as USA had largest proportion of FII flows to India that happened to be around 42%. As per the study, a positive correlation between FII flows and the return of BSE Sensex and inflation in US (US as home country) was found. However, there was found to be a negative relationship between FII flows in India and inflation in India (host country), risk on BSE Sensex and yield on S&P 500 index. Moreover, the study also found that there was no causation from FII side towards Indian stock market returns as it was found to be so by some of the existing studies like one by Gordon and Gupta (2003).

The study further observed that if there had been more stabilised Indian stock market with special reference to volatility and if the ex ante risk had been more controlled, it would have brought in more FII flows in the Indian economy. Otherwise, there might be some adverse and negative impact of other non-fundamental factors on FII flows in such a manner that would have affected the Indian economy more intrinsically as observed by this study. The study also analysed the impact of market news on the FII flows. It observed that FIIs were found to be more reactive to the bad news than their reaction to good news. This meant that they sold their securities more promptly when faced with bad news. They acted more intelligently and did not buy in a hurried manner on getting to know about some good news. Thereby, it was concluded by this study that overall, FII flows were affected by many factors like stock market returns, inflation and ex-ante risk, with the stock market returns affecting FII flows the most as observed by this study.

Richards et al (2005), in his paper "Big Fish in Small Ponds: The trading Behaviour and Price Impact of Foreign Investors in Asian Emerging Equity Markets", studied the patterns of the flows of FII and the effect of these flows on various emerging markets like India. There were six Asian markets included in this paper namely Korea, Philippines, Thailand, Jakarta, Taiwan and Kodak stock markets. The data used in this study was based on the daily trading by FIIs and the period under consideration was from 1992 to 2002. The study revealed that the recent yields in the global markets were some of the major forces which influenced the investment decision making process of FII flows. The second observation of the paper was that the price impact of foreign investors trading was much higher than what had been recommended by some of the earlier studies on emerging capital markets.

Shah and Patnaik (2005), in their paper titled "India’s Experience with Capital Flows", tried to discover the cause and effect relationship of the majorly observed features of India's capital flows. The paper conducted an empirical analysis featuring GDP, current account data, capital account, FDI, portfolio equity flows and debt. The authors reviewed the historical evolution of the currency regime and capital controls, and also examined the experience of FDI and portfolio flows with Indian capital market. They

found a strong intertwined experience of India regarding capital flows and currency regime. The study observed that currency pegging (i.e. fixation of ER of currency by comparing its value with a single currency value) as capital flows had shaped the currency regime; and the currency regime, in turn, had shaped capital flows as observed by this study.

Chakravarty et al (2006), in her research paper "Stock Market and Macroeconomic Behaviour in India", investigated the association between the prices of the Indian stock market and some important economic variables for the period ranging from 1991 to 2005. The variables for which relationship with stock prices was tested included inflation rate, supply of money, industrial production index , ER and gold price. The author had used monthly data for these variables. For studying the dynamic relationship between the economic variables and the prices of the Indian stock market, granger causality test had been used in this study. She concluded that ER had no effect on stock prices but good industrial performance and low inflation could affect the stock markets positively. Moreover, as claimed by this study, money supply had not shown any relationship with stock prices. The study also concluded that it was the FII flows which would make index cross 10000 marks and hence causality found to be running from FII to stock market as observed by this study.

Kumar et al (2006), in his paper “Role of Institutional Investors in Indian Stock Market”, investigated the FIIs participation and mutual funds participation in the Indian secondary market. In this research study, the monthly data of Indian stock market (Sensex) and FII flows for the period ranging from 1993 to 1997 had been used. Moreover, the study also tried to establish the relationship between the investment trends by the major institutional investors and the stock market movements. The author outlined the major developments in Indian stock market which were responsible for the rising trends in the FII flows. By applying simple regression model, the author concluded that mutual fund and FIIs were potential market movers and their investment flows could be used to decide about the direction of the market. It also concluded that the flows of FIIs were more reactive to the basic fundamentals of the Indian economy rather than being driven by the technical position of the market and the short-term changes.

Sikdar et al (2006), in his paper titled “Foreign Capital Inflows into India: Determinants and their Management”, studied the relationship between foreign capital flows (FDI, FPI) and other economic variables during 1997 to 2003. The study observed that under the regime of liberalization policy, the outcomes were highly surprising. The composition of capital inflow had undergone a major change over these years. Dependence on foreign aid had come down drastically. And funds in the form of Foreign Portfolio Investment (FPI), Foreign Direct Investment (FDI), external commercial borrowings and non- resident Indians deposits had come to be recognized as the major sources of capital flows in India as concluded by this study. Even amongst these foreign capital flows, there had been a silent and gradual transition from debt-oriented flows to equity-oriented flows as observed by this study.

Chakraborty et al (2007), in her paper titled “FII Flows and Indian Stock Market Returns: A Cause and Effect Relationship Study”, studied the relationship between the returns of the Indian stock market and the flows of FII. The study work included the data ranging between 1997 to 2005. The objective of this research work was to examine the causality between FII and Indian stock market (BSE). With the application of granger causality test, the study concluded that the stock market returns in India granger caused FII flows while the reverse i.e. causality from FII to stock market return was not found. In addition to this, the study also observed that FII had not only increased the liquidity in the stock market, it had also added up in the kitty of source funding of the economy. Thus, it could safely be argued as claimed by this study, that the FIIs had come to play a significant role in developing and strengthening the functioning of the system of developing countries like India. However, there was a need felt on the part of the government that it should adopt a very cautious policy to guard against the possible ill effects of FII flows as conclude by this study.

Babu and Prabheesh (2008), studied the relationship between FII flows and stock market return in their research paper titled “Causal relationships between FII and stock returns in India”. The study included daily data of FII and stock returns from 2003 to 2007. It employed various statistical techniques like VAR, impulse response and granger causality test to study the relationship. As per the study, Granger causality tests revealed

that there was found to be a bi-directional causality between the FII flows and Nifty. This meant that on the one hand the changes in FII flows caused changes in Nifty value; on the other hand, the changes in Nifty caused changes in FII flows. However, the impulse Response Function (IRF) showed that the flows of FII in the Indian economy were more driven by the Indian stock market returns i.e. FIIs acted more promptly towards stock returns in the Indian capital market than the vice versa as concluded by this study.

Prasanna et al (2008), in his research titled "FIIs: Investment Preferences in India", which used data of 27 companies in the year 2008 attempted to analyse the preferences of FIIs for the companies. The paper concluded that there was a positive correlation between FIIs preference and the company's structure, corporate performance, its share returns and price earnings ratio. This meant that the factors like company performance, its organisational structure, the returns on its share and the P-E ratio proved to be important determinants for FIIs in their investment decision making. The study also observed that the PE ratio of India (20 %) was much more than Brazil with 10 %, Russia with 9 % and China with 19 % in 2005 (SEBI Handbook, 2005). This positive development helped India to attract more FII.

Empirically, this research study observed that the investment from FIIs got concentrated more in those Indian companies in which public holding was comparatively more. Moreover, the study also observed that under the context of corporate governance, the FIIs preferred to invest in those companies where the promoters' family holding was not substantial. This important observation provided a platform for further research that market performance of the country in general and company performance in specific were some of the strongest determinants for attracting more foreign investment as concluded by this study.

Rajput & Thaker (2008), in their study on "Exchange Rate, FII and Stock Index Relationship in India", tried to measure the relationship amongst all these variables and their predictive power for the period ranging from 2000 to 2005. This research was undertaken especially under the light of third generation reforms initiated in India. The study observed that in a more globalized world, ER, FII and Stock Index were the important economic variables and reflected the underlying strength and stability of

business and economy as a whole. The study used correlation and regression method for analysis purpose. The study found that there was no long term positive correlation between ER and stock index leaving barring 2002 and 2005. However, FII and stock index were found to have a positive correlation as observed by this study. But, it was also found that it was not possible to predict the future value of one variable on the basis of another variable as concluded by this study.

Ravi et al (2008), in his study titled "Determinants of FII Inflows: India", attempted to study the flows of FII and tried to identify the important factors affecting FII flows in Indian economy. The study included the data from 1997 to 2007; and it was based on GLS (Generalised Least Square) model. The study concluded that various determinants which had affected FII flows in India included domestic macroeconomic variables like inflation, FERs, money supply, and ER, etc.

Ananthanarayanan, Krishnamurti and Sen (2009), studied the relationship of FII flows with the security returns in India under the title "FIIs and Security Returns: Evidence from Indian Stock Exchanges". This research work that included data from 1999 to 2003 attempted to investigate what impact the trading of FIIs would have on the major stock indices of India. The main conclusions of the study were as follows: I) The unexpected flows by FIIs have had more impact on the stock index than the expected flows as the unexpected flows created a situation of volatility. II) There was a strong evidence of results which showed consistency with the hypothesis of base-broadening. III) The study could not find any substantial evidence for the contrarian strategies being adopted by FIIs. IV) The study supported the hypothesis of the price pressure. V) In the last, the study concluded that there was no evidence to the fact that FIIs destabilized the Indian capital market.

Gosh and Herwadkar (2009), in their research paper titled "Foreign Portfolio Flows and Their Impact on Financial Markets in India", attempted to study the FII flows' relation with other important parameters in the emerging economies like India. In this study, monthly data on various financial variables before the crisis of global meltdown (1998 to 2008) was used. The granger causality and correlation tests applied in this study concluded that the net FII flows granger caused equity (SENSEX) as well as ER in the

long span of time. But in the short span of time, as per the impulse response function (IRF) also used in this study, a shock to the FII flows had resulted in rise in the equity stock prices, appreciation of ER and decrease in interest rate. However, the effect of these shocks was short lived. Moreover, it was also found by this study that there was a positive correlation between the foreign capital inflows and equity returns in the emerging countries like India.

Prusty et al (2009), in his research study titled "Economic Growth, FII Flows and Financial Markets Integration in India", undertook a study on the determinants of FII in India. The study included the data from 1996 to 2007. The study observed that financial market integration and real economic growth were the major factors which affected the FII inflows. The paper recommended that there should be more thrust on the acceleration process of economic reforms initiated in India so that the Indian economy's integration with the world economy could be consolidated further which would help India in achieving more real economic growth.

Ray et al (2009), in his research study titled "FII Flows & Indian Stock Market Returns: A Relationship Study", studied the relationship between stock market and the flows of FII during the period from 2006 to 2008. In this study, various econometric models like the Augmented Dickey Fuller Test, Phillips-Perron (PP) Test and Granger causality test had been used for making the relationship analysis. As per the granger causality test, it was found that there was granger causality from the equity returns to the FII; however the reverse was not found true between the two variables during the same period as concluded by this study.

Sehgal and Tripathi (2009), made a genuine attempt to analyse the investment strategies of FIIs in their research paper titled "Investment Strategies of FIIs in The Indian Equity Market". The data used in this study were daily as well as monthly. The period under consideration was from 2000 to 2006. The study exclusively investigated the question that while investing, what investment strategies had been used by FIIs. It tried to find answer as to whether it was trading strategy or herding strategy or positive feedback strategy used by FIIs. It also tried to investigate whether these trading strategies were found suitable in the Indian economic environment. As per this study, FIls were

found to be propelled by positive feedback traders at aggregate level when monthly data were used. However, the same evidence was difficult to find when daily data were used as observed by this study. Probably, this was because of the fact that FIIs did not react to the market information instantaneously and rather they waited for market information to get crystallized as claimed by this study. There was a common perception that FII had driven the market and had also implications for the policy makers to control their activities. The study results suggested that it was actually the market performance which propelled FII activities. The study further observed that FIIs exhibited intense herding behaviour at the aggregate level. They also showed clustering effect at the individual level which was though relatively less significant. This difference in herding behaviour was due to the fact that individually FIIs did consider stock fundamentals in addition to mimicking each other's behaviour. In the last, the study concluded that it was also remarkable to note that FIIs shared each others' the expectations more at aggregate level than at the individual level.

Kaur and Dhillon (2010), in their research paper titled "Determinants of FIIs' Investment in India", investigated about the fact as to which factors affected FII flows in India. The period of study was from 1995 to 2006. Both financial and macro-economic variables had been taken together to study the same. On the one hand, in the long run, the returns available in the host country on stock market (like returns on Sensex in India) had a positive and important impact on the FII flows, and on the other hand, the returns available in the home country (like returns on S&P 500 Index in USA) had a negative but insignificant impact on FII flows in the long-run as well in the short run.

In terms of risk associated with variability of host country index (risk associated with Sensex) as compared to risk associated with S& P 500 Index, it was observed by the study that risk of host country had a more negative and significant impact on FII inflows to India. On the same line, stock market turnover of India and market capitalization had a more positive but insignificant impact on FIIs investment in long span of time but positive and significant impact on FIIs investment in short span of time as observed by this study. The study further claimed that risk and return features of Indian capital market were some of the important factors well considered by FIIs before investing both in the

long-run as well as in the short-run. However, some other variables of Indian stock market e.g. market capitalization and stock market turnover were found important only in the short-run as claimed by this study.

It was further observed by this study that among various macro level factors, economic growth of India had a more significant and a positive impact on FII flows into India in the long run as well as in the short-run. However, all other macro level factors had influenced FII flows only in the long-run as claimed by this study. For example, inflation in home country (US Producer Price Index - PPI) had significant and positive influence while inflation in India (host country) as shown by Wholesale Price Index – WPI, had negative and significant impact on FII in India. Thus the study finally concluded that FII inflows were determined by many macro level and financial variables like risk-return of stock market, stock market turnover, market capitalization, and some other factors like economic growth, inflation, interest rate, and liberalization policies.

Khan and Ikram (2010), conducted research on the title "Testing Semi-Strong Form of Efficient Market Hypothesis in Relation to the Impact of FIIs' Investments on Indian Capital Market". In this study, foreign investment analysis had been made for a span of ten years period which ranged from 2000 to 2010. For the purpose of this study, two major stock indexes i.e. BSE and NSE that were the representatives of the Indian stock market had been included in the study. The major techniques which were used to study and analyse the direction and the degree of the correlation between these variables included linear regression equations and Karl-Pearson's simple correlation analysis.

The study observed that FII did have a major impact on the Indian stock market which in turn confirmed the fact that the stock market of India enjoyed only semi-strong form of efficiency with regards to FII flows. This meant that when FIIs took some action in terms of buying or selling their investment in the Indian stock market, some changes were felt in BSE and NSE in terms of variations in their indices (Sensex and Nifty). This reflected the existence of symmetrical market information where no investor was able to generate abnormal profits because nobody was in a position to outperform the stock market. The study also observed that the value of intercept was found to be quite high with the application of regression analysis on BSE and NSE. It confirmed partially the

existence of other forces in affecting the value of BSE and NSE stock indices. In addition to the macro level factors, there might be some micro level factors like profitability and operations of the concerned companies which would have affected the stock market prices or it might be the health of domestic economy in general as concluded by this study.

The study further observed that while investigating the role of FIIs, it must be considered that FIIs were just seasonal friends in the sunny days. The study observed that the more impact, FII flows have had on the indices' movements of the Indian stock market, the more exposed we stood before them. The study also stated that though the regular inflows of FII had increased the availability of FERs with the country like India, but at the same time, it had happened to be one of the main determinants affecting the volatility of the Indian stock market. The same had been supported by the fact of the existence of financial recession of 2008 which originated in USA and got the name of subprime crisis. Therefore, the study came to the conclusion that a proper analysis on the role, magnitude and effect of FII flows on the Indian stock market be properly observed and analysed by the Indian capital market regulator so that the Indian stock market as well the innocent investors remained protected from the unwarranted risky flows of FII.

Kumar and Gupta (2010), in their study on "FII Flows to India: Economic Indicators", tried to study the determinants of FII flows and their relationship in India. The study included the data of FII from 1995-96 to 2006-07. The factors included in this study were risk and return of S&P 500 index of USA, return and risk at Nifty, inflation, interest and ER etc. The study observed that the FII activities in the Indian stock market experienced sharp hike every year but their net investment also showed some symmetrical trends. From this observation, it was safely concluded by the study that FIIs were much interested in making short-term profit by trading in the Indian capital market. They invested more in equity oriented funds which accounted for around 95 percent of their total investment. Though they enjoyed comparatively lesser share in the Indian stock market amongst all the major institutional investors, FIIs emerged as the bigger custodian in the capital market of India. The research work also concluded that risk-

return of USA market and Indian market, ER and inflation became the major determinants of FII flows in India.

Mitra et al (2010), in his research paper titled “Relationship among FII, Stock Returns and Currency–Over Rates in India”, tried to explore the relationship between the change over rates of domestic currency, stock prices in the domestic capital and flows of foreign investment in India. In this study, the daily data from the period of 2000 to 2009 had been used. Granger causality test had been employed for the analysis of cause and effect relationship in the long term. As per the majority of the studies conducted in India, it was found that there was granger causality from domestic returns of the India stock market to the flows of foreign capital but granger causality from the flows of foreign capital to stock market returns was not found. However, this study revealed that there was a bi directional causality between the returns of the Indian stock market and the foreign investment flows.

Paliwal and Vashishtha (2011), investigated the causal relationship between FII and stock market return in their research paper titled “FII and Indian Stock Market: A Causality Investigation”. In this study, data for a period of nineteen years which ranged from 1992 to 2010 had been employed for the purpose of analysis. The objective of this study was to have better comprehension of the dynamic relationship between the Indian stock market returns based on BSE Sensex and the FII flows. The study that attempted to know the direction of causality with the application of granger causality test found that both stock market returns as well the flows of FII) granger caused each other. In other words, both had been found to enjoy bi directional causality. In this study, variance decomposition and impulse response function were undertaken in order to study the phenomena of causality for the short run between these variables. Surprisingly, the findings of the variance decomposition co incidentally matched with findings of granger causality. The net result concluded that both the variables namely FII and stock market returns granger caused each other in the short span of time as well as in the long span of time.

Kumar and Tavishi (2012), in their research paper titled “Behavioural Modelling of FIIs in Indian Equity Market”, analysed the dynamic and static relationship between

the FII and the Indian stock market returns. For making an analysis of this relationship study, the data on FII and Indian stock market had been used for a period of ten years ranging from 2000 to 2010. Various econometrics techniques like VAR, granger causality test and Impulse Response Function (IRF) had been used for this purpose. As per the empirical results of the study, the following interpretations had been offered. Firstly, as per the study, the flows of foreign intuitional investment were found to be more correlated with their past lagged values as well as with the India stock market lagged returns. The response of FII to the standard shock as well as to the returns of stock market was found to be sharper. The relationship was also found to be highly significant but only in the short span of time and not in the long span of time. Secondly, as per the study, bi directional causality was found between the FII flows and the Indian stock market returns.

SECTION – III

2.3 EMPIRICAL RESEARCHES ON THE IMPACT OF FII FLOWS ON THE VOLATILITY OF THE INDIAN STOCK MARKET.

Stulz et al (1997), in his paper "International Portfolio Flows and Security Markets", made an analytical study of the effect of the flows of FII on the Indian stock market returns. The study supported the fact that by opening of the Indian economy to the outer world and allowing foreign players to invest in India, the cost of capital had gone down drastically and the stock market had also not been affected negatively. The study further examined the issue of cross-country co-movement in valuations and the possibility of contagion effect in the international financial markets. The writers of this research work also attempted to investigate whether due to the flows of foreign invitational investment, the valuation of the companies could get away from the basic fundamentals; and they could also make the stock market more volatile. The study concluded that there was no adequate and sufficient evidence of the fact that the flows of FII increased the degree of volatility in the Indian Stock market. Rather, the study observed that FII did not have much effect on the volatility of the returns of the Indian stock market.

Rao et al. (1999), in his research paper "FIIs and the Indian Stock Market", had tried to analyse the importance and the significance of the flows foreign portfolio investment to India in comparison to other major forms of capital flows. The study also tried to analyse the dynamic relationship between the flows of FII and their changing trends in the Indian capital market. The period selected for the study was from 1990 to 1999. The main aim of the study was to analyse the significance of various forms of foreign portfolio investment along with the study of portfolio of five companies based on USA. The examination of these five US based funds' exposure revealed that there was a high degree of resemblance between the trading patterns of US based funds at BSE and the investment profile of FIIs in the Indian stock market. It was also revealed that the concentration of US based funds in few companies could also lead to a situation where there would be more instability in the base of the Indian stock market. Therefore, it suggested that there should be a proper, effective and efficient regulatory mechanism in the country to control such phenomena. The study also observed that the volatility of the Indian stock market (being already highly volatile) was further enhanced due to the fact that the majority of the FIIs came from only two countries namely USA and United Kingdom as observed by this study.

Kaur et al (2002), in her book titled "Stock Market Volatility in India", studied the extent of volatility of the Indian stock market and its behaviour over different periods and over different stocks. The study examined the effect of a firm's size and FII on stock returns and their volatility. The study also concentrated on the analysis of the presence of 'day of the week effect' in stock returns and volatility. The study found that the volatility was the highest during 1992 and it was followed second and third highest in the years 1990 and 2000 respectively. As per this study, small capitalization companies had exhibited higher volatility than companies with large capitalization. In the last, the study concluded that volatility of the Indian stock market decreased significantly after January 1993, when the FIIs started investing in the Indian economy more heavily.

Pradhan and Narasimhan (2002), in their research titled "Stock Behaviour in India since Liberalization", studied the behaviour of stock for twelve years period spanning from 1999 to 2001. Incidentally, the period of the study coincided with the period when a

large number of changes were introduced in the Indian capital market and the Indian economy was opened up for the foreign investors. The study revealed that there had been many dynamic changes in the Indian stock market in terms of high ups and downs leading to undesirable consequences for the individual as well as for the intuitional investors. This study employed GARCH model to study the volatility phenomena. It concluded that the volatility of the Indian stock market return had gone up during this period. The study stated that this increase could partially be due to the flows of FII in the Indian economy. The study also found that there existed asymmetric volatility in the Indian capital market which showed that stock market returns were affected more by the negative news than the positive news affected them.

Batra et al (2004), in her paper "Stock Return Volatility Patterns in India", recognized the importance of understanding the phenomena of volatility for risk management in an economy like India ; and also analysed the changing patterns of volatility existing in the Indian capital market during the period ranging from 1979 to 2003. Using a recommended methodology, the author characterized the stock market cycles and analysed the amplitude as well as duration of volatility for different phases over the reference period. She used the monthly data on stock returns. The asymmetric GARCH methodology was used for the analysis purpose. She concluded that the period around the balance of payment crisis and around the beginning of economic reforms was the most volatile period in the Indian stock market. Further, the study concluded that FII entry in Indian capital market did not have any direct implication for the stock return volatility.

Coondoo and Mukherjee (2004), in their study titled “Volatility in India”, studied the volatility concept with the help of standard deviation method using daily data of FII, BSE and NSE from 1999 to 2002. For this study, a new method had been employed that defined and examined the dynamic phenomena of volatility. As per the new method, there were three different important aspects relating to volatility, namely its strength, its duration and its persistence. As per the findings of the study, it was concluded that over the time, there had been a good amount of volatility between the returns of the Indian stock market and the flows of FII. Moreover, it was also found that the strength and

duration of the Indian stock market returns' volatility coincidently found to be the same to that of the flows of FII. Moreover, the study also revealed that the strength of volatility of the flows of FII happened to be having positive correlation with the stock market returns as well as the rate of call money. The final finding of the study was that the returns of the Indian stock market and the flows of FII in India had a very high degree of volatility both in terms of extent as well as duration. Additionally, it was found that there was strong evidence on the interrelated volatility between stock returns and FII flows.

Pal et al (2005), in his paper " Volatility in the Stock Market in India and FIIs: A study of the Post Election Crash", discussed the effect of FII on the stock market of India. The study revealed that the influence of foreign investment on BSE Sensex became more noticeable after the general elections in India in 2004. In 2004, under the changed economic scenario, when the uncertain and the unexpected turnaround of FII flows generated a negative perception in the environment, it led to a high degree of instability in the Indian capital Market. At that time, the Sensex witnessed the worst single-day downfall in its history (800 points) on 17th May, 2004 because of the expectation of Central Government at the national level. The over offloading pressure exercised by the Foreign institutional investors immediately after election, just in three months between April to June 2004 made the index to fall by 17 percent. The study further found that FIIs had become a dominating force in the Indian capital market. The study also showed that FIIs had come to possess such a position that they could easily influence the Indian stock market movement in a significant way and thereby, could affect volatility of the Indian stock market.

Pal et al (2006), in his paper "Foreign Portfolio Investment, Stock Market and Economic Development: A Case Study of India", which contained data from 1983 to 2003 basically studied the impact of FPIs on Indian economy in general and industry in particular. The study also analysed the impact of FPIs on the development of Indian economy as a whole. The study observed that in order to maintain the flow of investments by FPIs, the emerging markets required to shape up their policies in such a way that ensured attractive returns for them. The study observed that the restructuring of economic policies increased the costs associated with foreign capital investment in a

developing country like India. Because of this fact, the author investigated whether the benefits brought by FPIs to domestic country were sufficient to justify the costs associated with the promotion of FPIs. Overall, the study evaluated the relative merits and demerits of a stock market based on the financial system in a developing country. The study observed that the beneficial aspects of FPI flows were importantly more dependent upon the assumption of well functioning of stock markets. The study finally concluded that FII flows had brought in lot of volatility and uncertainty in the Indian secondary market which had forced the Indian policy makers to take a large number of fiscal measures to control the same.

Bansal and Pasricha (2009), studied the impact of market opening to FII on the Indian stock market behaviour. As per the study, India opened its economy on 14th September 1992, permitting FIIs to make investment in the Indian equity market along with other investing instruments. The study used the data of Bombay Stock Exchange for both the period i.e. data before the announcement of the policy and the data after the announcement of the policy. As per the study, an empirical investigation was conducted to analyse the fact that whether the opening up of the India economy had any impact on the stock market returns and its volatility measured before the FII policy announcement day; and the volatility measured after the FII policy announcement day. In the post announcement period, the study found that on the one hand, there were found no major changes in the returns of the Indian stock market; on the other hand, it was found that volatility had gone down after the entry of FII in India as claimed by this study.

Mohan and Muneesh (2009), in their study on "Managing the Impossible Trinity: Volatile Capital flows and Indian Monetary Policy", tried to analyse the various contemporary monetary measures taken by Government of India in the external sectors. The period of study was from 2000 to 2008. As per the study, it was revealed that flexibility in ER, availability of sufficient FERs, effective macroeconomic policies, efficient management of debt and healthy development of domestic capital market were collectively needed to give an appropriate response to the volatile flows of FII in emerging market economies. But the availability and the effectiveness of all these factors depended largely upon the economic policies of the government. The study observed that

there were no standardised models available with government which could actually get fitted into any economic model. Finally, the study concluded that the key concern for the EMEs (emerging market economies) had been the volatility which the foreign capital had brought in and had increased the same during the period under study.

Aggarwal et al (2010), in his research paper titled "Stock Return, Volatility and the Global Financial Meltdown: The Behaviour of Indian Stock Market", attempted to analyse the impact of global subprime crisis (originated in 2008 in USA) on the volatility of the Indian capital market. In addition to traditional methods, the modern technique namely Autoregressive Conditional Hetroscedasticity (ARCH) method had been used for the above purpose. The study tried to explore the presence of volatility in the Indian capital market featured with the global financial crisis resulting from the uncertain flows of FII. With an aim to measure the effect of global economic crisis on the Indian stock market, dummy factor like FII data had been fed into the Asymmetric Conditional Hetroscedasticity (E-GARCH). As per both the traditional as well modern methods of analysis, it was concluded that volatility in the Indian stock market had been very high during the global economic crisis period spanning more aggressively from 2008 to 2009. It was further revealed that the volatility had shown signs of subduing only during the post financial crisis period. Finally, it concluded that the effect of the USA financial crisis on the Indian economy in terms of enhanced volatility in the Indian capital market had been far reaching.

Devi, Saravanan and Deo (2010), in their paper titled "FII Expected and Unexpected Flows' Reaction on Stock Market Volatility", attempted to study the reaction of the FII flows (both expected and unexpected flows) on the Indian capital market volatility. The period covered in this was from January 1999 to April 2009. The GARCH model was used to study and analyse the effect of FII flows on the Indian economy. It was observed by the study that the trading of securities by FIIs tended to increase the volatility whereas the net flow of FII seemed to decrease the volatility of the Sensex. Moreover, it was observed by the study that the expected purchase and sale flows did not have any impact on the volatility of the stock return. The fact that the net unexpected FII flows had decreased the volatility of the stock market was a part of FIIs trading strategy

because they did huge purchase trading immediately after the market corrections. In the last, the study concluded that FIIs were found to take position in advance than the domestic FIs on the basis of availability of information that also supported the existence of efficient capital market system.

Sumanjeet et al (2010), in his research paper "Liberalisation of FII in India: Magnitude, Impact Assessment, Policy Initiatives and Issues", tried to study the FII flows and their impact. The paper covered a period from 1992 to 2008. The study observed that over the years, FII had grown substantially. During early 1990s, there were almost nil FIIs existing in the Indian economy and in the year 2008, they were big market foreign players and the market shakers also. Over the years, there had been many positive developments in the Indian economy like strong economic fundamentals, periodic removal of barriers and so on, which had attracted the FIIs. And subsequently, FIIs had also used India as one of their preferred investment destinations. Presently, though FIIs had become key players in the Indian stock market, but at the same time, they had enhanced the volatility in the stock market and had made the investment environment more uncertain and daisy. The paper concluded that in the time to come, FIIs were going to be the creators of more volatility in the Indian stock market. In the last, the study concluded that large flows of FII was a major challenge also and there was a great need to manage the same.

Goel and Gupta (2011), in their study titled "Impact of Globalisation on Stock Market Development in India", tried to study the effect of globalisation on the various developments happening in Indian stock market. The study observed that capital market reforms which were started in post 1990s had contributed largely in the development of the stock markets in India. This study also found that there had been a significant improvement in terms of more economic development in the economy after liberalisation. Moreover, introduction of new system like on line trading system, starting of depository systems, beginning of financial derivatives and setting up of National Securities Clearing Corporation (NSCC) had made big contribution in the development of the Indian stock market. All important indicators like stock market capitalization ratio, value traded ratio, and turnover ratios had gone up subsequently as observed by the study. The study further stated that on the one hand, there had been good increase in the important ratios, on the

other hand, the volatility had gone down. There was also clear evidence as stated by the study that economy was able to absorb such developments and showed further signs of good potential. Moreover, the study concluded that the entry of FII in India after the liberalisation had not affected the stock return volatility directly. Rather volatility in the stock prices had declined on annual basis. But it had certainly had a substantial and positive impact on the size and liquidity of the stock market as observed by this study.

Goudarzi, Hojatallah and Ramanaryanan (2010), in their study named "Empirical Analysis of the Impact of FII on the Indian Stock Market Volatility during Financial Crisis", undertook the causal and co integration analysis between flows of FII and BSE 500 index of the Indian stock market. The period under consideration was taken from 2000 to 2009. The study observed that during 2008, under the pressure of US subprime crisis, approximately US $ 12 billion flew away from the Indian capital market which brought down the Indian indices almost by 60 %. As per the study, it was a great disaster which shocked the whole world as well as Indian capital market in particular. The study further concluded that BSE 500 index and FII flows were not only found to be co-integrated but there was also found a bi-directional causality between the two.

Arya and Purohit (2012), in their research paper titled "An Analytical Research on FII in India", tried to study the impact of FII flows on the Indian capital market's returns and volatility. The study included the data from 1994 to 2010. The study observed that in the post 1990s era, there had been a lot of developments in the Indian economy. On the one hand there had been lot of dynamism in the stock market in terms of huge investment from diversified entities like FIIs, DFIs, mutual fund and so on; and on the other hand, Sensex had shown its highest ever peak and lowest ever sudden falls. The study observed that though there had been a reasonable decline in the stock market return, but the stock market volatility had gown down substantially. On the one hand, a strong correlation was found between FII flows and Sensex, nifty, market capitalization and market turnover; a low correlation was found between FII flows and stock market return as well as stock market volatility on the other. The study concluded that it could be inferred from the same that there were many other factors which had happened to affect the volatility of the Indian stock market returns over a span of time.

Jain, Meena and Mathur (2012), in their research study titled “Impact of FII on Stock Market with Special Reference to BSE: A Study of Last One Decade”, attempted to examine the contribution of FII in the Indian stock market with special reference to the sensitivity index. The study investigated the patterns of FII behaviour during a decade ranging from 2001 to 2010. It also tried to study the degree of volatility affecting Sensex because of the flows of FII. The data used for this analysis had been taken from the official sites of BSE. Karl Pearson’ Coefficient of correlation test was used to study the correlation. The study concluded that FII had a great impact on Sensex. Further, it was also witnessed that the Sensex had gone up due to the large inflows of FII and it had gone down when there were negative FII flows. This showed that FII had caused volatility in the stock return at least partially if not fully as observed by this study.

Johri, Sharma and Acharya (2012), in their research study titled “A Study of FII flows’ Patterns in Context to Indian Stock Market and Its Impact on Stock Market Returns”, attempted to investigate the effect of flows of FII on Indian capital market. The period selected for this study ranged from 2000 to 2010. It concluded that FII flows had a great impact on the volatility of the Indian stock market particularly during the crisis period of 2008 when BSE had gone down by 52.45 %.

Loomba et al (2012), undertook a research study on the title “Does FII Impact Volatility of Indian Stock Market”? The study was undertaken using daily data from January 2001 to December 2011.The study stated that Indian capital market had come a long way in the last ten years and this had brought the Indian capital market at par with some of the developed countries of the world. As per the study, one of the important features of developed country had been the increasing presence of FII in terms of large investment in those countries. This phenomenon had also come to define the Indian economy over the last ten years. The paper further tried to investigate whether the FIIs which were defining Indian economy had come to dominate it too or not. The research concluded that FIIs were the major strong forces driving the Indian Stock Market. And the study observed that this fact had been supported by many crashes of BSE Sensex accompanied by FIIs turning the net sellers. This study finally concluded that the role of FII flows had been very significant in affecting the Indian stock market volatility.

Rajput and Chopra (2012), in their study titled “FII and Its Impact on Stock Market: A Study on Lead-Lag and Volatility Spill over”, examined the information spill-over and volatility spill-over relationship for Indian stock market. The period of study was from 1992 to 2011. Various statistical tools like VECM, Variance De-composition Analysis, Granger causality, Impulse Response Analysis and (ARCH) or (GARCH) had been used to study the causal relationship between the variables under study. The study had also attempted to estimate the volatility in the returns of the Indian equity market. The study observed that over the last few years, as India liberalised its economy and introduced many financial sector reforms, it had increased the volatility of the Indian stock market. In the last, it concluded that there was bidirectional volatility spill-over, persistence and clustering existed between the variables.

Verma et al (2012), in his study titled “Stock Return, Volatility and the Global Financial Meltdown: The Behaviour of Indian Stock Market”, attempted to analyse the effect of U.S sub-prime crisis (2008) on the volatility of the Indian secondary market. In order to achieve this aim, along with other traditional techniques, Autoregressive Conditional Hetroscedasticity model (ARCH) had been adopted to study the volatility impact due to US subprime crisis on the Indian stock market. As per the traditional as well as modern techniques, it was concluded that the volatility in the Indian stock market had been quite high during the financial crisis period which ranged roughly from 2008 to 2009. It was further observed that the returns which were lowest during the crisis period went up later on and during the post crisis period, they soared very high. In nut shell, the study concluded that the impact of U.S financial subprime crisis had been quite significant on the volatility of the Indian stock market returns. After going through all these empirical studies, it has been found that various studies have focussed on few and limited dimensions relating to FII. In the light of this scenario, the present study has been undertaken with a focus on many dimensions relating to FII like FII flows (its magnitude, trends and determinants), their relationship study, analysis of the impact of FII flows on the volatility of the Indian stock market returns and their forecasting for future period.

CHAPTER – 3

TRENDS, MAGNITUDE AND COMPOSITION OF FII IN INDIA

3.1 FIIs IN INDIA

The present chapter discusses the trends, magnitude and composition of FII in India from 2000 to 2012. The other important dimensions related to FII covered in this chapter include prominent FIIs, total FIIs registered with SEBI, FII flows into the Indian equity and debt market, assets under various custodians including FIIs, role of FIIs in the growth and liquidity of the Indian stock market, FIIs contribution in market turnover and capitalization and its contribution in the Indian gross domestic product. It has been empirically experienced, ever since India opened its economy in 1992, FIIs have been investing in the Indian capital market in great abundance. FII has become one of the main channels for the foreign players to make investment in many emerging countries like India. However, for being eligible to deal and trade in the Indian capital market, all the FIIs have to get themselves registered with SEBI as per its provisions.

The full details on the registration record of FIIs have been provided in the Table 3.1. As per this table, the FIIs registered with SEBI in India have been increasing during the last one decade. This shows that amongst the emerging market economies (EMEs) and many other developed countries, Indian economy has become one of the preferred choices for FIIs to make investment. As per the table, there were 527 FIIs registered with SEBI in 2000-01. Their number came down to 490 in the subsequent year i.e. 2001-02. One of the possible reason responsible accounting for this might be the non-renewal of existing registration by some of these FIIs who were having multiple registrations with SEBI. In 2002-03, the FIIs number got increased to the total number of 502. With the enhancing confidence of FIIs in the Indian economy, their number kept on increasing in the subsequent years like it rose to 540 in the year 2003-04 and it further went up to 685 in the year 2004-05. This showed that there was a net increase of 26.85 % in the total FIIs registered with SEBI in India in 2004-05 as compared to 2003-04.This increase was one of the highest increase in FIIs registered number except the increase of 28.75 % in the year 2005-06 and 32.29 % in the year 2007-08.

Table 3.1 : FIIs registered with SEBI

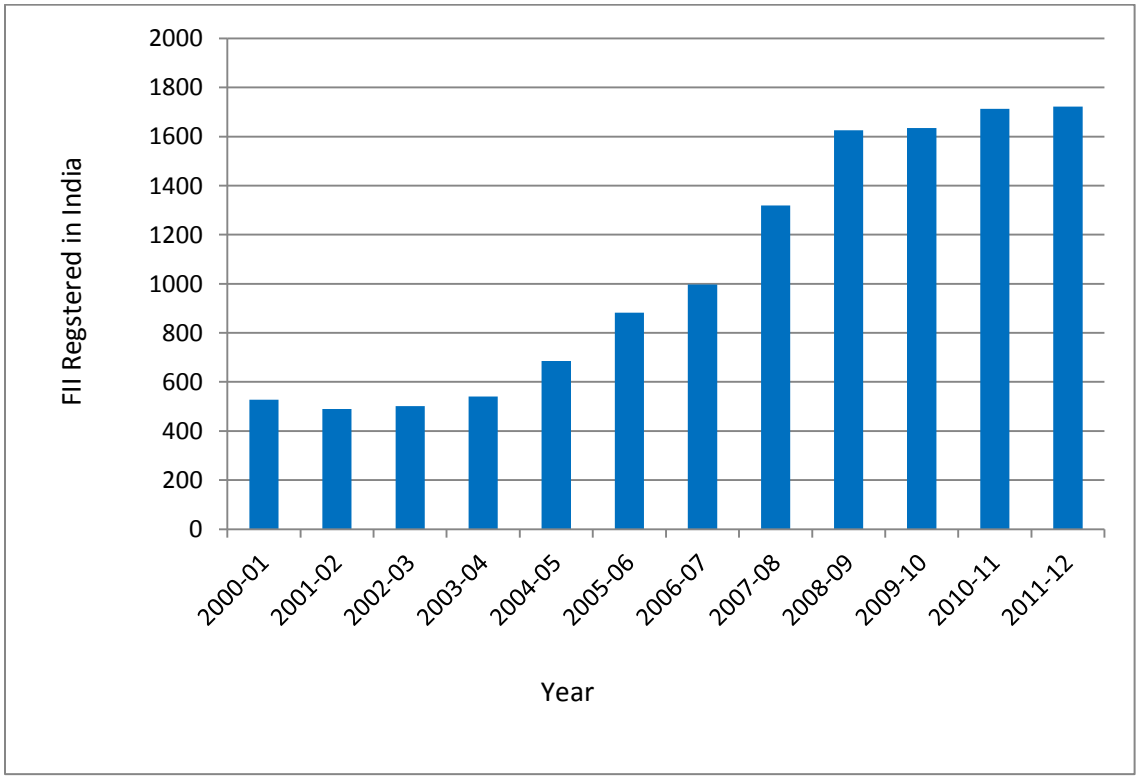
Year	Total FIIs at the end of March	Net Additions of FIIs during the year	% Growth of Total FIIs registered
2000-01	527	21	-
2001-02	490	-37	- 7.0
2002-03	502	12	2.44
2003-04	540	38	7.56
2004-05	685	145	26.85
2005-06	882	197	28.75
2006-07	997	115	13.03
2007-08	1319	322	32.29
2008-09	1635	316	23.95
2009-10	1713	78	4.77
2010-11	1722	9	0.52
2011-12	1765	43	2.49
CAGR	-	-	11.61

Source: SEBI Annual Reports

As observed from the table, the story did not end here with FIIs touching more heights in terms of their increasing numbers registered with SEBI. The figure of FIIs registration with SEBI stood at 882 in 2005-06 *(SEBI Annual Reports, 2012).* This figure went up to 997 in 2006-07. In 2007-08, FIIs number further went to 1319 with additional registration of new FIIs with a record number of 322. This was the highest ever number of registration by FIIs in a single financial year so far. The FIIs number further got increased to 1635 in 2008-09. However in 2009, there was a global pessimistic environment featured by the subprime crisis. The after-effects of this global financial crisis were also felt in India in terms of less number of FIIs going for registration with SEBI. In spite of the fact that in 2009, the Indian equity market enjoyed a huge gain of 80

%, the total number of additional FIIs registered with SEBI was not substantial. This figure stood at 78 only and the total number of FIIs registration stood at 1713 in that year. Though the total number of FIIs registered with SEBI was the highest since their entry in India in 1992, there was no much enthusiasm on the part of additional FIIs going for more registration with SEBI in India. This behaviour on the part of FIIs supported the fact that FIIs were 'nobody's friend' or 'everybody's friend'. As the major purpose of FII was to get the maximum possible yields, they always preferred to change their investment destinations and were least bothered about what would have happened to that economy or its fundamentals or its investors who had shown good interest in the capital market or who had put their huge investment at the mercy of the stock market having been made more volatile by the FIIs.

Figure 3.1 : FIIs Registered with SEBI in India



Source: SEBI Annual Reports.

Further, in the year 2010-11, there was no much change found in the approach of FIIs and they continued to show atleast lukewarm interest in the Indian economy. During

this year, their registered number with SEBI got increased to 1722 with additional registration of 9 only. In 2011-12, this figure further got increased to 1765 with an additional increase of 43 FIIs. Thus, within a span of twelve years, the total number of FIIs have gone up from 527 in 2000 to 1765 in 2012. i.e. an increase of additional 1275 FIIs registered with SEBI in India. This tremendous growth of FIIs has reflected an increase of 235 when measured in terms of net percentage. All this has also been shown by the Figure 3.1. Thus, from this empirical data, it has been shown that how India has emerged as one of the most preferred investment destination for FIIs and how they have chosen Indian economy as a potential economic market for their investment.

In addition to the net additions in FIIs' registration and the percentage growth in FIIs registered data every year, it is also important to study the Cumulative Annual Growth Rate (CAGR) of FIIs' registration for the twelve years collectively. CAGR has been calculated for studying the annualized growth rate which the FIIs have clocked over the last twelve years ranging from 2000 to 2012. The figure of CAGR i.e. 11.61 % showed, though the growth rate of FIIs registration has existed between the range of – 7 % to 32.29 %, the FIIs number have maintained an average annual growth rate of 11.61 % during this twelve years period. In other words, it showed that there has been an average annualized 11.61 % increase in the total number of FIIs registered with SEBI over the last twelve years ranging from 2000 to 2012.

Hence, it is safely concluded that there has been more than 10 % annualized growth of FIIs registered with SEBI which not only shows a reasonably good growth in FIIs registered numbers, but also reflects a positive perception in the mind set of FIIs about the potential of the Indian economy. This is the reason for the fact that they have been registering in great numbers with SEBI for the last many years. This further cements our belief that if Indian economy shows better economic prospects and strong economic fundamentals in the time to come, the CAGR may further grow which will make the Indian economy as one of the most preferred choice for FIIs.

One of the other important observations attached with this development is that it is not only important to study and analyse the trends of FIIs' registration; it also becomes important to analyse the countries of their origin. It has been found by the study that FII

has not been flowing only from the traditional countries namely USA, UK, Malaysia, Singapore, Hong Kong and Luxemburg etc; the FII has been flowing in the Indian capital market from many unconventional countries like Japan, German, Ireland, Netherland, Denmark and France etc. This development is a reflection of the fact that the FIIs across various countries have been showing great interest in the Indian capital market along with their trust on the long term growth prospects of the Indian economy. More importantly, one of the major reasons for their preference for India is the fact that they are more than satisfied with the congenial investment environment and yield offered by the Indian economy.

Table 3.2 : Prominent FIIs Registered with SEBI in India

Name of FIIs	Companies where FII invested	Value in Rs. Crore (as on 31 March, 2012)
Deutsche Group	84	35579
Citigroup	184	23890
HSBS Global Investment	126	18074
Morgan Stanley and Co. International	154	16638
Merrill Lynch Capital Market	142	15130
CLSA Asia-Pacific	42	9146
Goldman Sachs Investment Mauritius	104	7307
JP Morgan	20	6835
UBS Securities Asia Ltd**	88	5847
Bear Stearns Asset Management Ltd.	86	2490
ABN Amro NV	45	1580
Lehman Brothers	14	439

Source: Capital line, **with its subsidiary Swiss Finance Corp. (Mauritius) Ltd.

The Table 3.2 shows some of the major FIIs registered with SEBI in India. This table also contains the number of companies in which they have invested their funds along with the total investment value. The details of some of these major FIIs operating in India are given below:

- **Deutsch Group**

This is a part of Deutsch Assets Management Group. The company was established in 1956 in Frankfurt Main. There is approximately EURO 267 billion under the asset management of this company worldwide. This makes it one of the leading companies amongst the top 10 investment companies in this area. In Europe also, it is one of the main companies dealing in mutual funds. And at present, it is managing a business of approximately EURO 173 billion alone there. In Germany too, it is managing a business of around of EURO 147 billion (representing around 22 % of the total fund market size) and this has brought the company at number one position in that country. The very specialized service expertise of this company has differentiated it substantially from many of its competitors. The span of this company's activities has spread across the major countries of Europe. In America, this company is managed under the entity of DWS Scudder, where it manages a corpus of EURO 86 billion. It was in 2006 when the first fund and DWS brand was introduced in India and Singapore under its scheme of expansion in Asia – Pacific continent. Gradually more funds have been introduced in this region of Asia-Pacific *(Phull, 2014).*

- **Citigroup**

This group was formed in the year 1998. With the beginning of this group, a new model of providing financial services was started to fulfil the financial needs of the customers. As there has been continuous growth and development of this group, one ground reality that came to be accepted amongst the corporate sector was the fact that even complex business structure could also have a successful survival. Citigroup has more than 2 lakhs employees; and it has business in more than 100 countries *(Phull, 2014).*The global presence and successful survival of this group featured by high global brand value and diversified culture has ensured an undisputed journey of this group so far.

- **HSBS Global Investment**

It is one of the world's largest and most popular fund management groups. This group has created, expanded and consolidated a very good brand image and goodwill amongst various types of investors like big corporate houses, governments, finance houses, insurance companies and so on for having been able to offer a very high yield on its investment on a continuous basis. In India, it offers fund management services for institutional as well as retail investors. Their array of products include equity income funds and debt funds *(Phull, 2014).*

- **Morgan Stanley and Co. International**

This group has been giving its expertise in the portfolio management, credit servicing, financial services, corporate restructuring etc. since a long time back. It has become a pioneer in this area and has its presence in more than 27 countries. With more than 600 offices across the globe, it manages a corpus of US $ 421 billion. The assets of the group are managed by Morgan Stanley Investment Management. This group had started its operation in India in 1989. The first fund introduced by the Morgan Group in India in 1994 was India Magnum Fund *(Phull, 2014).* Subsequently, it launched Morgan Stanley Growth fund which has become one of the largest funds floated by the private company with investing interest in the equities of the companies.

- **DSP Merrill Lynch Capital Market Fund**

Floated by DSP Merrill Lynch Fund, this is also one of the largest capital market funds in the world. DSP Merrill Lynch Ltd. is one of the major players which provide financial services across many countries of the world. Merrill Lynch has 90 % share in DSP Merrill Lynch Ltd. At the time of its inception, the name of DSP Merrill Lynch was DSO Financial Consultant Ltd. The DSP Merrill Lynch has basically emerged out of its original company named DS Purbhoodas and Securities which has had long experience ranging for more than 150 years in this field. This group has become one of the largest and the most popular companies of the world which provides its services in the capital market operations, wealth management and other advisory operations etc. Now this group

has presence in more than 40 countries and total wealth managed by this group touches around US $ 1.5 trillion *(Phull, 2014).*

3.2 COUNTRY WISE CLASSIFICATION OF FIIs

Over the years, it has been experienced that FII in Indian economy has not been flowing from a few selected countries, rather the FIIs registered with SEBI have hailed from many diversified countries. The major countries from where these FIIs have hailed include USA, UK, Luxemburg, Mauritius, Canada, Hong Kong, Singapore, Australia, Ireland, Netherland, South Korea, Taiwan, Denmark, Switzerland, France, Malaysia, Sweden, Cayman Island, Channel Island, Norway, Austria, UAE, German and many other countries.

Table 3.3 : Country wise Classification of FIIs

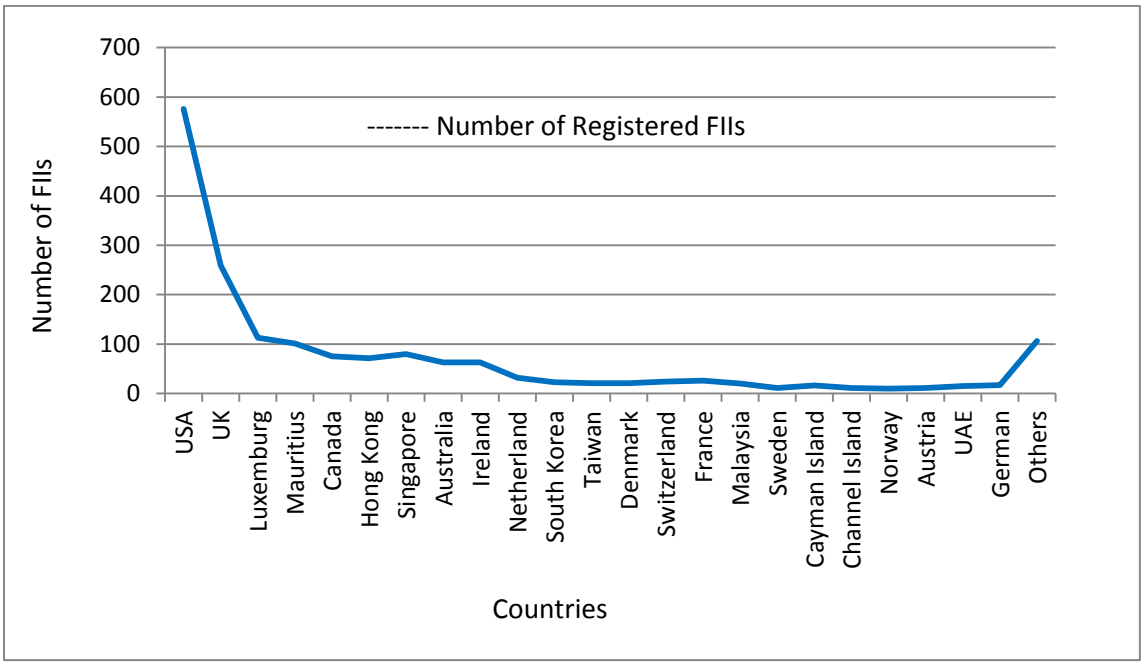
Source Country	Number of Registered FIIs as on 31 March, 2012
USA	576
UK	259
Luxemburg	113
Mauritius	101
Canada	75
Hong Kong	71
Singapore	80
Australia	63
Ireland	63
Netherland	32
South Korea	23
Taiwan	21
Denmark	21
Switzerland	24

Source Country	Number of Registered FIIs as on 31 March, 2012
France	26
Malaysia	20
Sweden	11
Cayman Island	16
Channel Island	11
Norway	10
Austria	11
UAE	15
German	17
Other European, Asian and African Countries	106
Total	1765

Source: www.sebi.gov.in.

It has been found that the FIIs from these countries have been finding India as an attractive investment destination. The Table 3.3 shows the country wise classification of FIIs during 2011-12. As per this table, USA has emerged as one of the major investors in India through this route of investment. Almost 32 % of the total FIIs investing into India have hailed from USA which shows the comparative potential of Indian Economy as a whole in terms of better returns. The figure of total FIIs hailed from USA stands at 576 in 2012. As per the table, it is also clear that there are sufficiently large numbers of FIIs from UK. There are 259 FIIs from UK. which constitute around 14 % of the total FIIs registered in India in the year 2012. FIIs from other major countries like Luxemburg, Mauritius, Canada, Hong Kong and Singapore have also been in good numbers as shown by this table. The total number of FIIs from Canada stands at 75, from Luxemburg it stands at 113 and from Singapore it stands at 80. The same data has been graphically shown by the Figure 3.2.

Figure 3.2 : Country wise Classification of FIIs



Source: www.sebi.gov.in

In addition to the dimensions covered above, it has also been observed that there has been a great thrust of FIIs from many other countries too. For example, FIIs from many Asian countries like Malaysia and Hong Kong have also made good investment in India. The main reason for this big investment from these countries has been "The Tax Haven" benefits associated with these countries. It is also important to note, while investing from these countries, there are many other factors which the FIIs take into consideration while choosing the root of country through which they make investment. Some of the main factors amongst these include the overall goodwill of the country (county rating), political environment in terms of its stability, tax benefits available and low financial transactions costs and so on. In addition to this, there are few countries like Singapore, Mauritius and Cyprus with which India has signed Double Taxation Agreement (DTA). These countries with which this agreement has been signed are called 'The Tax Haven' countries. Due to the major tax benefits offered by these countries, huge foreign investments have been coming to India from these potentially high investment countries of the world. In addition to this, it has also been observed that a large number of

other Asian countries have also been showing good interest in the Indian economy. Some of these counties include Taiwan, UAE and South Korea. For example, from Taiwan alone 21 FIIs have got registered, from UAE 15 FIIs have come and from South Korea, 23 FIIs have got registered in India. On the basis of this encouraging empirical experience, it is hoped that in the time to come, a large number of FIIs from many other countries will also make India as one of their major investment hub.

3.3 COMPOSITION OF FII FLOWS

In February 1992, the Government of India announced a policy under which Indian companies were permitted to raise funds from the international financial market with the help of various financial instruments like American Depository Receipts, Global Depository Receipts, Foreign Currency Convertible Bonds (FCCBs) and External Commercial Borrowings (ECBs). Then in the later part of the year 1992, Indian capital market was further opened for the foreign players whereby the FIIs were permitted to participate directly in the Indian capital market in terms of direct trading. In other words, FIIs were permitted to buy and sell equity shares and debentures directly from the Indian capital market without any major legal hiccups.

Subsequently, the FIIs have also been authorized to make investment in a large variety of securities traded on the primary as well as the secondary market of India. Presently the Foreign Portfolio Investment (FPI) includes the investment in the form of FII in equity and debt-oriented instruments (both corporate and government securities), Global Depository Receipts and American Depository Receipts issued by Indian companies abroad and floating of Off Shore Funds and other investments.

The composition of foreign portfolio investment in India has been shown in the Table 3.4. As per this table, the Foreign Portfolio Investment (FPI) from all these sources namely FII, GDRs/ADRs, and Off shore funds has been flowing in India with different proportions. Further, the table also shows that there have been diversified trends in the flows of FPI. Among all these sources of FPI, FII has emerged as one of the main sources of capital flows. The table depicts that the FII share in the total FPI which was 66.92 % in the year 2000-01, went up to 74.47 % in 2001-02. It is also disclosed by this table that the

share of FII further increased to 95.97 % in 2003-04 and 93.25 % in 2004-05. This shows that in the first two years since the beginning of the decade, the share of FIIs in the FPI as compared to other sources of finance like ADRs/GDRs and Offshore funds has been quite good and impressive showing the dominance of FII share in the total Foreign Portfolio Investment (FPI).

Table 3.4 : Composition of Foreign Portfolio Investment in India (in US $ million)

Year	FII	GDRs/ADRs	Offshore Fund and Others	Total FPI	% Contribution of FII to Total FPI Flows
2000-01	1847	831	82	2760	66.92
2001-02	1505	477	39	2021	74.47
2002-03	377	600	2	979	38.51
2003-04	10918	459	Nil	11377	95.97
2004-05	8686	613	16	9315	93.25
2005-06	9926	2552	14	12492	79.46
2006-07	3226	3776	56	7003	46.05
2007-08	20327	6645	163	29395	69.15
2008-09	-15017	1162	-177	-14032	-107.01
2009-10	29049	3328	20	32397	89.66
2010-11	29421	2049	-1179	30291	97.12
2011-12	16812	597	-239	17170	97.91

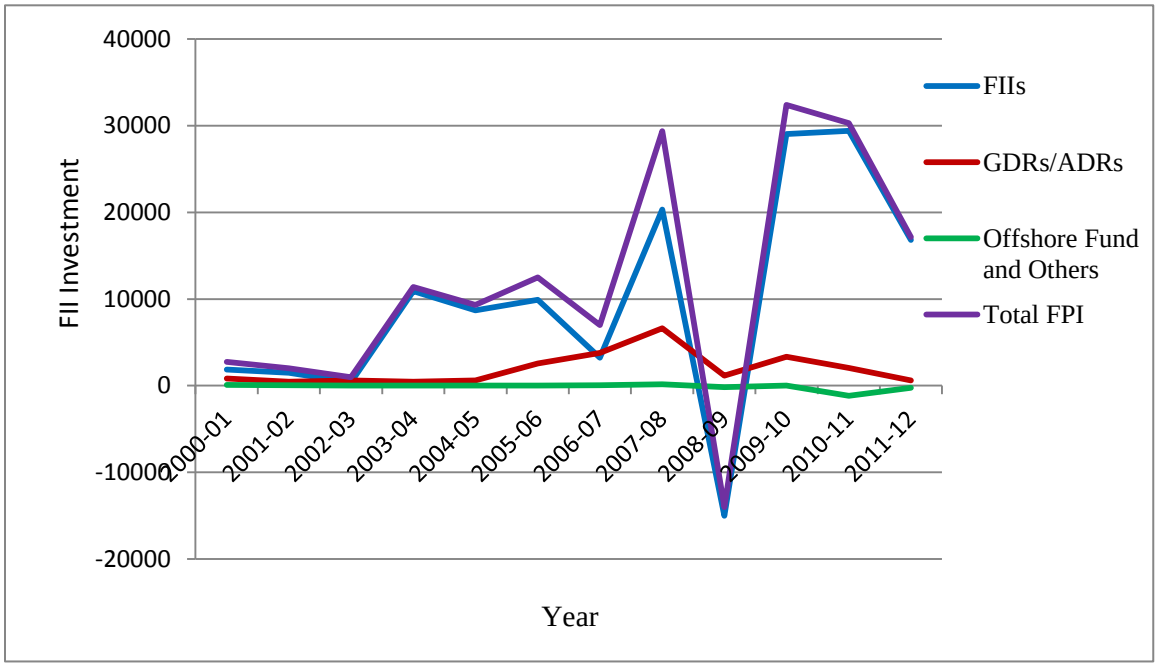
Source: Various Publications of RBI and Hand Book of Statistics on Indian Economy.

As per the table, it is further observed that there were only two years namely 2002-03 and 2006-07 when FII share as a percentage to total FPI came down to below 50 %. It is observed that it was in 2002-03 when FII share in total FPI came down to 38.51 % and then it was 2006-07 when the same came down to 46.05 %. Moreover,

unfortunately, in the year 2008-09, FII flows turned to be negative. This was a major hit as this was the first time when FPI investment in India happened to be negative since the liberalization of Indian economy in 1990s. This negative development was the result of the fact that FIIs pulled back around US $ 5.5 billion from the Indian capital market during this year due to certain negative economic developments happening across the globe including US subprime crisis.

However during 2009-10, the concept of 'Economy Reading' seems to have applied to India. According to this concept, FIIs make good investment in an economy with high potential growth. The same has been observed to be the case with the Indian economy. For example, though in 2009, Indian economy showed substantial features of stagnation with economic growth touching down to 6.5 %, industrial growth also getting decelerated down to 2.8 % and wholesale inflation mounting up to 8.45 % (*Economic Outlook 2010-11),* FPI inflows were found to be as high as US $ 32397 million during that year only.

Figure 3.3 : Composition of Foreign Portfolio Investment in India (in US $ million)



Source: Various Publications of RBI Hand Book of Statistics on Indian Economy.

Thus consequently, in the year 2009, Indian economy regained the trust of FIIs and huge investments were made by them in the country. It was found that FPI, thereafter, not only became positive but the total amount of their investments also got substantially enlarged in the coming years. More importantly, the share of FII in FPI also became larger in the subsequent years. As per the Table 3.4, the FII share in FPI which was 89.66 % in 2009-10 went up to 97.12 % in 2010-11. Furthermore, in 2011-12 when the GDP of the Indian economy hovered between 4.5 % to 6 %, industrial production growth went down to 0.5 %, Indian economy managed to attract the total FPI worth US $17171 million alone during that year. It is also worth noticeable that FII alone in that year constituted around 97.91 % of total FPI. All this data have been further supported and graphically presented by the Figure 3.3.

Thus based on the above observations, it is safely concluded that there has been an overall increase in the FII contribution in FPI. FII contribution which was just 66.92 % in 2000-01 got increased to 97.91 % in 2011-12. This showed an overall increase of 46.30 % in FII's contribution in FPI over a span of twelve years. This also reflects a back seating for GDRs/ADRs and Off shore funds raised by Indian companies from abroad. Thus, it has been observed that there has been total dominance of FII over other ingredients of FPI during the last twelve years.

In order to examine whether the contribution of FII in the total Foreign Portfolio Investment is significant or not, **the t test** has been applied. The t –test has been applied with the null hypothesis that percentage contribution of FII to total FPI is not significant; and with the alternative hypothesis that percentage contribution of FII to total FPI is significant. As per the results obtained, the t (calculated) statistics value (1.924509412) has been found more than the t critical value (1.795884814), and moreover, the tail t value (0.0499801335) has been found less than 0.05 or 5 %. Hence, the alternative hypothesis is accepted at 5 % level of significance which states that the percentage contribution of FII in the total foreign portfolio investment is significant. Thus, it is safely concluded that within the ambit of foreign portfolio investment, the most reckoning force that has dominated other components of FPI has been FII.

3.4 TRENDS OF FII IN INDIA

In addition to the study of FPI composition, it is also important to study the trends of FII in India individually. The Table 3.5 presents the net investment and cumulative net investment by FIIs in the Indian economy from 2000-01 to 2011-12.

Table 3.5 : Trends of FII in India

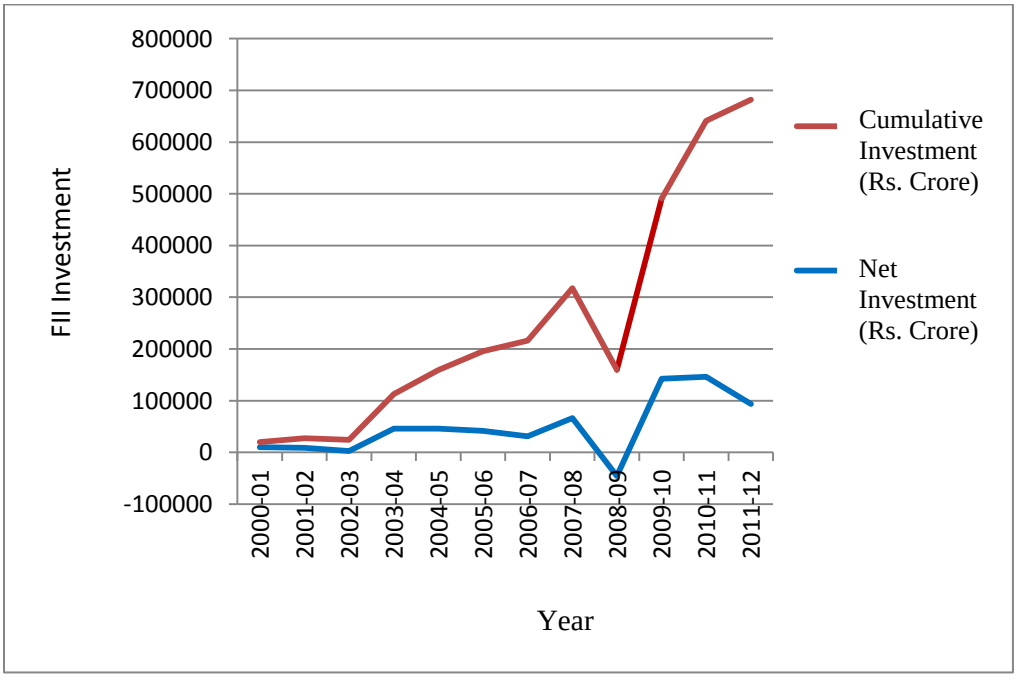
Year	Gross Purchase (a) (Rs. Crore)	Gross Sales (b) (Rs.Crore)	Net Investment (a-b)	Net Increase or Decrease	% Increase or decrease in FII Inflow	Cumulative Net Investment (Rs. Crore)
2000-01	74051	64118	9933	------	-	9933
2001-02	5071	41398	8763	-1170	-11	18696
2002-03	4062	44372	2689	-6074	-69	21385
2003-04	144855	99091	45764	43075	1601	67149
2004-05	216951	171071	45880	116	0.25	113029
2005-06	436976	305509	41467	- 4413	- 9.61	154496
2006-07	520506	489665	30841	-10626	-25	185337
2007-08	948018	881839	66179	35698	115	251516
2008-09	614576	660386	-45811	-20368	-30	205705
2009-10	846438	703780	142658	96847	211	348363
2010-11	99,599	846161	146438	3780	0.26	494801
2011-12	921285	827562	93725	-52713	-35	588526
CAGR	-	-	-	-	22.63	

Source: Calculated on the basis of data from Handbook of Statistics on Indian Securities Market by SEBI and RBI, SEBI Annual reports 2011-12.

It has been empirically evidenced that right from 1992 to 2000, Indian economy has witnessed many domestic as well as global events which have affected the flows of FII in India. Be it the South East Asian Crisis in 1997, the conduct of nuclear tests by India in 1998 and subsequent economic sanctions on it by many industrialized countries including USA, Japan and others, these events have made a remarkable impact on the flows of FII in India. The initial ten years i.e. 1991-2000 was the period when Indian economy tried to win the trust of FIIs. And India has also been able to succeed to a great extent in that respect. In the continuation of those efforts, from 2000 onwards which signalled the beginning of new decade, India has witnessed huge FII flows. Further it has also been experienced that from 2000 onwards, FIIs have started showing more positive interest and have made good investments in the Indian economy.

As per the Table 3.5, the net investment by FIIs was Rs. 9933 crore in the year 2000-01. In the next year, FIIs also made good investment to the tone of Rs. 8763 crore. Though, it was comparatively less as compared to last year, but overall it was found satisfactory.

Figure 3.4 : Trends of FII in India



Source: SEBI Annual reports 2011-12.

However, the economy got a setback in the next year i.e. 2002-03 when the net FII went down to Rs 2689 crore. This showed a decline of Rs. 6074 crore in FII and the decrease was record at 69%. This was a major negative hit for the policy makers. It was also found that this decreasing trend of FII during this period was mainly due to the existence of various concerning factors like hardening of global oil price, weakening of rupee value (Rs. 43.61/$ – *RBI report 2004*) and perceived economic slowdown of the Indian economy. Further, the terrorist attack in USA also created a negative environment worldwide and added fuel to the fire in terms of creating an unhealthy global investment environment. Unfortunately, it was also felt that the majority of the reasons responsible for the withdrawal of funds by FIIs from the Indian economy were beyond the control of market regulator i.e. SEBI.

As per the Table 3.5, it is observed that the year 2003-04 was found to be a very good year in terms of huge investment by FIIs. FIIs during that year broke all the past records with their net investment of Rs.45764 crore as compared to Rs. 2689 crore in 2002-03. This showed that the net investments went up with additional investment of Rs. 43075 and this increase was recorded at 1601%. The major reasons which accounted for such a wonderful capital inflows were the robust economic growth (8.5 %) by Indian economy in that year along with improved corporate results (57.84 % growth rate in the net profits experienced by the Indian corporate sector in the year 2003-04 which was the second highest during the last nine years -*Indian Economy Report, NSE, 2005).* All this, as analysed, led to a highly positive response from FIIs during 2003-04 on the one hand; and on the other hand, BSE touched 6250 points peak in the early part of 2004.

Keeping a continued trend, in 2004-05, strong macro economic outlook, encouraging corporate results and buoyancy in the stock market ensured sustained portfolio investments by the FIIs to the tune of Rs. 45880 crore in that year. This was found to be a little more as compared to the last year figure of Rs. 45764 crore. However, in the year 2005-06, unwillingly there were many economic developments which created an overall negative global economic environment across the countries. Some of these developments included unexpected increase in the interest rates, rising trends in the global oil prices and the overall bearish trends in the global stock markets. The final

result of these developments was that the net FII flows during this year came down to Rs. 41467 crore. This decrease was found to be 9.67 % down as compared to the last year. During 2006-07, the same negative global environment continued to prevail and global developments like melt down in the global commodity market and the equity market overshadowed the foreign investment environment. The result of this negative scenario was felt by the Indian economy in terms of less investment by FIIs to the tune of Rs. 30841 crore in that year.

The above global negative scenario as observed from the table could not continue for a long time. The year 2007-08 proved to be a turning point in the Indian stock market. During July 2007, Sensex touched the level of 15000 points. In September 2008, it further touched the level of 16000 point and surprisingly within the same month, it reached 17000 points figure. On 9th October 2008, it touched the level of 18000 points. More surprisingly, on 15th October 2008, it touched 19000 points, and finally on 29th October 2008, it broke all the previous records and touched the highest ever level of 20000 points. This year proved to be a mile stone in the history of the Indian stock market with FIIs making net investment to the tune of Rs. 66179 crore which showed an increase of 115 % as compared to the last year.

Unfortunately, the year 2008-09 proved to be exactly the opposite. This year was the year of global turmoil *(Sumanjeet, 2010).* USA faced the problem of subprime crisis which was felt around the world including India. In India, the FIIs became and remained net sellers throughout the year 2008 due to many underlying reasons. Some of these reasons included the fact that the US banking polices and system got failed and the subsequent negative bearish stock market trends overshadowed the global capital market environment. In addition to this, in the very beginning of that year, the oil prices zoomed up substantially and the heat of the same was felt by almost all the countries of the world including India. This also became the probable reasons for various other ailments of the Indian economy like unexpected increase in the trade deficit, depreciation and volatility in the Indian rupee value, high inflationary trends, burgeoning subsidies amount, uncontrolled fiscal deficit and thereby less economic growth.

It was observed in the year 2008-09 that due to huge withdrawal of money by FIIs from the Indian stock market, Sensex plunged more than 55 % from the record high points which it had touched earlier. During this year only, FIIs withdrew a stunning gross amount of Rs. 66386 crore. And the net investment to the tone of Rs. 45811 crore was found to be in negative. This meant that FIIs whose net investment had always been positive for the last more than eight years was found to be negative.

Table 3.6 : Shareholding Patterns of FII in Companies listed on NSE

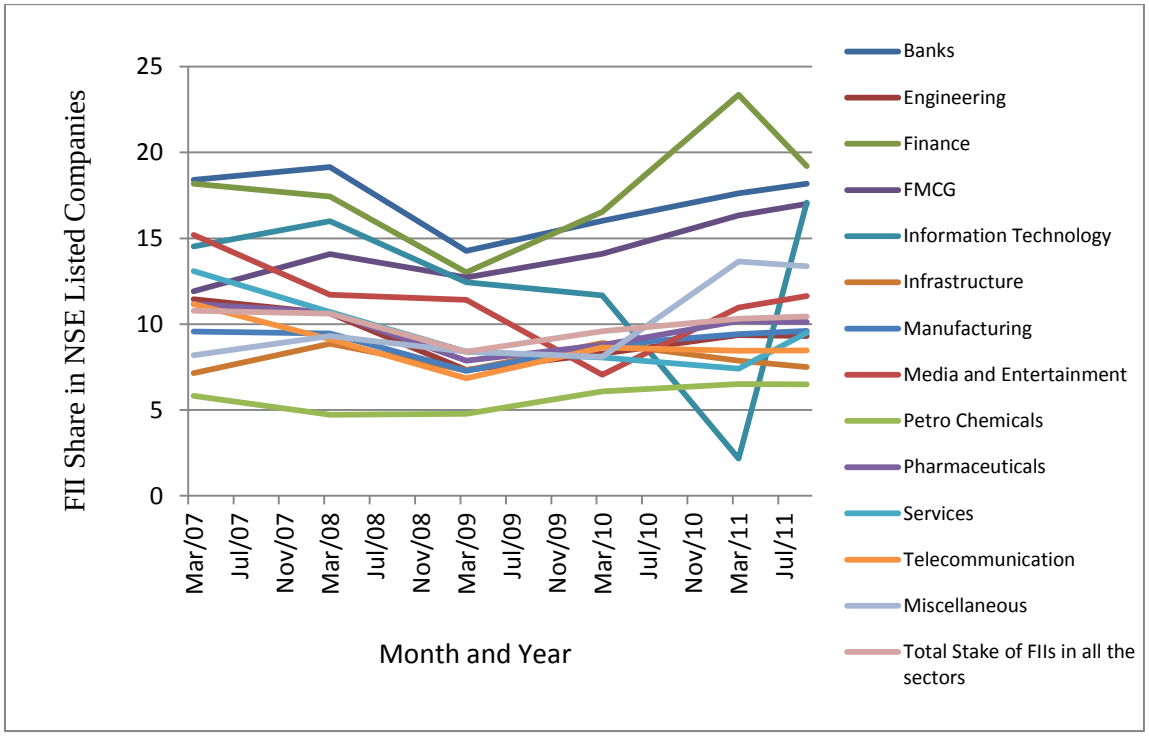
Sectors	March-2007 (% wise)	March-20008 (% wise)	March-2009 (% wise)	March-2010 (% wise)	March-2011 (% wise)	Sept.-2011 (% wise)
Banks	18.41	19.15	14.27	16.02	17.62	18.17
Engineering	11.45	10.63	7.34	8.28	9.36	9.30
Finance	18.18	17.44	13.01	16.53	23.35	19.20
FMCG	11.91	14.07	12.72	14.09	16.34	17.00
Information Technology	14.53	16.00	12.44	11.68	2.16	17.07
Infrastructure	7.15	8.86	7.31	8.90	7.87	7.50
Manufacturing	9.57	9.46	7.28	8.79	9.41	9.60
Media/Entertainment	15.20	11.71	11.42	7.06	10.97	11.63
Petro Chemicals	5.83	4.73	4.77	6.08	6.52	6.49
Pharmaceuticals	11.17	10.69	7.88	8.78	10.19	10.13
Services	13.09	10.70	8.39	8.05	7.41	9.50
Telecommunication	11.17	9.12	6.85	8.64	8.44	8.46
Miscellaneous	8.19	9.30	8.39	8.10	13.65	13.37
Total Stake of FII in all the sectors	10.78	10.62	8.40	9.58	10.32	10.45

Source: NSE-Indian Securities Market Review –2011.

This case came as a major shock for the market regulator i.e. SEBI and the other well wishers of the Indian economy i.e. RBI and the Central Government. But the maximum heat of this unthinkable phenomena was felt by an average Indian individual investor who got his/her figure burnt heavily as he/ she lost the hard earned money so fast. Their losses ran into crores of rupees. This phenomenon was also a great lesson for all the parties dealing in the Indian stock market. This phenomenon also made the market regulator (SEBI) to think seriously about the fact that how much volatility would have got enthused in the Indian stock market due to the unfair playing of FIIs.

However during 2009-10, it seems that the concept of 'Economy Reading' has applied to India. In spite of the Indian economy showing some features of stagnation with an economic growth of 6.5 %, industrial growth showing deceleration to 2.8 % and wholesale inflation touching 8.45 %, there was all together positive trends of FII in India and it resulted in net investment worth Rs. 142658 crore in that year *(Report on Economic Outlook 2010-11)*. In 2010-11 and 2011-12 also, investment worth Rs.146438 crore and *Rs.* 93725 crore respectively was attracted by India from FIIs.

Figure 3.5 : Shareholding Patterns of FII in Companies listed on NSE



Source: NSE-Indian Securities Market Review –2011.

The same is further supported by share holding patterns of FII in NSE registered companies as shown in the Table 3.6. This has also been displayed by the Figure 3.5. As per the Table 3.6, the FIIs have grabbed almost 10 % share of the total shareholding of the companies listed on NSE in 2007, 2008, and 2011 respectively. In some sectors such as Banking, Finance, FMCG and IT, they have held more than 10 % of the total share capital. This shows that FIIs have been quite active in the Indian economy and they have shown great interest for investment in banking, Finance, IT, Media and Entertainment and FMCG sector.

In order to study the annualized growth of FII in the Indian economy, CAGR has been calculated and analysed. In simple words, CAGR represents the annualized growth rate at which FII in India has grown up over the last twelve years period ranging from 2000 to 2012. The figure of calculated CAGR (22.63 %) as shown by the Table 3.5 depicts that the overall averaged growth of investment by FIIs has been 22.63 % with the annual growth ranging between -11% to 1601% . In other words, it is observed that the FII in the Indian stock market has increased with a CAGR of 22.63 % over the twelve years. This shows that over the last one decade, FIIs have shown a great interest in the Indian capital market and have invested here heavily.

3.5 FII INTO INDIAN EQUITY MARKET AND DEBT MARKET

In India, the FIIs have been investing into the equity as well as the debt instruments for a long time back. It was in September, 1992 when the FIIs were permitted to make investment in the Indian capital market. However, the actual investment by FIIs started in January, 1993. Till December, 1998, FIIs were permitted to make investment only in the Indian equity market. From April, 1998, the Indian gilts market was also opened for FIIs. And in 1999, the FIIs were further permitted to make investment in the Indian debt market.

Thus, as permitted to make investment in almost all the sectors of the Indian capital market, FIIs have been making huge investment in the Indian economy over the last many years. It has been experienced that over the years, Indian equity and debt market have become one of the preferred destination for the FIIs. As per the experience

gained with the investment from FIIs, it has been observed that there has been a mixed response of FII in the Indian equity market and the debt market. None of the market has been able to get the hundred percent investments from FIIs or in other words, FIIs have not been very stable and consistent for putting their money with equal proportion into any of these markets.

Though the major share of FIIs investment happens to be in the equity market, sometimes they prefer to play safe for their investment and invest in the Indian debt market too. The Table 3.7 describes the proportion of FII in the Indian equity market and the debt market from the year 2000-01 to 20011-12.

Table 3.7 : FII in Equity and Debt Market

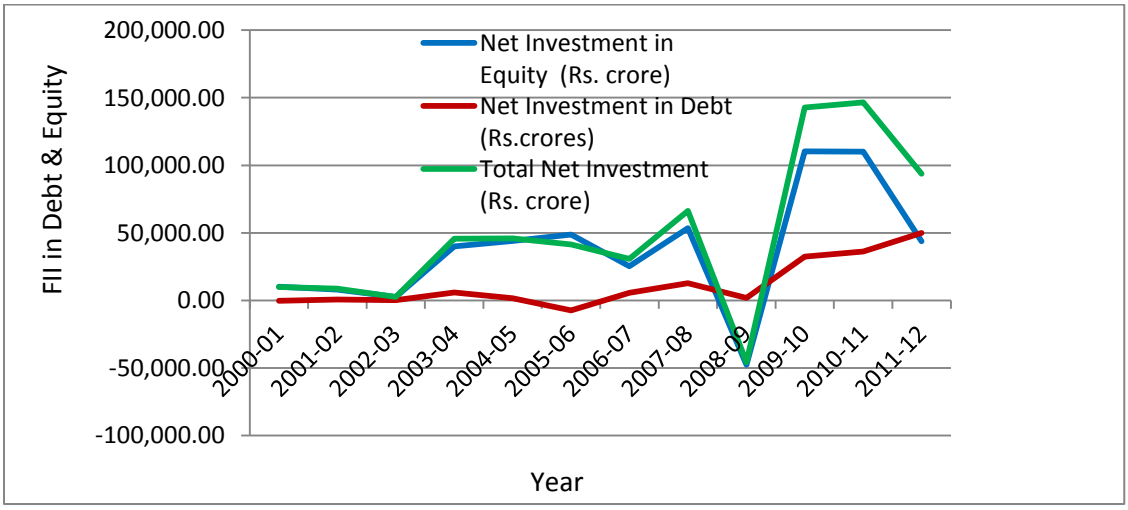
Year	Net Investment in Equity (Rs. Crore)	As % of Total Investment	Net Investment in Debt (Rs.Crore)	As % of Total Investment	Total Net Investment (Rs. Crore)
2000-01	10206	102	-273	-2	**9933**
2001-02	8072	92	690	8	**8762**
2002-03	2527	93	162	7	**2689**
2003-04	39959	87	5805	13	**45764**
2004-05	44122	96	1758	4	**45881**
2005-06	48800	117	-7333	-17	**41466**
2006-07	25235	81	5604	9	**30840**
2007-08	53403	81	12775	9	**66179**
2008-09	-47706	-104	1895	-4	**-45811**
2009-10	110220	77	32437	23	**142658**
2010-11	110120	75	36317	25	**146438**
2011-12	43737	47	49987	53	**93725**

Source: NSE Indian Securities Market – A Review, 2012.

As per the table, in the year 2000-01, FIIs made net investment into the equity market to the tune of Rs. 10206 crore, while in that very year, there was net selling of debt to the tune of Rs. 273 crore. This shows a differentiated approach of FIIs for both these markets right from the beginning. In the next year, that is, 2001-02, the ratio of FII into equity and debt was found to be 92 % and 8 % with the net investment to the tune of Rs. 8072 crore and Rs. 690 crore in the Indian equity and debt markets respectively. This ratio of investment between the equity and debt market remained almost the same in the next year i.e. 2002-03 also. In 2003-04, there came a major thrust and preference for the Indian equity market by FIIs and they made investment to the tune of Rs. 39959 crore in the equity market and Rs. 5805 crore in the debt market. This trend continued to prevail for the next two years as well with FII equity investment of Rs. 44142 crore in 2004-05 and Rs. 48800 crore in 2005-06. However, FII in debt market saw a negative response in the same year i.e. 2005-06. And there was found to be net selling of debts to the tone of Rs.7333 crore by FIIs in that year.

The Table 3.7 further displays that the investment data in the Indian stock market by FIIs continued to show upward trends in the next three years i.e. 2007-08, 2009-10 and 2010-2011 except two years i.e. 2006-07 and 2008-09. One of the major reasons which could be accounted for low investment in these years with some exceptions was the occurrence of global financial crisis particularly in the year 2008-09.

Figure 3.6 : FII in Equity and Debt Market



Source: NSE Indian Securities Market – A Review

One of the other major observations which has come to light on the basis of this analysis has been that FIIs always preferred and tried to play safe as per their perceived risk about the Indian capital market. It is evident from the data that their share in the Indian debt market which was just 8 % in the total investment in the year 2001-02 went up to 53 % in 2011-12. And in case of the Indian equity market, their investment share has been showing diversified trends e.g. in the year 2000-01, their share was 102 %, it was negative i.e. 104 % in the year 2008-09 and in the year 2011-12, it was found to be 47 %. Thus, it has been empirically observed and evidenced that FIIs are the real strategists, they know how to play, how much to play, in which market to play and with what proportion to play. It has been due to this philosophy and the planning of FIIs that they have been able to generate and enjoy good rate of returns from their investments across globe including India. This all has been further shown and represented by the Figure 3.6.

In order to know whether the percentage contribution of FIIs' equity investment to total investment is significant or not, **t-test** has been applied. The t-test has been applied with the null hypothesis that the contribution of FIIs' equity investment to total Investment is not significant; and with the alterative hypothesis that the contribution of FIIs' equity investment to total Investment is significant. As per the results obtained, the t (calculated) statistics value (0.000509412) has been found less than the t critical value (1.795885), and moreover the tail t value (0.499801335) has been found more than 0.05 or 5 % level of significance. Hence, the null hypothesis is accepted at 5 % level of significance which states that the contribution of FIIs' equity investment in the total foreign investment is not significant.

3.6 ASSETS UNDER THE CUSTODY OF VARIOUS CUSTODIANS

Over the years, it has been observed that the investment from FIIs in India has not been flowing from one source only. There are many sources which have contributed their share in the amount of total assets under the custody of various custodians. The various custodians under whose custody the total assets have been from include FII, Financial Institutions, Mutual Funds, Non-Residents Indians (NRIs), Overseas Commercial Borrowings, Brokers, Corporate, Banks, Foreign Depositors, FDI Investments, Insurance Companies, Local Pension Funds and others.

As per the Table 3.8, India has attracted about Rs. 61753 crore under the custody of FII in 2001-02 which was 22.84 % of the total assets under the custody of various custodians. By end of the year 2003-04, this figure stood at Rs. 159397 crore. This shows that there was 158 % increase (i.e. from Rs. 61753 crore to Rs. 159397 crore) in the total assets under the custody of FIIs. The assets under the custody of financial Institutions (FIs) have overall gone down from Rs. 110824 crore in 2001-02 to Rs. 62600 crore in 2010-11. And this decrease has continued to prevail during the next year, when the total assets under financial institutions (FIs) happened to be Rs. 54998 crore during the period ranging from April, 2011 to December, 2011.

In case of mutual fund, as per the observations from this table, the increase in the amount of assets under the custody of mutual fund has been significant from Rs. 32570 crore in 2001-02 to Rs 600949 crore till Dec 2011. This reflects the growing role of mutual fund industry in the Indian economy. But it is also worth mentioning here that still the assets under the custody of mutual fund (Rs. 600949 crore till December 2011) were substantially less than the assets under FII custody i.e. Rs 917930 crore which was almost one third times more.

Table 3.8 : Total Assets under the Custody of Various Custodians

Year	FII (Rs.Crore)	FIs (Rs.Crore)	Mutual Fund (Rs.Crore)	NRIs (Rs.Crore)	OCBs (Rs.Crore)	Brokers (Rs.Crore)	Corporate (Rs.Crore)
2001-02	61753	110824	32570	185	1285	0	15311
2002-02	56139	113154	41368	263	1136	0	13498
2003-04	159397	151655	90338	563	1330	35	20156
2004-05	236257	169232	126286	1481	1466	35	22289
2005-06	453636	260697	204518	1633	1616	35	37630
2006-07	547010	291030	290378	1056	1198	0	25656
2007-08	736753	397124	469776	606	1238	5	36975
2008-09	391954	32008	378954	455	569	-	19430
2009-10	900869	47607	584628	1209	1011	0	29328
2010-11	1106550	62600	591937	910	1005	0	48723
April-Dec. 11	917930	54988	600949	2329	758	0	41072

Year	Banks	Foreign Depositories	FDI	Foreign Venture Capital Investment	Insurance Companies	Local Pension Funds	Others	Total Investment by all entities	% of FII to Total Investment
	9	10	11	12	13	14	15	16	17
2001-02	17798	17297	-	-	-	-	26780	270267	**22.84**
2002-02	29814	15890	-	-	-		28051	278855	**20.13**
2003-04	21188	34636	-	-	-		27808	510015	**31.25**
2004-05	24531	47780	-	-	-		27828	668585	**35.33**
2005-06	31872	84048	-	-	-		28216	1169113	**38.80**
2006-07	24522	100361	-	-	-		3270	1400610	**39.05**
2007-08	29983	139918	-	-	-		3902	2042212	**36.07**
2008-09	27859	71839	92694	16579	442117	3274	5319	1577589	**24.84**
2009-10	42597	156616	145555	17604	780610	24266	10166	2862961	**31.46**
2010-11	85863	185931	146231	24002	908112	34970	11023	3351076	**33.02**
April-Dec11	88264	122056	210778	25895	805750	24044	11125	3102799	**29.58**

Source: SEBI Handbook of Statistics on Indian Securities Market, 2011.

The amount under the custody of NRIs has, by and large, been within the range of Rs. 185 crore in 2001-02 to Rs. 2329 crore in Dec2011. The assets under the custody of overseas commercial borrowings (OCBs) have also been less as compared to the assets under the custody of FII. Brokers have also been quite marginal. Though, corporate, banks, foreign venture capital investment, insurance companies, and local pensioners have been playing an important role by being the custodian of assets, FII share in the total investment as compared to all these entities has been on the rise.

As it is clear from the table that the FII share in the total assets was approximately 31.25 % in 2003-04. The share of FII got increased to 35.33 % in 2004-05. In the next year i.e. 2005-06 too, it further reached the level of 38.8 %. The year 2006-07 saw an increase of 39.05 % in its share. However, it was observed that in the subsequent years, the assets under FII showed diversified trends. For example, in 2007-08, 36.07 % assets

came under the custody of FII. In 2008-09, the FII share of assets which was 24.84 % got increased to 31.46 % in the 2009-10. The next year i.e. 2010-11 also experienced an increase in FIIs share touching the level of 33.02 %. However, FII could not maintain the same trend in the subsequent years and their share came down to 29.58 % by the end of December 2011. Overall, it has been observed that though the share of assets under the custody of various custodians has been changing over the last decade, FIIs have enjoyed a comparatively good share in terms of assets under their custody.

For studying whether the assets under the custody of FIIs as compared to total assets under all custodian are significant or not, **t-test** has been applied for this purpose. The t-test has been applied with the null hypothesis that ratio of assets under FII to the assets under all the custodians is not significant; and with the alterative hypothesis that ratio of assets under FII to the assets under all the custodians is significant. As per the results obtained, the t (calculated) statistics value (-1412.12) has been found less than the t critical value (1.795885), and moreover , the tail t value (1.41) has been found more than 0.05 or 5 % level of significance. Hence the null hypothesis is accepted at 5 % level of significance which states that the ratio of assets under FII to the assets under all the custodians is not significant.

3.7 GROWTH AND LIQUIDITY OF INDIAN STOCK MARKET AND FII ROLE

Facilitated by the policies of liberalisation, privatization and globalization of the Indian economy, financial market in India, the capital market in particular, has grown substantially over the past couple of years. Introduction of various financial sector reforms accompanied by robust economic growth has helped Indian economy grow faster. A look at the stock market developments indicates that Indian stock market has achieved a phenomenal growth over the past few years.

One of the main yardsticks to measure the size of market is the absolute value of the market capitalization which is equal to the value of the listed shares on a particular date on a particular stock exchange. But the absolute value does not have much meaning unless it is studied in the light of the total value of the economy called GDP. Hence, there

is one realistic measure for judging the performance of the Indian stock market named Market Capitalization Ratio (MCR) which is equal to market capitalization to country's Gross Domestic Product (GDP).

$$\textbf{MCR} = \frac{\textbf{Market Capitalization}}{\textbf{Gross Domestic Product}} \times \textbf{100}$$

Normally higher the MCR better it is. High MCR shows that there is more liquidity in the market in term of more mobilization ability of the companies from the public and diversification of risk (*Biswal, and Kamaiah, 2001).*

However, MCR alone is not sufficient to study the market activities and liquidity. Other ratios judging the market activities and liquidity being used frequently in the literature are **Turnover Ratio** and **Value Traded Ratio.** A country might have very high MCR but stock market may be less liquid. Liquidity of the stock market means how quickly shares can be converted into cash. So liquidity of the market is very important phenomena to be analysed to judge the investment environment of the economy.

Turnover Ratio means the ratio between the total value of traded equity and the total market capitalization value. Through this ratio, trading activities of the equity market relative to the size of the total market is measured. A market having high turnover ratio will have low transaction cost. A 100 % TOR means that every share has undergone one change of ownership.

$$\textbf{Turnover Ratio (TOR)} = \frac{\textbf{Turnover}}{\textbf{Market Capitalization}} \times \textbf{100}$$

Another measure of liquidity is **Value Traded Ratio** (VTR). VTR can be calculated as the value traded on stock market divided by Gross Domestic Product.

$$\textbf{Value Traded Ratio (VTR)} = \frac{\textbf{Total Value Traded}}{\textbf{GDP}} \times \textbf{100}$$

VTR ratio is comparatively a broader concept than TOR as it presents trading activity in relation to the total size of the economy rather than the total market size.

As discussed in the previous paragraph, the market capitalization to Gross Domestic Product ratio is one of the significant methods to evaluate the performance of the Indian stock market. As evident from the Table 3.9, the MCR calculated on the basis of market capitalization of BSE and NSE has improved consistently over the years. BSE MCR which was just 26.9 % in the year 2001-02 got increased to 43.4 % during 2003-04. This ratio further showed upward trends and it was recorded at 54.3 % in 2004-05.

In the subsequent years also i.e.2005-06 and 2007-08, this ratio continued to show upward trends and was recorded at 84.4 % and 109.5 % in those years respectively. However, there was some marginal downfall in the subsequent years. For example, in 2008-09, this ratio came down to 55.3 %. The reason for the same could in part be attributed to the USA subprime crisis. In the next year, the stock market showed the signs of recovery and the ratio got increased to 95.5 %.

Table 3.9 : Growth and Liquidity of Indian Stock Market (% wise)

Year	MCR=BSE Mkt. Cap./GDP × 100	MCR=NSE Mkt. Cap./GDP × 100	TOR - BSE	TOR - NSE	VTR-BSE	VTR-NSE
2001-02	26.9	28.0	50.2	80.6	13.5	22.6
2002-03	23.28	21.85	54.9	115.1	12.7	25.1
2003-04	43.4	40.5	41.9	98.1	18.2	39.8
2004-05	54.3	50.7	30.5	71.9	16.0	35.2
2005-06	84.4	78.6	27.0	55.8	22.1	42.5
2006-07	85.5	81.2	27.0	57.8	22.3	45.3
2007-08	109.5	103.5	30.7	73.1	31.7	71.2
2008-09	55.3	51.9	35.6	95.0	19.7	49.3
2009-10	95.5	93.1	22.4	68.9	21.0	63.2
2010-11	89.1	87.3	16.2	53.4	14.0	45.4

MCR= (Market Capitalization/GDP × 100)

TOR (Turnover Ratio) = (Turnover/Market Capitalization × 100)

VTR (Traded Value Ratio) = (Value Traded /GDP × 100)

Source: SEBI Handbook 2011, and SEBI Annual Reports

***Quick Estimates of GDP at market prices for 2011-12 (at current prices) is considered**

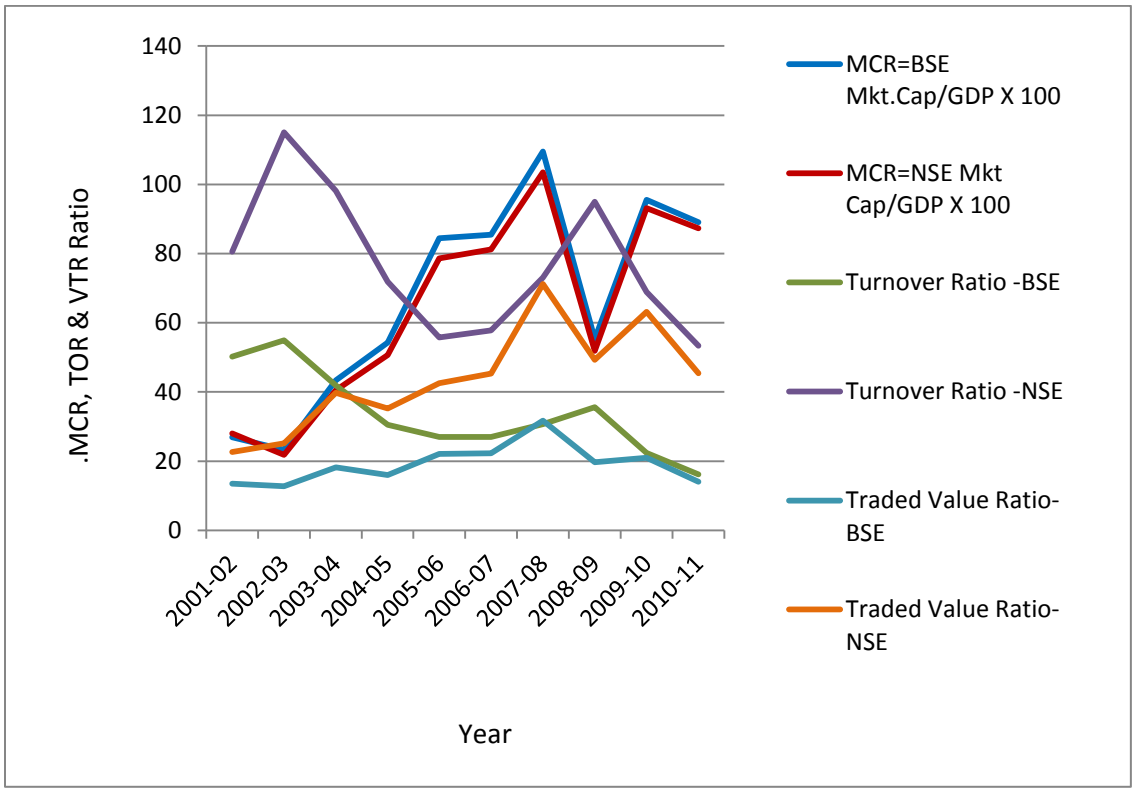
And the same trend was observed in 2010-11 when the ratio was 89.1 %. Similarly, NSE MCR also showed increasing trends for many years. For example, in 2001-02, the ratio stood at 28. %. In 2003-04, this ratio further got increased to 40.5 %. In 2004-05, this ratio was calculated at 50.7 %. As per the table observations, this ratio reached the level of 78.6 % in 2005-06. In the next two years, this ratio showed further positive increase, it broke all the previous records having been calculated at 81.2 % in 2006-07 and 109.63% in 2007-08.

However, this ratio could not maintain its self and fell down to 51.9 % in 2008-09 in tune with the fall in the share prices and the resultant decline in the trading volume. But in the very next year i.e. 2009-10, the ratio went up to 93. % and it stood at 87.3 % in 2010-11which was also a reasonably good figure. Thus, overall, MCRs of BSE and NSE have displayed increasing trends showing that there has been a tremendous increase in the market value of the shares traded at BSE and NSE as compared to the Indian GDP.

Thus it is concluded that market depth has increased in the post FII era. This also indicates that the Indian capital market has also expanded with the expansion of the Indian economy from 2000 onwards. As discussed earlier, judging the market liquidity is also very important. It is clear from the Table 3.9 that both the ratios (VTR and TOR) have shown good sign of liquidity in BSE as well as in NSE. The turnover ratios have been hovering around averaged figure of 30 % in case of BSE except in 2001-02 and 2002-03 when it was recorded at 50.2% and 54.9% respectively. The turnover ratio in case of NSE has also been quite good i.e. 80.6 % in 2000-01, 98.1 % in 2003-04 and 68.9 % in 2009-10.

The VTR ratio have also been good hovering around an averaged ratio of 20 % in case of BSE and 40 % in case of NSE during the last ten years. This ratio has never gone down below 10 % in case of BSE and 20 % in case of NSE. This shows that there has been enough circulation of money in the Indian economy. And the investors have undertaken good trading activities at BSE and NSE as compared to the total Indian GDP. This shows that the Indian stock market has not only become larger but has become more liquid capital market after FIIs intensified their flows into the Indian economy.

Figure 3.7 : MCR, TOR and VTR for BSE and NSE



MCR= (Market Capitalization/GDP × 100)

Turnover Ratio = (Turnover/Market Capitalization × 100)

Traded Value Ratio = (Value Traded /GDP × 100)

Source: SEBI Handbook 2011, and SEBI Annual Reports

3.8 FII PROPORTION IN TOTAL MARKET TURNOVER (BES/NSE)

As discussed in the previous pages, FII flows have not only expanded the base of the Indian stock market but they have also made it more liquid. This has been possible due to the fact that FIIs have been playing a very aggressive role in BSE and NSE. So it is very important to study and analyse the trends of the FII as a ratio to the total market turnover. This would help us know and analyse the fact, as to what extent FIIs are responsible for the changes in the total market turnover of BSE and NSE.

Table 3.10 : FII as Percentage of Total Market Turnover

(BSE and NSE-Annual Data)

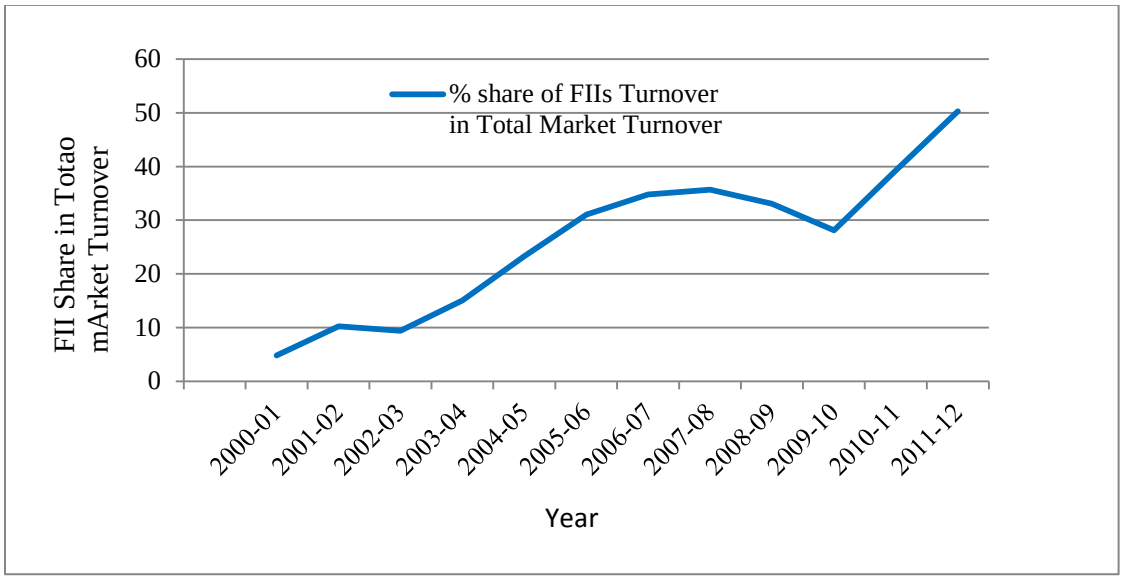
Year	Gross Purchases (Rs. Crore)	Gross Sales (Rs. Crore)	Total Turnover by FII (Gross Purchase +Gross Sales) (Rs.Crore)	Total Market Turnover (cash segment) (Rs. Crore)	% share of FII Turnover in Total Market Turnover
2000-01	74051	64118	138169	2880990	4.79
2001-02	50071	41398	91469	895818	10.21
2002-03	47062	44372	91434	968909	9.43
2003-04	144855	99091	243946	1620932	15.04
2004-05	216951	171071	388022	1666896	23.27
2005-06	436976	305509	742485	2390103	31.06
2006-07	520506	489665	1010171	2903057	34.79
2007-08	948018	881839	1829857	5129894	35.67
2008-09	614576	660386	1274962	3852097	33.09
2009-10	846438	703780	1550218	5516833	28.09
2010-11	992599	846161	1838760	4682437	39.26
2011-12	921285	827562	1748847	3478390	50.27

Source: Calculations based on the data from SEBI Annual reports, SEBI Handbook of Statistics on the Indian Securities Market.

As the Indian stock market has been offering ample return as compared to other emerging countries and developed markets, this trend has always motivated FIIs to make more investment in the Indian economy over the last few years. And as a result, FIIs have been investing hugely in the market turnover of BSE and NSE. After 1992, FIIs have emerged as one of the major market participants in the Indian stock market. During the initial years of their stay in India from 1992 to 2000, they have considered the Indian

stock market as one of their major international destinations for the global portfolio investment. But surprisingly during the last twelve years, they have started participating in the Indian stock market heavily and seriously. They have also been investing hugely in various investing funds in India. Rapidly, this development has resulted in broadening and deepening of the Indian stock market over the last few years. The role and proportion of FIIs investment in the total market turnover has been described by the Table 3.10.

Figure 3.8 : FII as Percentage of Total Market Turnover (BSE and NSE-Annual Data)



Source: Calculations based on the data from SEBI Annual reports, SEBI Handbook of Statistics on the Indian Securities Market.

As per the Table 3.10, the proportion of total FII in the total market turnover which is an important ingredient of stock market investment has been showing increasing trends. This table further discloses that the proportion of total FII in the total market turnover (BSE and NSE) has grown up which shows the interest, trust, confidence and strengthening position of FIIs in the Indian stock market. It is also evident from this table that the percentage of total FII in the total market turnover has grown significantly over the past twelve years. This proportion which was just 4.79 % in 2000-01 got increased to 10.21 % in 2001-02 and then it further got increased to 15.04 % in 2003-04. The table

also discloses that this proportion went up to 23.27 % in 2004-05. This share had been recorded at 31.06 % in 2005-06. It can also be observed from this table that overall the share of FII in the total market turnover in the subsequent years has been on the rise except during the two years i.e. 2008-09 and 2009-10. As per the table, FII share in the total market turnover stood at 34.79 % in the year 2006-07. This share went up further with this figure touching 35.67 % in the year 2007-08. However, as discussed earlier, the FII share came down to the level of 33.09 % in 2008-09 and 28.09 % in 2009-10 respectively.

In 2010-11, the FII showed good interest in the Indian capital market and their share again rose to 39.26 % which was almost 40 % of the total market turnover. FIIs did not stop here and continuously showed more interest in the Indian capital market. Out of this economic interest and growing confidence about the Indian stock market, they invested huge funds in the Indian stock market in the year 2011-12. This constituted around 50.27 % of the total market turnover in that year. Thus over the last twelve years, their share in the total market turnover has increased from 4.79 % in 2000 to 50.27 % in 2012. This increase shows that there was 13 times increase in the FII as a ratio to the total market turnover of the Indian stock market. This observation speaks itself about the successful story of the Indian stock market as well as the increasing confidence of FIIs in the same. The same has been demonstrated by the Figure 3.8 also.

The FII proportion as a percentage of total turnover of BSE and NSE has not only increased on yearly basis, it has also shown increasing trends on monthly basis. The Table 3.11 shows the FII proportion to the total market turnover on the basis of monthly data from 2000 to 2012. As per this table, the FII proportion which was just 13 % in April 2000 got increased to almost 44 % in March 2012. This again shows consistency in the behaviour of FIIs in terms of their investment strategy and preference for Indian capital market as a potential investment destination.

In order to study whether the contribution of FII in the Indian total market turnover (BSE and NSE) is significant or not**, t-test** has been applied. The test has been applied with the null hypothesis that percentage share of FII Turnover in total market turnover is not significant; and with the alterative hypothesis that percentage share of FII

turnover in total market turnover is significant. As per the results obtained, the t (calculated) statistics value (0) has been found less than the t critical value (1.795885), and moreover the tail t value (0.5) has been found more than 0.05 or 5 % level of significance. Hence, at 5 % level of significance, the null hypothesis is accepted which states that percentage share of FII turnover in total market turnover is not significant.

Table 3.11 : FII as a Percentage of Total Market Turnover
(BSE and NSE-Monthly Data)

Month	Monthly Turnover at BSE (Rs.Crore)	Monthly Turnover at NSE (Rs.Crore.)	Total Market Turnover (BSE+NSE) (Rs.Crore)	FIIs Gross Purchases (Rs.Crore)	FIIs Gross Sales (Rs.Crore)	Total FII Turnover (Rs.Crore)	% of FII to Total Market Turnover
Apr-00	44601	57229	101830	8355	5768	14123	13.87
May-00	57891	79037	136928	6308	6055	12363	9.03
Jun-00	86277	119373	205650	5399	6334	11733	5.71
Jul-00	80346	110056	190402	5858	7260	13118	6.89
Aug-00	92563	125347	217910	5134	3875	9009	4.13
Sep-00	114432	142480	256912	7150	6931	14081	5.48
Oct-00	76304	106854	183158	4441	4659	9100	4.97
Nov-00	86971	122731	209702	4791	3886	8677	4.14
Dec-00	99199	131415	230614	4452	5087	9539	4.14
Jan-01	114849	148830	263679	8601	4328	12929	4.90
Feb-01	101427	135932	237359	6586	4723	11309	4.76
Mar-01	45170	60226	105396	6978	5212	12190	11.57
Apr-01	23876	35616	59492	5080	3101	8181	13.75
May-01	31868	48329	80197	3976	3300	7276	9.07
Jun-01	25451	42783	68234	4119	2939	7058	10.34
Jul-01	17244	27228	44472	3665	3187	6852	15.41

Month	Monthly Turnover at BSE (Rs.Crore)	Monthly Turnover at NSE (Rs.Crore.)	Total Market Turnover (BSE+NSE) (Rs.Crore)	FIIs Gross Purchases (Rs.Crore)	FIIs Gross Sales (Rs.Crore)	Total FII Turnover (Rs.Crore)	% of FII to Total Market Turnover
Aug-01	17444	29417	46861	3249	2746	5995	12.79
Sep-01	21593	35323	56916	3370	3903	7273	12.78
Oct-01	21922	35326	57248	3896	3011	6907	12.07
Nov-01	24402	42132	66534	3974	3970	7944	11.94
Dec-01	30033	54468	84501	3455	3228	6683	7.91
Jan-02	39169	68719	107888	5446	4747	10193	9.45
Feb-02	28572	49564	78136	5816	3479	9295	11.90
Mar-02	25719	44262	69981	4024	3695	7719	11.03
Apr-02	28875	53320	82195	5109	5222	10331	12.57
May-02	28138	54979	83117	4355	4309	8664	10.42
Jun-02	23320	44241	67561	3351	4217	7568	11.20
Jul-02	26724	51398	78122	3501	3262	6763	8.66
Aug-02	23780	46113	69893	2668	2494	5162	7.39
Sep-02	24410	46499	70909	3766	3443	7209	10.17
Oct-02	27641	51902	79543	2813	3688	6501	8.17
Nov-02	25981	51352	77333	4135	3398	7533	9.74
Dec-02	30582	61973	92555	4287	3640	7927	8.56
Jan-03	30898	64762	95660	5315	4329	9644	10.08
Feb-03	23461	48289	71750	3470	3042	6512	9.08
Mar-03	20265	43160	63425	4292	3329	7621	12.02
Apr-03	20823	48971	69794	5878	4885	10763	15.42
May-03	22510	54690	77200	7385	4325	11710	15.17

Month	Monthly Turnover at BSE (Rs.Crore)	Monthly Turnover at NSE (Rs.Crore.)	Total Market Turnover (BSE+NSE) (Rs.Crore)	FIIs Gross Purchases (Rs.Crore)	FIIs Gross Sales (Rs.Crore)	Total FII Turnover (Rs.Crore)	% of FII to Total Market Turnover
Jun-03	24933	61586	86519	7835	4373	12208	14.11
Jul-03	32976	78878	111854	8550	6389	14939	13.36
Aug-03	36334	85347	121681	8847	6620	15467	12.71
Sep-03	44698	103345	148043	12270	8095	20365	13.76
Oct-03	52631	115595	168226	15212	8489	23701	14.09
Nov-03	45029	92886	137915	11124	7530	18654	13.53
Dec-03	54816	110373	165189	14916	8534	23450	14.20
Jan-04	65620	134269	199889	17652	13783	31435	15.73
Feb-04	51464	108718	160182	15962	13289	29251	18.26
Mar-04	50786	104877	155663	19224	12780	32004	20.56
Apr-04	44864	100951	145815	19692	12972	32664	22.40
May-04	45938	98920	144858	15655	19201	34856	24.06
Jun-04	36990	84898	121888	10894	11167	22061	18.10
Jul-04	39449	93836	133285	11247	10534	21781	16.34
Aug-04	38195	86856	125051	12856	10335	23191	18.55
Sep-04	39603	88508	128111	13097	10522	23619	18.44
Oct-04	34608	75698	110306	16063	14035	30098	27.29
Nov-04	35742	82035	117777	21302	13117	34419	29.22
Dec-04	50226	115593	165819	25841	15702	41543	25.05
Jan-05	43888	99732	143620	17502	17819	35321	24.59
Feb-05	49686	99989	149675	24360	15151	39511	26.40
Mar-05	59528	113055	172583	28444	20517	48961	28.37

Month	Monthly Turnover at BSE (Rs.Crore)	Monthly Turnover at NSE (Rs.Crore.)	Total Market Turnover (BSE+NSE) (Rs.Crore)	FIIs Gross Purchases (Rs.Crore)	FIIs Gross Sales (Rs.Crore)	Total FII Turnover (Rs.Crore)	% of FII to Total Market Turnover
Apr-05	37809	82718	120527	16210	17686	33896	28.12
May-05	43359	86802	130161	15619	17005	32624	25.06
Jun-05	58479	111397	169876	25960	20702	46662	27.47
Jul-05	61899	123008	184907	25717	17956	43673	23.62
Aug-05	75933	145731	221664	28358	23737	52095	23.50
Sep-05	81291	145393	226684	26652	22193	48845	21.55
Oct-05	59102	120810	179912	27166	31793	58959	32.77
Nov-05	52694	109578	162272	23500	21625	45125	27.81
Dec-05	77365	149908	227273	33548	25187	58735	25.84
Jan-06	79316	149442	228758	35414	32658	68072	29.76
Feb-06	70070	135374	205444	35671	28234	63905	31.11
Mar-06	118765	209395	328160	53162	46732	99894	30.44
Apr-06	87487	177372	264859	45234	44464	89698	33.87
May-06	95820	201409	297229	48738	55385	104123	35.03
Jun-06	72013	151050	223063	40408	39532	79940	35.84
Jul-06	54698	118698	173396	26967	25670	52637	30.36
Aug-06	63084	130796	193880	28395	22948	51343	26.48
Sep-06	71629	144339	215968	34056	27923	61979	28.70
Oct-06	69627	138382	208009	39574	30904	70478	33.88
Nov-06	101840	189863	291703	54858	44672	99530	34.12
Dec-06	85512	170105	255617	44207	46973	91180	35.67
Jan-07	87605	175147	262752	45770	47452	93222	35.48

Month	Monthly Turnover at BSE (Rs.Crore)	Monthly Turnover at NSE (Rs.Crore.)	Total Market Turnover (BSE+NSE) (Rs.Crore)	FIIs Gross Purchases (Rs.Crore)	FIIs Gross Sales (Rs.Crore)	Total FII Turnover (Rs.Crore)	% of FII to Total Market Turnover
Feb-07	88844	180170	269014	58257	50062	108319	40.27
Mar-07	78028	167954	245982	54043	53682	107725	43.79
Apr-07	78693	168567	247260	50633	42912	93545	37.83
May-07	98821	207585	306406	52127	46808	98935	32.29
Jun-07	95268	193648	288916	50203	49101	99304	34.37
Jul-07	125054	267227	392281	87331	64722	152053	38.76
Aug-07	106042	231241	337283	61821	68983	130804	38.78
Sep-07	123144	266050	389194	71165	52377	123542	31.74
Oct-07	199089	455589	654678	135412	112321	247733	37.84
Nov-07	170623	414420	585043	88510	94829	183339	31.34
Dec-07	163516	366385	529901	91023	82132	173155	32.68
Jan-08	185642	447138	632780	109335	120417	229752	36.31
Feb-08	121975	280176	402151	79298	75068	154366	38.39
Mar-08	110991	253012	364003	71160	72170	143330	39.38
Apr-08	115454	271227	386681	62329	62956	125285	32.40
May-08	121670	277923	399593	58966	64140	123106	30.81
Jun-08	113605	264428	378033	63153	74248	137401	36.35
Jul-08	123916	295816	419732	69646	67864	137510	32.76
Aug-08	99924	234251	334175	50139	50093	100232	29.99
Sep-08	108090	262261	370351	73515	78589	152104	41.07
Oct-08	78227	216198	294425	52286	69492	121778	41.36
Nov-08	63694	173123	236817	39488	37871	77359	32.67

Month	Monthly Turnover at BSE (Rs.Crore)	Monthly Turnover at NSE (Rs.Crore.)	Total Market Turnover (BSE+NSE) (Rs.Crore)	FIIs Gross Purchases (Rs.Crore)	FIIs Gross Sales (Rs.Crore)	Total FII Turnover (Rs.Crore)	% of FII to Total Market Turnover
Dec-08	80866	212956	293822	40310	37933	78243	26.63
Jan-09	70509	191184	261693	35778	39220	74998	28.66
Feb-09	54330	149857	204187	27987	31111	59098	28.94
Mar-09	69789	202799	272588	40978	46868	87846	32.23
Apr-09	88943	266696	355639	49714	40716	90430	25.43
May-09	128542	382561	511103	81266	63860	145126	28.39
Jun-09	159195	482414	641609	76072	71174	147246	22.95
Jul-09	138986	42643	181629	80212	67030	147242	81.07
Aug-09	122319	364969	487288	60674	56150	116824	23.97
Sep-09	124220	365063	489283	78951	58379	137330	28.07
Oct-09	114007	362969	476976	83352	67380	150732	31.60
Nov-09	105142	324477	429619	63633	57452	121085	28.18
Dec-09	98082	292900	390982	57394	48683	106077	27.13
Jan-10	117084	338443	455527	78812	70399	149211	32.76
Feb-10	82510	245143	327653	51127	46764	97891	29.88
Mar-10	99779	286246	386025	85229	55792	141021	36.53
Apr-10	93929	276566	370495	74374	61981	136355	36.80
May-10	86680	284625	371305	71569	78555	150124	40.43
Jun-10	92493	286109	378602	68976	57727	126703	33.47
Jul-10	92957	278551	371508	80671	55947	136618	36.77
Aug-10	112882	311994	424876	75396	60710	136106	32.03
Sep-10	108885	329869	438754	92837	60169	153006	34.87

Month	Monthly Turnover at BSE (Rs.Crore)	Monthly Turnover at NSE (Rs.Crore.)	Total Market Turnover (BSE+NSE) (Rs.Crore)	FIIs Gross Purchases (Rs.Crore)	FIIs Gross Sales (Rs.Crore)	Total FII Turnover (Rs.Crore)	% of FII to Total Market Turnover
Oct-10	118497	360472	478969	107630	83328	190958	39.87
Nov-10	106000	363993	469993	103475	82265	185740	39.52
Dec-10	81560	295685	377245	82561	79346	161907	42.92
Jan-11	69858	267332	337190	83365	78001	161366	47.86
Feb-11	68830	266504	335334	74854	78125	152979	45.62
Mar-11	70896	255712	326608	76890	70008	146898	44.98
Apr-11	69626	228348	297974	76732	69536	146268	49.09
May-11	59494	233876	293370	77046	81322	158368	53.98
Jun-11	59337	222457	281794	80624	75741	156365	55.49
Jul-11	59555	230003	289558	77218	66566	143784	49.66
Aug-11	53301	235253	288554	69590	77493	147083	50.97
Sep-11	54360	235270	289630	64868	66735	131603	45.44
Oct-11	43515	193293	236808	64411	61332	125743	53.10
Nov-11	43872	206344	250216	62296	65559	127855	51.10
Dec-11	39492	188886	228378	92020	70147	162167	71.01
Jan-12	52571	236872	289443	76548	50220	126768	43.80
Feb-12	69947	327808	397755	103634	68406	172040	43.25
Mar-12	62717	272482	335199	76298	74505	150803	44.99

Sources: Calculated on the basis of data from SEBI Hand book of Statistics on Indian Securities Market, SEBI Annual Report, RBI Hand book on Indian Economy, BSE and NSE official sites.

3.9 FII PROPORTION IN TOTAL MARKET CAPITALIZATION (BES/NSE)

The concept of market turnover is not complete without the concept of market capitalization. Ultimately, it is the market capitalization which reflects the actual value of one's shareholdings. Over the past few years, it has been observed that the financial markets across the world have become highly global. As a result, after the Indian economy was liberalized in the early 1990s, it has grown substantially in terms of size i.e. market capitalization. As per NSE *ISMR, 2011*, India ranked 7th in terms of market capitalization (with 11th position in 2009), 10th in terms of total value traded on stock exchanges and 22nd in terms of turnover ratio, as on December, 2010.

The net result of the FII participation in the Indian stock market has been that the Indian capital market has got substantially benefited from foreign capital inflows, the investment by FIIs in particular. These FII flows, on the one hand, has made the Indian market more vibrant and happening and on the other hand, they have consolidated it in terms of better corporate governance practices and provided a bigger platform for their investment.

As per the Table 3.12, the FII as the proportion of the total market capitalization of BSE and NSE has grown significantly over the last twelve years. The FII share which was negligible in the initial years has shown upward trends over the years as depicted by the Figure 3.9.

It has been observed from the this table that as the Indian market grew in terms of burgeoning market capitalization, there was found to be an increasing contribution in the same by FIIs. As per this table, the market capitalization grew from Rs. 768863 crore in 2000-01 to Rs. 3091199 crore in 2011-12. This shows that there was almost four times increase in their share. On the same line, over the same period, the FII proportion in total market capitalization got increased from 1.29% in 2000-01 to 19.03% in 2011-12 which was 19 times more. This shows that there has been substantial contribution of FII in the market capitalization over the last twelve years. It is hoped that the same trend will be seen in the future if the FIIs continue to have good faith in the Indian stock market.

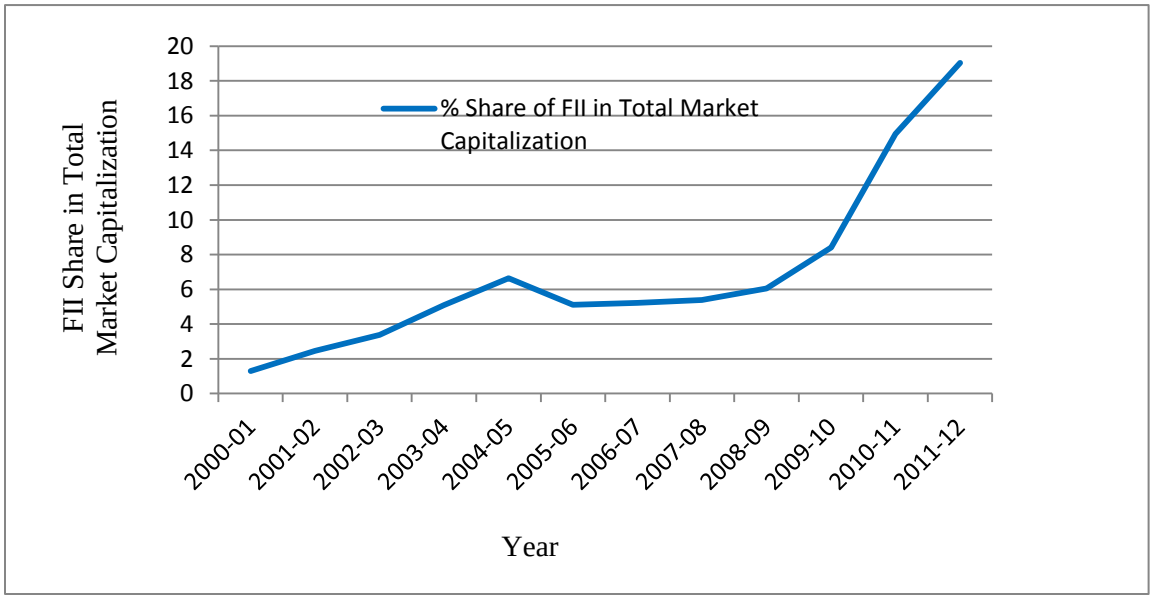
Table 3.12 : FII as Percentage of Total Market Capitalization

(BSE and NSE – Annual Data)

Year	Gross Purchases (a) (Rs. Crore)	Gross Sales (b) (Rs.Crore)	Net Investment (a-b) (Rs.Crore)	Total Cumulative Net Investment (Rs. Crore)	Total Capitalization (BSE and NSE) (Rs. Crore)	% Share of Total Cumulative Net FII in Total Market Capitalization
2000-01	74051	64118	9933	9933	768863	1.29
2001-02	50071	41398	8763	18696	759248	2.46
2002-03	47062	44372	2689	21385	631921	3.38
2003-04	144855	99091	45764	67149	1318795	5.09
2004-05	216951	171071	45880	113029	1702136	6.64
2005-06	436976	305509	41467	154496	3022190	5.11
2006-07	520506	489665	30841	185337	3548808	5.22
2007-08	948018	881839	66179	251516	4672474	5.38
2008-09	614576	660386	-45811	205705	3400371	6.04
2009-10	846438	703780	142658	348363	4143062	8.40
2010-11	992599	846161	146438	494801	3310790	14.94
2011-12	921285	827562	93725	588526	3091199	19.03

Source: Calculated on the basis of data from SEBI Annual reports, Handbook of Statistics on Indian Securities Market by SEBI and RBI

Figure 3.9 : FII as Percentage of Total Market Capitalization (BSE and NSE– Annual Data)



Source: SEBI Annual reports, Handbook of Statistics on Indian Securities Market by SEBI and RBI.

The FIIs proportion as a percentage of total market capitalization (BSE and NSE) has not only increased on yearly basis, it has also shown increasing trends based on monthly data as well. The FII proportion in the combined market capitalization of BSE and NSE (based on monthly data) which was just 0.16 % in April 2000 got increased to almost 5 % in March 2012 which could be easily observed from the Table 3.13. This again shows the FIIs preference for the Indian capital market as one of their main investment destination.

In order to test whether the FII contribution in the total market capitalization is significant or not, **t-test** has been applied. The t-test has been applied with the null hypothesis that percentage of total cumulative net FII in total market capitalization is not significant and with the alterative hypothesis that percentage of total cumulative net FII in total market capitalization is significant. As per the results obtained, the t (calculated) statistics value (-1.8) has been found less than the t critical value (1.795885), and moreover the tail t value (0.5) is more than 0.05 or 5 % level of significance. Hence the null hypothesis is accepted at 5 % level of significance which states that percentage of total cumulative net FII in total market capitalization is not significant.

Table 3.13 : FII as Percentage of Total Market Capitalization

(BSE and NSE-Monthly Data)

Month	Net Investment by FIIs (Rs.Crore)	Cumulative Net FII (Rs.Crore)	Market Capitalization at BSE (Rs.Crore)	Market Capitalization at NSE (Rs.Crore)	Total Market Capitalization (Rs.Crore)	% of Cumulative Net FII to Total Market Capitalization
Apr-00	2587	2587	755914	846391	1602305	0.16
May-00	253	2840	702777	790478	1493255	0.19
Jun-00	-935	1905	793230	852554	1645784	0.12
Jul-00	-1402	503	720884	746402	1467286	0.03
Aug-00	1259	1762	766642	794516	1561158	0.11
Sep-00	218	1980	692657	730350	1423007	0.14
Oct-00	-219	1761	653437	707121	1360558	0.13
Nov-00	905	2666	699230	764177	1463407	0.18
Dec-00	-635	2031	691162	760391	1451553	0.14
Jan-01	4273	6304	736631	807641	1544272	0.41
Feb-01	1863	8167	716173	789600	1505773	0.54
Mar-01	1766	9933	571553	657847	1229400	0.81
Apr-01	1979	11912	567729	653720	1221449	0.98
May-01	676	12588	595938	592437	1188375	1.06
Jun-01	1180	13768	553230	569797	1123027	1.23
Jul-01	478	14246	531576	574260	1105836	1.29
Aug-01	502	14748	523036	575242	1098278	1.34
Sep-01	-533	14215	456263	509105	965368	1.47
Oct-01	884	15099	481851	535846	1017697	1.48
Nov-01	4	15103	535724	581386	1117110	1.35

Month	Net Investment by FIIs (Rs.Crore)	Cumulative Net FII (Rs.Crore)	Market Capitalization at BSE (Rs.Crore)	Market Capitalization at NSE (Rs.Crore)	Total Market Capitalization (Rs.Crore)	% of Cumulative Net FII to Total Market Capitalization
Dec-01	228	15331	532328	552908	1085236	1.41
Jan-02	699	16030	544397	563683	1108080	1.45
Feb-02	2337	18367	596716	621523	1218239	1.51
Mar-02	329	18696	612224	636861	1249085	1.50
Apr-02	-113	18583	625587	649551	1275138	1.46
May-02	46	18629	605065	631609	1236674	1.51
Jun-02	-866	17763	637753	659991	1297744	1.37
Jul-02	238	18001	584042	608643	1192685	1.51
Aug-02	174	18175	605303	632618	1237921	1.47
Sep-02	322	18497	570273	599603	1169876	1.58
Oct-02	-875	17622	563750	606788	1170538	1.51
Nov-02	738	18360	601289	645388	1246677	1.47
Dec-02	648	19008	628197	672862	1301059	1.46
Jan-03	985	19993	611472	572277	1183749	1.69
Feb-03	428	20421	619873	581985	1201858	1.70
Mar-03	963	21384	572198	537133	1109331	1.93
Apr-03	993	22377	572526	530630	1103156	2.03
May-03	3060	25437	660982	612030	1273012	2.00
Jun-03	3462	28899	734389	678550	1412939	2.05
Jul-03	2161	31060	775996	719145	1495141	2.08
Aug-03	2227	33287	905193	836651	1741844	1.91
Sep-03	4175	37462	933087	863481	1796568	2.09
Oct-03	6723	44185	1000494	926748	1927242	2.29

Month	Net Investment by FIIs (Rs.Crore)	Cumulative Net FII (Rs.Crore)	Market Capitalization at BSE (Rs.Crore)	Market Capitalization at NSE (Rs.Crore)	Total Market Capitalization (Rs.Crore)	% of Cumulative Net FII to Total Market Capitalization
Nov-03	3594	47779	1065853	979541	2045394	2.34
Dec-03	6382	54161	1273361	1167029	2440390	2.22
Jan-04	3869	58030	1206854	1116150	2323004	2.50
Feb-04	2673	60703	1196221	1110954	2307175	2.63
Mar-04	6444	67147	1201207	1120976	2322183	2.89
Apr-04	6720	73867	1255347	1171828	2427175	3.04
May-04	-3546	70321	1023129	950494	1973623	3.56
Jun-04	-274	70047	1047258	979700	2026958	3.46
Jul-04	713	70760	1135589	1066087	2201676	3.21
Aug-04	2521	73281	1216567	1143075	2359642	3.11
Sep-04	2575	75856	1309318	1227550	2536868	2.99
Oct-04	2028	77884	1337190	1253825	2591015	3.01
Nov-04	8185	86069	1539595	1446292	2985887	2.88
Dec-04	10140	96209	1685989	1579161	3265150	2.95
Jan-05	-317	95892	1661532	1557444	3218976	2.98
Feb-05	9209	105101	1730940	1614597	3345537	3.14
Mar-05	7926	113027	1698428	1585585	3284013	3.44
Apr-05	-1475	111552	1635766	1517908	3153674	3.54
May-05	-1386	110166	1783221	1654995	3438216	3.20
Jun-05	5258	115424	1850377	1727502	3577879	3.23
Jul-05	7760	123184	1987170	1848740	3835910	3.21
Aug-05	4621	127805	2123901	1957491	4081392	3.13
Sep-05	4458	132263	2254378	2098263	4352641	3.04

Month	Net Investment by FIIs (Rs.Crore)	Cumulative Net FII (Rs.Crore)	Market Capitalization at BSE (Rs.Crore)	Market Capitalization at NSE (Rs.Crore)	Total Market Capitalization (Rs.Crore)	% of Cumulative Net FII to Total Market Capitalization
Oct-05	-4627	127636	2065612	1927645	3993257	3.20
Nov-05	1874	129510	2323065	2166823	4489888	2.88
Dec-05	8361	137871	2489386	2322392	4811778	2.87
Jan-06	2756	140627	2616194	2434395	5050589	2.78
Feb-06	7436	148063	2695543	2512083	5207626	2.84
Mar-06	6430	154493	3022191	2813201	5835392	2.65
Apr-06	771	155264	3255565	2990200	6245765	2.49
May-06	-6647	148617	2842050	2612639	5454689	2.72
Jun-06	875	149492	2721678	2524659	5246337	2.85
Jul-06	1297	150789	2712144	2514261	5226405	2.89
Aug-06	5447	156236	2993780	2777401	5771181	2.71
Sep-06	6133	162369	3185680	2994132	6179812	2.63
Oct-06	8670	171039	3370676	3138319	6508995	2.63
Nov-06	10186	181225	3577308	3373652	6950960	2.61
Dec-06	-2766	178459	3624357	3426236	7050593	2.53
Jan-07	-1682	176777	3779742	3571487	7351229	2.40
Feb-07	8195	184972	3489214	3296931	6786145	2.73
Mar-07	361	185333	3545041	3367350	6912391	2.68
Apr-07	7721	193054	3828337	3650368	7478705	2.58
May-07	5320	198374	4074552	3898078	7972630	2.49
Jun-07	1102	199476	4168272	3978381	8146653	2.45
Jul-07	22609	222085	4529772	4317571	8847343	2.51
Aug-07	-7162	214923	4538006	4296994	8835000	2.43

Month	Net Investment by FIIs (Rs.Crore)	Cumulative Net FII (Rs.Crore)	Market Capitalization at BSE (Rs.Crore)	Market Capitalization at NSE (Rs.Crore)	Total Market Capitalization (Rs.Crore)	% of Cumulative Net FII to Total Market Capitalization
Sep-07	18788	233711	5202955	4886561	10089516	2.32
Oct-07	23090	256801	6332093	5722227	12054320	2.13
Nov-07	-6319	250482	6385475	5876742	12262217	2.04
Dec-07	8891	259373	7169985	6543272	13713257	1.89
Jan-08	-11082	248291	5796079	5295387	11091466	2.24
Feb-08	4230	252521	5888448	5419942	11308390	2.23
Mar-08	-1010	251511	5138015	4858122	9996137	2.52
Apr-08	-627	250884	5794293	5442780	11237073	2.23
May-08	-5174	245710	5428879	5098873	10527752	2.33
Jun-08	-11094	234616	4375022	4103651	8478673	2.77
July-08	1782	236398	4732545	4432427	9164972	2.58
Aug-08	46	236444	4778865	4472461	9251326	2.56
Sep-08	-5074	231370	4165388	3900185	8065573	2.87
Oct-08	-17205	214165	2997261	2820388	5817649	3.68
Nov-08	1617	215782	2818965	2653281	5472246	3.94
Dec-08	2377	218159	3144768	2916768	6061536	3.60
Jan-09	-3443	214716	2997261	2798707	5795968	3.70
Feb-09	-3124	211592	2862873	2675622	5538495	3.82
Mar-09	-5890	205702	3086076	2896194	5982270	3.44
Apr-09	8998	214700	3586979	3375025	6962004	3.08
May-09	17406	232106	4865046	4564572	9429618	2.46
June-09	4898	237004	4749935	4432596	9182531	2.58
Jul-09	13182	250186	5139943	4816459	9956402	2.51

Month	Net Investment by FIIs (Rs.Crore)	Cumulative Net FII (Rs.Crore)	Market Capitalization at BSE (Rs.Crore)	Market Capitalization at NSE (Rs.Crore)	Total Market Capitalization (Rs.Crore)	% of Cumulative Net FII to Total Market Capitalization
Aug-09	4523	254709	5285658	4975800	10261458	2.48
Sep-09	20573	275282	5708338	5353880	11062218	2.49
Oct-09	15973	291255	5374559	5024830	10399389	2.80
Nov-09	6181	297436	5793731	5430088	11223819	2.65
Dec-09	8711	306147	6079892	5699637	11779529	2.60
Jan-10	8413	314560	5924340	5782965	11707305	2.69
Feb-10	4363	318923	5903514	5755305	11658819	2.74
Mar-10	29438	348361	6164157	6009173	12173330	2.86
Apr-10	12393	360754	6281696	6117858	12399554	2.91
May-10	-6986	353768	6089681	5932578	12022259	2.94
Jun-10	11249	365017	6392378	6229136	12621514	2.89
Jul-10	24724	389741	6509222	6340120	12849342	3.03
Aug-10	14686	404427	6560104	6393418	12953522	3.12
Sep-10	32668	437095	7123774	6958534	14082308	3.10
Oct-10	24303	461398	7222857	7055094	14277951	3.23
Nov-10	21211	482609	7065715	6894912	13960627	3.46
Dec-10	3214	485823	7294570	7139310	14433880	3.37
Jan-11	5364	491187	6593176	6441491	13034667	3.77
Feb-11	-3270	487917	6340913	6195967	12536880	3.89
Mar-11	6883	494800	6836878	6702616	13539494	3.65
Apr-11	7196	501996	6905753	6753614	13659367	3.68
May-11	-4276	497720	6729515	6569743	13299258	3.74
Jun-11	4883	502603	6728515	6574743	13303258	3.78

Month	Net Investment by FIIs (Rs.Crore)	Cumulative Net FII (Rs.Crore)	Market Capitalization at BSE (Rs.Crore)	Market Capitalization at NSE (Rs.Crore)	Total Market Capitalization (Rs.Crore)	% of Cumulative Net FII to Total Market Capitalization
Jul-11	10653	513256	6617273	6462238	13079511	3.92
Aug-11	-7903	505353	6061626	5921684	11983310	4.22
Sep-11	-1866	503487	5953887	5820334	11774221	4.28
Oct-11	3079	506566	6240155	6101891	12342046	4.10
Nov-11	-3263	503303	5672255	5547723	11219978	4.49
Dec-11	21873	525176	5348645	5232273	10580918	4.96
Jan-12	26329	551505	6059347	5937039	11996386	4.60
Feb-12	35228	586733	6356697	6233250	12589947	4.66
Mar-12	1793	588526	6214941	6096518	12311459	4.78

Sources: Calculated on the basis of data from SEBI Hand book of Statistics on Indian Securities Market and SEBI Annual Report, RBI, Hand book on Indian Economy, BSE and NSE official sites.

3.10 FII AND INDIAN GROSS DOMESTIC PRODUCT (GDP)

Gross domestic product (GDP) is an important index to measure the current state of the economic activities of an economy. Correlating this figure with FII becomes more important as it displays the contribution of FII in the economic activities of a country. It has been observed statistically that over the last twelve years ranging from 2000-01 to 2011-12, Indian economy has grown many folds and on the same line has grown FII. As both have grown collectively and substantially in the last decade, it becomes desirable to study them in consonance with each other. In addition to FII share in the Indian stock market turnover and the market capitalization, their role in the Indian economy in terms of their contribution in Indian GDP becomes all the more important because normally higher the GDP of a country, more would be the flows of FII or vice versa.

In the Table 3.14, the data on the share of FII in the Indian Gross Domestic Product (GDP) has been displayed. As per this table, in 2000-01, the GDP of Indian economy at market price was Rs. 2168652 crore. In 2011-12, it went up to Rs. 8855797 crore. Thus, there was four times increase in its value during the last decade. The percentage of FIIs' total cumulative net investment to Indian GDP has also shown upward trends. This ratio which was 0.46 % in 2000-01 got increased to 0.80 % in 2001-02, 0.85 % in 2002-03, and gradually it got further increased to 6.65 % in 2011-12. This shows that FII role and contribution in the Indian economy has steadily been growing.

Table 3.14 : FII as a Percentage of India's GDP

Year	FIIs Gross Purchases (Rs.Crore)	FIIs Gross Sales (Rs.Crore)	Net FII (Gross Purchases – Gross Sales) (Rs.Crore)	Total Cumulative Net Investment by FIIs (Rs.Crore)	GDP at market Price (Rs. Crore)	% of FIIs Total Cumulative Net Investment to GDP
2000-01	74051	64118	9933	9933	2168652	0.46
2001-02	50071	41398	8763	18696	2348300	0.80
2002-03	47062	44372	2689	21385	2530600	0.85
2003-04	144855	99091	45764	67149	2837900	2.37
2004-05	216951	171071	45880	113029	3242200	3.49
2005-06	436976	305509	41467	154496	3693300	4.18
2006-07	520506	489665	30841	185337	4294700	4.32
2007-08	948018	881839	66179	251516	4987000	5.04
2008-09	614576	660386	-45811	205705	5630000	3.65
2009-10	846438	703780	142658	348363	6457300	5.39
2010-11	992599	846161	146438	494801	7674100	6.45
2011-12	921285	827562	93725	588526	8855797	6.65

Source: Calculated on the basis of data from RBI Hand Book of Statistics on Indian Economy, SEBI Handbook and Annual Reports

In order to study whether the contribution of FII in the Indian gross domestic product (GDP) is significant or not, **t-test** has been applied. The t-test has been applied with the null hypothesis that percentage of FIIs' total cumulative net investment to GDP is not significant; and with the alterative hypothesis that percentage of FIIs' total cumulative net investment to GDP is significant. As per the results, the t (calculated) statistics value (0.058747) is less than the t critical value (1.795885), and moreover the tail t value (0.477104) is more than 0.05 or 5% level of significance. Hence, the null hypothesis is accepted which states that percentage of FIIs' total cumulative net investment to GDP is not significant.

Thus, in the preceding pages, a large number of dimensions relating to FII have been discussed. It has been observed that on the one hand, huge investments have been made by the FIIs in the Indian capital market over the last twelve years from 2000 to 2012; on the other hand, it has also been evidenced that these huge investments have not hailed from a single country only, rather FIIs from a large number of countries have participated in the capital formation process in India over these years. It has also been observed that amongst the various components of FPI, FII has become the largest component. Equity market has come to become the preferred choice for investment by FIIs as compared to debt market. Moreover, when compared the assets under various custodians, FIIs have become the largest custodian to manage the assets under its preview. In the last, it has also been observed that FIIs have contributed substantially in the Indian economic growth in terms of enhancing liquidity of the Indian capital market, speeding up of the Indian stock market turnover, increasing the stock market capitalisation and finally contributing in the gross domestic product (GDP) of India.

CHAPTER – 4

DETERMINANTS OF FOREIGN INSTITUTIONAL INVESTMENT AND THEIR RELATIONSHIP STUDY

4.1 INTRODUCTION

Till the early 1990s, the flow of foreign capital was restricted by many countries including India under the policy of protectionism. At that time, there was huge dependence upon external financial aid and official development assistance. However, gradually, when hard pressed by the economic needs of their countries, the economies of most of the developing countries were opened by way of dismantling the so called capital controls. One of the main objectives for opening up of these economies was also to attract foreign capital, which, if accompanied by domestic capital would speed up the process of domestic growth, higher productivity and enormous output. Since then, portfolio flows from FIIs have emerged as the major source of capital for many emerging market economies (EMEs) like China, India, South Africa and Brazil. Besides this, the substantial increase in foreign portfolio flows since early 1990s till date was also attributable to many other factors like greater integration amongst major global financial markets, more advancement in information technology and growing interest amongst FIIs to invest into Emerging Market Economies (EMEs) through various investment alternative such as hedge fund, private equity funds etc. The underlying aim for this important move amongst FIIs was to achieve the objective of diversification in their international portfolio investment and also to reduce their risk factor.

As it is a well established fact that the economic growth of a country is a function of many developments like amount of total investment, speed of industrialization, process of capital formation and so on. It has been empirically experienced that FII flows do not create any financial liability. Rather, they are a good source of non-debt capital for the economy. Many Emerging Market Economies (EMEs) under the influence of same philosophy have not only been competing with each other but also trying to attract as much flows of foreign capital as possible. And in this direction, the flexible investment

norms and regulations along with fiscal advantages have been playing a positive role in enhancing FII flows amongst these countries. Furthermore, decent returns on the investments having been assured by these countries to these FIIs have also enabled them to make regular and sustainable investment flows.

Right from the time of introducing FII into the Indian economy till date, there have been regular discussions on the impact of FII flows on the economic health of the country in general and on the economic health of the Indian capital market in particular. On the one hand, the FII flows have enhanced liquidity of the global capital market; on the other hand, they have brought down the cost of capital substantially. In spite of all the good points, the FIIs have also been the victim of continuous criticism. The major negative points which have been raised against these FII flows include their inherent uncertain nature like preferring short term speculative benefits, hot money without commitment for a particular country or group of countries, herd mentality as investment strategy, return chasing behaviour and their undue impact on the volatility of the stock market.

In majority of the researches conducted on FII, the main focus has been on studying the impact of FII flows upon the Indian stock market or vice versa. And comparatively less work has been devoted on analysing the impact of FII flows on other important economic variables of the Indian economy like FERs, ER, and Inflation etc. In the light of the given scenario, the dynamic relationship study between FII flows and these variables becomes a desired one. With the same objectives in consideration, the present research work has been under taken with the support of empirical data.

The present chapter has included the discussion and analysis on the factors affecting FII flows in India, their relationship study through various statistical tools like Correlation Analysis, Bi-Variate Analysis, studying the impact of FII flows on the volatility of Indian stock market and FII forecasting for the future period.

4.2 FACTORS AFFECTING FII FLOWS IN INDIA

Over the years, FII has been a great support to the capital formation process in India. On the one hand, they have supported the process of domestic savings in the

country and on the other hand, they have enhanced the amount of domestic investment without increasing the foreign debt of the county. However, it is worth noticing that the concept of FII has come into prominence only after the liberalization of Indian economy in post nineties era as compared to the concept of FDI which has been in the existence for a long time back. It is also important to notice that as the nature of FII flows has been very dynamic over the past years, it has made it difficult to analyse the exact behaviour of foreign portfolio investment. This has probably been one of the underlying reasons that comparatively less number of research studies have been undertaken on the same subject till date. One common finding of these studies about the FII flows which has come to be accepted and found a good place in the literature on FIIs is that a large number of domestic and global factors have affected and have been affecting FII flows in the developing countries including India *(Gordan and Gupta, 2003).* The empirical studies on FII flows have classified these factors into two broad categories namely: pull (domestic) factors and push (global) factors. Pull or domestic factors are those which attract FII whereas push or global factors are those which compel the FIIs to move around across the countries with an object to invest their funds and earn better returns.

There have been also many pull or domestic factors which have been affecting FII flows in India. Some of the major factors amongst the same include return in the Indian share market, ER, economic reading of the Indian economy, risk in the Indian share market, home biasness on the part of FIIs, credit rating of the country, price-earning ratio of the companies in the domestic country, domestically available infrastructure facility, country risk and many other economic factors like industrial growth, inflation, FERs etc. In addition to this, some other factors which fall under the same category include politically and economically stable environment in the country, potential for growth opportunities, supportive policies of the host government towards FIIs , overall orientation philosophy towards privatization, congenial taxation policies, a supportive and enabling investment environment such as good governance practices, an effective legal system, better administrative machinery, a suitable regulatory regime and ultimately a positive investment climate.

The various push or global factors which have been affecting FII flows in India include performance of other countries, global liquidity, interest rates in global market, tax heaven countries, the drivers in the global market, probability of global crisis, herding mentality of FIIs and so on. It has been surprisingly observed that the FII flows which have been pulled by domestic factors have been found more sustainable as compared to the FII flows pushed by global factors. Moreover, in the earlier case, sustainability of FII flows have depended more on the economic and political stability of the host country along with its continuous regime for economic reforms in foreign investment. The discussion on these pull and push factors has been undertaken in the following pages:

4.2.1 Domestic Factors or Pull Issues

Domestic factors are those factors which attract more FII in the domestic country. Some of the major domestic factors affecting FII flows in India have been discussed as below:

i) Return in Indian Share Market

This is one of the main factors which FIIs consider while investing in a country. As the main purpose of FIIs is to get maximum returns on their investment, they always keep an eye on the stock market whose price movements (if estimated correctly) would offer good returns for them. A strong correlation (0.94) supporting the above fact has been found between MSCI India Index and FII flows in 2006 as well as in *2012 (Business line, 4 May, 2013).* Thus, as over the years, Indian stock market has been offering a good return as compared to other emerging markets, FIIs have been investing substantially in India to diversify their portfolio and to earn better return.

ii) Exchange Rate

It is also one of the most important factors which affect FII flows as the final investment by FIIs has to get transacted through the rupee value. The value of rupee is a variable factor which depends on the demand and supply forces. Rupee appreciation with respect to dollar has had a positive correlation with FII flows *(Raju, 2010).* The correlation has been found to be 0.9 in the financial year 2007 as well as in 2011. For

example, in the financial year 2011, there was a big loss of rupee depreciation and the result was quite negative in terms of less FII flows and consequently, there was also a loss of 24.6 % in the value of Sensex. But in 2007, rupee value remained more consistent; it resulted in heavy FII inflows into Indian capital market. This positive relationship has been possible due to the fact that more FII inflows lead to more FERs. This in turn leads to better balance of payment position which has a positive impact on the rupee value.

iii) Economic Reading of the Indian Economy

Generally, FIIs read and study the actual economic fundamentals of an economy before they invest into the same. More importantly, sometimes, they also analyse the growth potential of the economy in term of getting better returns in the long term. They give more weightage to this fact, even sometimes more than the weightage given to the economic fundamentals of the country. The same has been the experience which the Indian economy has tasted for the last few years. For example, in 2009 when the Indian economy showed some features of stagnation like economic growth hovered around 6.5 %, industrial growth decelerated to a level of 2.8 % and wholesale inflation was as high as 8.45 % (*Economic Outlook Surveys, 2010-11).* It was found by the study that FII inflows (net investment) clocked as high as Rs 142658 crore during the year 2009-10. The same story was repeated in 2011-12, when the India's GDP hovered around 4.5 % to 6 % and industrial production growth came down to - 0.5%, FIIs invested heavily to the level of Rs 93725 crore in that year in the Indian economy.

iv) Risk in Indian Share Market

Another factor that affects FII flows in India is the risk perception of FIIs about India as a potential country in general and the Indian security market in particular. Sustained momentum in domestic economic activity, positive investment climate, long term views about India as an investment destination and higher return from Indian capital market have helped in creating a lower risk perception amongst the FIIs *(RBI research paper, Mohan, 2008).* This has further facilitated more FII flows in the Indian capital market.

It was the result of the same fact that the net FII flows in India have increased from US $ 7 billion in 1990-91 to US $ 45.8 billion in 2006-07. This investment has touched the mark of US $108 billion in 2008-09. Further, over the last few years, it has also been the experience that as the FIIs are risk averse financial players, they have generally channelized their investment in such a manner that there are maximum returns with minimum risk. Thus, higher the risk perception, lesser would be the FII flows or the opposite situation would prevail. The same has been held true with FIIs experience in India.

v) Home Biasness

Globally, it has been witnessed that a major portion of the equity capital of the corporate houses is held by the domestic players. This phenomenon is called 'home biasness'. There are many reasons behind this philosophy of home biasness. Amongst many, some major reasons for home biasness include different taxation policies by different governments, existence of information asymmetry in various countries and so on. Information asymmetry means that information does not float freely in terms of time and its availability; and consequently all the investors including FIIs happen to be at the disadvantage. Under such situation, their investment decisions are guided more by other factors than the equity return. However in case of information symmetry (when information is freely available to domestic investors and foreign investors), FIIs' investment decisions are more guided by the equity returns. It has been observed that the home biasness of foreign investors against India started getting reduced by the early part of 2000, one decade after India opened its door for FII flows (*Working Group Report on Foreign Investment, 2010).* Subsequently, untouched by the phenomena of home biasness, FIIs have been investing in large quantities in Indian companies, as the returns offered by the Indian economy have surpassed their expectations.

vi) Credit Rating

In the present time featured by more awakening about the quality of system prevailing in a country and its (country's) approach towards social responsibility, FIIs have started giving more importance to the credit rating given by various international

credit rating agencies. As credit is the sign of credit worthiness, the countries with high credit rating happen to attract more FIIs or vice versa. In the financial year of 2011-12, when majority of developed countries were struggling to maintain their credit ratings, two international credit rating agencies namely DBRS and Moody upgraded the sovereign rating of India (*Economic Survey, The Ministry of India, 2011-12*). And as a result, there have been huge flows of FII in that year in India. For the same year, as the Moody's rating has gone up from Ba1 to Baa3 in case of long term government bonds and has gone up from NP to P-3 in case of short term government loan; it has resulted in large FII flows in India touching the level of Rs. 30376 crore till December 2011.

vii) Price- Earning Ratio

In addition to the factors mentioned above, FIIs also analyse the price-earning ratio while investing their funds into a particular country. Normally higher the price earning ratio of a country, better are the chances of growth of that country. It will also offer better returns which is the main objective of FIIs. As per the observations, in 2005, the overall price-earning ratio of Indian companies was 23.1 % as compared to 10 % price earning ratio of Brazil. And the net FII flows in India touched the figure of Rs 41663 crore in that year *(Prasanna, 2005).*

viii) Infrastructure Facility

Further, it has also been the experience that a country with better infrastructure facilities in financial market like legal and controlling mechanism, size of the market, degree of liquidity in the market, trading costs and information availability can attract more foreign portfolio investment than the countries without having these facilities *(Prakash, 2012).*

ix) Country Risk

This is one of the important factors which may also have an impact on FII flows in a country like India. Country risk means the totality of all types of risks existing in a country like political instability, bad economic conditions etc. However, on the contrary, it has been evidenced that when the FIIs foresee a hidden growth potential in an economy, they do not hesitate in investing more in that country (*Chakrabarti,2001).*

x) Macroeconomic Issues

In addition to all the above mentioned factors, there are many other macroeconomic factors which also affect the FIIs investment strategy in countries including India. Some of the major variables amongst those are macro level policy developments like Capital Account Liberalisation, Industrial Growth Rate, Inflationary Trends in the Indian Economy, FERs and so on *(Khanna, 2002).*

4.2.2 International Factors or Push Issues

In addition to the above mentioned "domestic factors or Pull Issue", there have also been many other global factors (called Push Issues) which have been affecting the FII flows in India. These factors are discussed as follows:

i) Performance of Other Countries

Globally speaking, the flows of FII to a great extent depend upon the economic performance of various trading groups (group of countries) whose member a country (here India) happens to be. For example, there was a strong correlation found between the FII flows into India and the performance of BRIC countries. Underperformance of Russian and Brazilian capital markets could partly be held responsible for the changing flows of foreign institutional investment in India. During April 2010 to September 2010, on the one hand, Brazil GDP growth rate was 1.2 % and on the other hand, Russian equity market continued to underperform. Under this given international economic scenario, Indian economy experienced a large flows of FII touching the level of Rs 32668 crore in that year alone. This was also one of the main reasons for the boosted performance of Indian capital market in September 2010.

ii) Global Liquidity

As per the experience of Indian economy with the rest of the world, this has been another factor which has had good impact on FII flows in India. It has been experienced that due to the rise in global liquidity brought in by the quantitative easing by central banks in Europe and the US, the emerging markets including India has seen lot of money flowing into it. Indian capital market received US $ 20 billion from January 2012 to

November 2012 which has been the second highest inflows since 1993 *(The Wall Street Journal dated 5, 2012).*

iii) Interest Rate in Global Market

It has been empirically stated that FII flows in debt instruments depend upon the interest rate prevailing in the world market. For example, in order to ensure more borrowings from its economy by foreign players, bank of Japan maintained a low rate of interest policy. Moreover, in India, the interest rate on 10-year central government bonds was 7.15 % during October 2005, while the same rate of interest was 4.39 % and 1.57 % in case of USA and Japan respectively *(Expert Group Report on FII flows, GOI , 2005).* As a result, a large number of FIIs borrowed funds from Japan and invested in many countries with high growth potential like India. In the same manner, when the central bank of America lowered its interest rate, it also resulted into dollar carry trade and thereby huge FIIs inflows got transferred from USA to India. This shows that to a great extent, the FII flows depend on the interest rates prevailing in the world market.

iv) Tax Heaven Countries

As per the data with SEBI, the FII flows from the tax heaven countries have been taking place in India, particularly in the form of participatory notes. As per the Indian regulator, a huge portion of the total investments by FIIs happen to be in the form of participatory notes (P-Notes). P notes are issued by FIIs to the entities registered outside India. Some of these countries called 'Tax Heaven countries' include Singapore, Switzerland, Luxemburg, Mauritius and Honk Kong. From Mauritius alone with whom India has a special double taxation avoidance tax treaty, assets worth US $ 56 billion were managed by its FIIs during April 2012. This was followed by US $ 25 billion assets under FIIs hailing from Singapore. And US $ 17 billion assets under the custody of FIIs were received from Luxemburg *(Financial Express, 28 May, 2012).* It is also worth noting here that in February 2012, when General Anti-Avoidance Rules (GAAR) was made part of the Indian Union Budget announcement, a sharp decline in FII flows was witnessed in India. This trend got reversed only with the postponement of GAAR. This shows the importance of tax heaven countries in terms of FII flows emanating from there.

v) The Drivers in Global Market

Sometimes, it has also been observed that FIIs are more influenced by the better timings of economic growth in their domestic countries rather the domestic fundamentals of the host countries. The reason for the above preposition accounts for the fact that FIIs after earning good returns also prefer to diversify their investment and explore other economies with hidden growth potential. For example, in 2010, the good flows from USA also coincide with the fact that during that year USA economy experienced a positive growth of 2.33 % from the negative growth of 3 % in the previous year. Again, in 2012, When USA experienced an increase of 0.4 % in its growth rate and Japan experienced an increase of 2.5 % in its growth, the same trend of FII flows was witnessed in these countries. However during the same year, India's economic growth went down, but still India managed to attract FII flows worth US $ 19 billion in that year *(Business line, 4th May, 2013).*

vi) Global Crisis

Global crisis is one of the underlying factors which has been affecting FII flows in India. For example, in 1997, the crisis of East Asian Currency affected most of the countries namely Malaysia, South Korea, Indonesia, Thailand and Philippines. Its effects were also felt in India. On the same line, the subprime crisis which originated in USA in 2008 has also negative hit on the FII flows in India. During that year alone, Sensex crumbled smashingly. It lost 56 % of its value from 20873 high points as on 8th January, 2008 to 9093 points as on 28th November, 2008. A total outflow of Rs. 55000 crore was made by FIIs from the Indian stock market in that year alone *(Joseh, 2009).*

As per the discussion in the preceding pages, it has been observed that there have been many factors and determinants which have affected and have been affecting FII flows in India. In actual practice, it is difficult to determine and zero in on which particular domestic and global factors exactly affect the flow of foreign capital in any economy including India. In the light of this background, genuine efforts have been made through this research work for studying and analysing these factors along with their

relationship study. The description of the major factors included in this study is given below:

4.2.3 Determinants used for Relationship Study

i) FIIs

FIIs are the specialized financial intermediaries which manage the savings collectively on behalf of their investors. They are the investing bodies which are registered outside the countries where they invest and plan to invest. They have specific objectives to be achieved in terms of risk, returns and maturity claims. Some of the entities which are eligible to get registered as FIIs include banks, trustees, pension funds, mutual funds, assets management companies, nominee companies, power of attorney, investment trusts, endowments funds, university funds, charitable funds, university trusts or charitable societies. All the above entities need to get registered with SEBI before they start trading operations in the Indian capital market *(Siddaiah, 2009).*

ii) BSE Index (Sensex)

Sensex is one of the most famous indices amongst all the indices of the companies registered with BSE. The BSE Sensitivity index of equity shares was launched in 1986. It comprises shares of 30 companies which represent almost all the sectors of the Indian economy. The major criterion for selection of scrip in the Sensex is its large market capitalization. The base year of this index is 1978-79 and the base used for this index is 100. This index is based on the scientific method of free float market capitalization. The coverage of print media as well as electronic media of the country and the world covers this index exclusively. The basic purpose for which this index is used and analysed is to calculate the yield from the 30 major companies constituting the index. Normally, it has been experienced that when the Sensex value goes up, there are more FII flows with an expectation to earn more returns and to take advantages of the bullish trends of the Indian stock market or the opposite prevails in the market. In other words, there happens to be a positive correlation between the FII flows and the Sensex value. Though it needs to be further explored with more depth and breadth.

iii) Wholesale Price Index (Inflation)

The term inflation simply means a general continuous increase in the prices paid by the consumer or decline in the purchasing power of the currency. The simple interpretation of this term is that when inflation in the host county (here India) goes up, the purchasing power of its currency goes down. So inflation is one of the important variables which affect the real cash flows of the investors because before investing they convert their foreign currency into the currency of the host country (here India). In this study, the time series data for wholesale price index (WPI) has been used as a measure of inflation in the Indian economy.

iv) Foreign Exchange Reserves (FERs)

One of the major indicators of a country's well being and its good health is the amount of FERs, it enjoys to have. This is the amount of foreign currency along with gold and SDRs, held by a country in its foreign kitty. Normally higher the amount of FERs showing more resilient economy more happens to be the flows of FIIs or vice versa provided other factors remain constant.

v) Exchange Rate (ER)

In simple words, the ER is the number of domestic currency units which can be purchased in exchange of one unit of foreign currency. For example, how many units of the Indian currency can be bought with one USA dollar is the exchange rate of Indian currency for the dollar. As FIIs invest their money across countries of the world, they convert their domestic currency into the currency of the host country (the country where they are going to invest). Hence, ER plays a very important role in the investment decision making process of FIIs. Moreover, as the FIIs prefer to play short, the changing value of the foreign currencies become one of the most critical inputs in deciding which country to enter, to continue or to exit.

4.3 RELATIONSHIP STUDY BETWEEN FII AND OTHER ECONOMIC VARIABLES

4.3.1 Correlation Coefficient

The correlation is one of the most commonly and handy statistical tools which indicates the strength as well as the direction of a linear relationship between the two variables. A correlation is a single numerical value that lies between 1 and – 1. If it is 1, it shows that there is perfect positive correlation between the two variables. It further confirms that in case, there is an increase in one variable, there will also be an exact increase in another variable. If the value of correlation happens to be -1, it shows that there is perfect negative correlation between the two variables, i.e. in case there is an increase in one variable, there will be an exact decrease in another variable *(Gupta, 2007).*

In the present research study, correlation co-efficient has been calculated to understand the relationship between net FII flows and various other economic variables like BSE Sensex, FERs, ER and Inflation. The differenced time series based on monthly data from 2000 to 2012 for all these variables under study have been used for this analysis. By differencing all the time series have been made stationary. The result of correlation matrix is presented in the Table 4.1.

Table 4.1 : Correlation Co-efficient Matrix between Net FII Flows and Other Variables

	DFII	**DSensex**	**DER**	**DFER**	**DWPI**
DFII	1	NA	NA	NA	NA
DSensex	0.40012	1	NA	NA	NA
DER	-0.04122	-0.30686	1	NA	NA
DFERs	0.252467	0.908225	-0.03958	1	
DWPI	-0.00041	0.422219	-0.13036	0.430064	1

Notes: D refers to 'differenced variable' to address 'stationary' issue in the time series data.

DFII: Differenced Foreign Institutional Investment, DSensex: Differenced Sensex, DER: Differenced Exchange Rate, DFERs: Differenced Foreign Exchange Reserves, DWPI: Differenced Wholesale Price Index (Inflation)

As per this table, it is found that net FII flows and the BSE Sensex share a positive correlation. The degree of correlation between the two variables is 0.40. This means that a positive change in one variable is followed by a positive change in another variable or a negative change in one variable is followed by a negative change in another variable. In other words, it is observed that the relationship between the two variables moves in the same direction. So it is safely concluded that when Sensex goes up, it happens to attract more FII flows; and when Sensex goes down, it motivates the FIIs to withdraw money from the Indian economy. But this co movement or relationship does not confirm that the behaviour of one variable is causing changes in the behaviour of another variable.

Further, the table displays that the degree of correlation between FII flows and FERs is found to be 0.25. This shows that there is also a positive co-movement between FII inflows and FERs. It reflects that if FII flows get increased through government supportive policies for FII, this would, on the one hand, add up to the FERs kitty, and on the other hand, it would help India in managing its current account deficit (CAD). And if the FII flows in the Indian economy are not good, it would bring down the corpus of FERs making it difficult for India to manage its current account deficit. Thus, in order to manage its balance of payment position more effectively, India needs to attract more FII.

This table also shows that the degree of correlation between FII and ER has been found to be negative (-0.041). This means, when the flows of FII in India go up, it brings down the value of dollar. The underlying reason for this negative relationship is that when FIIs make investment, they buy Indian currency and sell dollar in the market bringing down the value of dollar. Likewise a negative correlation (-0.0041) has been found between FII flows and Inflation. This shows that when there are inflationary trends in the Indian stock market, FIIs prefer to avoid to invest in India because during inflation the purchasing power of rupee goes down which makes it a costly affair for FIIs to invest in India or vice versa is held good.

Apart from the above calculations, a negative relationship (-0.30) has been found between the BSE Sensex and the ER, indicating that massive flows from FIIs into India exert downward pressure on US dollar and upward pressure on the Indian rupee.

However, the relationship between BSE and FERs has been found to be positive (0.90) indicating that upward trends in BSE attract more FIIs thereby increasing the Indian kitty of FERs or vice versa. This also supports the underlying theory that when more and more foreign capital money flows in, it adds to the amount of FERs and the same is reflected in the growth of the Indian stock market as the country enjoys it as one of its strong economic fundamentals.

Similarly a positive relationship (0.42) has been found between BSE and Inflation. This indicates that higher the value of BSE, more will be the money flows into the system and thereby it will lead to inflationary trends in the economy. As per the table, a negative correlation (-0.039) has been observed between FERs and ER. This shows that whenever FERs go up, the ER goes down or vice versa. Similarly there is found to be a negative correlation (-0.13) between Inflation and ER which indicates that weaker the value of rupee, higher will be the inflation. The underlying principle is that more money is required to buy the shares of same worth as the purchasing power of the rupee goes down. Hence it is concluded that when ER value goes down, inflation goes up.

However, the relationship between Inflation and FERs has been found to be positive (0.43). This shows that there is positive co–movement between the two i.e. increase in foreign exchange is followed by increase in inflation. Though an effort has been made in the preceding paragraphs for the relationship study through correlation technique, it does not tell us the causality between the variables. So in order to have a more in-depth study of the dynamic relationship between the variables under study, modern statistical tools like Granger Causality test, Variance Decomposition test and Impulse Response Function technique have been applied in this research work.

4.3.2 Bi-Variate Analysis (Granger Causality Test)

Granger Causality test is one of the important tools of analyzing causality amongst the variables. Firstly, in the year 1969, this test was introduced. It was in 1972, when it was made more popular by one of the famous statisticians named Simsin. The basic objective of this test is to know the direction of causality from one variable to another or vice versa or all the variables having bi directional causality or having no

causality at all. As per the meaning of granger causality test, a given time series x is said to be granger caused by another time series y, provided that the time series y is predictable more accurately with help of the past values of x time series rather than otherwise, with the condition that all the other variables remain constant.

Hypothesis to be tested using Granger Causality: For this study, the following hypotheses have been framed and have been investigated and interpreted with the application of various econometric models:

Table 4.2 : Hypothesis Formation

S.No	Null Hypothesis (H_0)	Alternative Hypothesis (H_1)
1	FII does not granger cause Sensex Sensex does not granger cause FII	FII does granger cause Sensex Sensex does granger cause FII
2	FII does not granger cause FER FER does not granger cause FII	FII does granger cause FER FER does granger cause FII
3	FII does not granger cause ER ER does not granger cause FII	FII does granger cause ER ER does granger cause FII
4	FII does not granger cause Inflation Inflation does not granger cause FII	FII does granger cause Inflation Inflation does granger cause FII

Before this test is applied, the following conditions have been fulfilled:

- All the time series to be used for analysis have been checked for their stationarity and in case of non-stationary series; the same has been converted into stationary.
- The lag length selection has been made as per the relevant criteria.

4.3.3 Test of Stationarity or Unit Root Test -ADF

Broadly speaking, when the mean value and the variance value of a given time series does not change or they remain constant over a period of time; and the co variance value of that time series also depends only upon the lag or the distance between the two time periods and not on the basis of actual time at which the co variance value is calculated, the time series is said to be stationary *(Gujrati 2003).* There are many

methods to determine whether a time series is stationary or non- stationary. Amongst them, one of the most popular methods named Augmented Dicker Fuller (ADF) has been applied in the present study to decide the stationarity of the time series. ADF is one of the main and famous methods for stationarity analysis. It is a modified version of the original version of Dicker Fuller test. As per ADF test, a parametric correction is made in the original version of Dicker Fuller test for the purpose of higher order correlation. One of the main assumptions for this is that the time series follows an autoregressive process (AR-p). Under this version of ADF, higher–order correlation is controlled by adding lagged difference terms of the dependent variable to the right hand side of the regression.

As there are five time series in the present study namely FII, BSE Sensex, FERs, ER and Inflation, all these have been tested for their stationarity by using the following form of ADF regression equation :

$$Y_t = \beta_1 + \beta_{2t} + \delta Y_{t-1} + \alpha_i \sum_{i=1}^{m} \Delta_{t-1} + \epsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$

Where ϵ_t is a white noise error term and Y_{t-1} means additional lagged terms with an idea to ensure that the error terms are not correlated.

β_1, β_2, δ, α are the coefficients where δ is the first difference operator which is equal to (p-1), estimated to test the null hypothesis that $\delta = 0$.

If δ is equal to 0, it means that there is no unit root which implies stationarity in the series under consideration.

Hypothesis for Checking the Stationarity of Time Series:

Null Hypothesis (H_0): FII /FERs/ER/Inflation/Sensex is non-stationary time series or it has unit root.

Alternative Hypothesis ($H_{a)}$): FII /FERs/ER/Inflation/Sensex is stationary time series or it has no unit root.

The values of ADF statistics for FII, Sensex, FERs, ER and Inflation are shown in the Table 4.3. In this table, the various variables (FII, Sensex, FERs and ER) have been taken vertically and the t statistics, level of significance and probability values have been

taken horizontally. Moreover, t statistics values have been taken at intercept, at trend and intercept ; and without intercept.

Table 4.3 : ADF Test Statistics for Various Variables

Variables	t-statistics, Level of Significance and Probability	At intercept	At Trend and Intercept	At None/Without Intercept	Status of Time Series
FII	t-statistics	-3.988072	-9.043003	-3.171959	Stationary
	1 %	-3.477144	-4.023506	-2.581466	
	5 %	-2.881978	-3.441552	-1.943107	
	Probability	0.0020	0.0000	0.0017	
Sensex	t-statistics	-0.842398	-2.308930	0.402762	Non-Stationary
	1 %	-3.476472	-4.023506	-2.581233	
	5 %	-2.881685	-3.441552	-1.943074	
	Probability	0.8036	0.4261	0.7984	
FERs	t-statistics	0.844295	-2.038005	0.801215	Non-Stationary
	1 %	-3.476472	-4.023506	-2.581233	
	5 %	-2.881685	-3.441552	-1.943074	
	Probability	0.9945	0.5753	1.00000	
ER	t-statistics	-1.754538	-1.678548	0.680221	Non-Stataionary
	1 %	-3.476805	-4.023975	-2.581349	
	5 %	-2.881830	-3.441777	-1.943090	
	Probability	0.4018	0.7558	0.8616	
Inflation	t-statistics	-4.682509	-5.377640	-3.144669	Stationary
	1 %	-3.477487	-4.024935	-2.582734	
	5 %	-2.882127	-3.442238	-1.943285	
	Probability	0.0002	0.0001	0.0320	

From this table, it is observed that t-statistics for FII at intercept, at trend and intercept, and at none are -3.988072, -9.043003 and -3.171915 respectively. As all the values (ignoring signs) are more than the test critical values at 1 % and 5% level of significance, this proves that the net FII time series is a stationary time series.

The t-statistics for Sensex at intercept, at trend and intercept, and at none are -0.842398, - 2.308930 and 0.402762 respectively. All the values (ignoring signs) are less than the test critical values at 1 %, and 5% level of significance. This proves that the Sensex time series is a non-stationary time series.

The t-statistics for FERs at intercept, at trend and intercept, and at none are 0.844295, -2.038005 and 0.801215 respectively. As all the values (ignoring signs) are less than the test critical values at 1 % and 5% level of significance. This proves that the FERs time series is a non-stationary time series.

The t-statistics for ER at intercept, at trend and intercept, and at none are -1.754538, -1.678548 and 0.680221 respectively. As all the values (ignoring signs) are less than the test critical values at 1 % and 5% level of significance. This proves that the Exchange Rate time series is a non-stationary time series.

The t-statistics for inflation at intercept, at trend and intercept, and at none are -4.682509, -5.377640 and -3.144669 respectively. As all the values (ignoring signs) are more than the test critical values at 1 % and 5% level of significance. This proves that the Inflation times series is stationary series.

As the time series of Sensex, FERs and ER have been found to be non-stationary, the same have been converted into stationary time series by the process of differencing.

- **Conversion of Non Stationary Series into Stationary with differencing:** The time series of Sensex, FERs and ER have been converted into stationary time series by the process of differencing them. After the process of differencing, the newly generated the results of Augmented Dicker Fuller (ADF) have been shown in the following Table 4.4.

Table 4.4 : ADF Results after differencing the Non Stationary Time Series

Variable	t-statistics, Level of Significance and Probability	At intercept	At Trend and Intercept	At None/Without Intercept	Remarks
Sensex	t-statistics	-11.40076	-11.36117	-11.37313	Stationary
	1 %	-3.476805	-4.023975	-2.581349	
	5 %	-2.881830	-3.441777	-1.943090	
	Probability	0.0000	0.0000	0.0000	
FERs	t-statistics	-9.871072	-9.916923	-4.183870	Stationary
	1 %	-3.476805	-4.023975	-2.581584	
	5 %	-2.881830	-3.441777	-1.943123	
	Probability	0.0000	0.0000	0.0000	
ER	t-statistics	-7.874217	-7.896633	-7.850723	Stationary
	1 %	-3.476805	-4.023975	-2.581349	
	5 %	-2.881830	-3.441777	-1.943090	
	Probability	0.0000	0.0000	0.0000	

As per the Table 4.4, the t-statistics for Sensex at intercept, at trend and intercept, and at none are -11.40076, -11.36117 and -11.37313 respectively. All the values (ignoring signs) are more than the test critical values at 1 % and 5% level of significance. This proves that the Sensex time series has become a stationary time series.

The t-statistics for FERs at intercept, at trend and intercept, and at none are -9.871072, -9.916923 and - 4.183870 respectively. As all the values (ignoring signs) are more than the test critical values at 1 % and 5% level of significance. This proves that the FERs time series has become a stationary time series.

The t-statistics for ER at intercept, at trend and intercept, and at none are -7.874217, -7.896633 and -7.850723 respectively. As all the values (ignoring signs) are

more than the test critical values at 1 % and 5% level of significance. This proves that the ER time series has become a stationary time series.

The summary on the nature of all the time series (FII and Inflation with original values and Sensex, FERs, and ER after conversion through differencing) has been provided in the Table 4.5.

Table 4.5 : Summary on Checking the Stationarity of all Variables and Their Conversion from Non-stationary into Stationary Time Series

Variable	Status at Original Value	Converted Status for Further Usage
FII	Stationary Series	Stationary Series
DSensex	Non-Stationary Series	Stationary Series
DER	Non-Stationary Series	Stationary Series
DFERs	Non-Stationary Series	Stationary Series
INF	Stationary Series	Stationary Series

DSensex = Differenced Sensex, DFER = Differenced foreign exchange reserves, DER=Differenced Exchange rate.

As per the Table 4.5, all the variables have been converted into stationary time series character which has made it usable for the further analysis. Thus all the data with stationary character have been used for further analysis.

4.3.4 Testing for Selection of Proper Lag Length

One of the important conditions for the application of Granger Causality test is to select the appropriate lag length for each pair of variables. For this objective, Akaike information criterion (AIC) has been used for choosing optimal lag order selection. Initially in 1974, it was Hirotsugu Akaike who proposed the AIC criteria for the selection of lag length. Basically, AIC is used to find the goodness of fit of any econometric model. It tells how much information would be lost when a particular model or set of models would be applied to explain the reality in case of granger causality test. It tries to

maintain a balance between variance and degree of biasness in the model fitting process. In simple words, it tries to fit a model between the two extremes of complexity and simplicity. So it is observed that AIC discourages the over fitting and the value assigned by AIC is meant only to rank the models and find out the best one from different available models. It is important to note that the value of AIC is nowhere else used in the estimation and hypothesis testing.

In general case, Akaike Information Criteria means AIC = 2k-2L

Where k means the number of parameters in the statistical model and L means the maximized value of the likelihood function for the estimated model.

Table 4.6 : Results of AIC (Akaike Information Criteria)

Lag	AIC Value
1	54.59
2	54.25
3	54.27
4	54.22
5	54.08
6	54.15

As per the Table 4.6, as the value of AIC is least at lag 5; hence lag length 5 has been chosen and used as an input for applying granger causality test.

4.3.5 Co integration Analysis for VAR Model Selection

In simple words, co integration checks the long term association between the variables. In this research study, Johansenn Co integration Model has been applied to check whether the four variables under consideration are co integrated or not. In case, they are found to be co integrated, the restricted VAR (Vector Auto Regression) or VECM (vector error correction model) is the best fit to be applied in the granger causality

model or in case the variables are not co integrated, unrestricted VAR is the best fit to be applied for granger causality model.

Table 4.7 : Results of Johansenn Co integration Model

Hypothesized No. of Co integration	Trace Statistics	0.05 Critical Value	Probability
None *	69.99553	69.81889	0.0484
At most 1	41.28164	47.85613	0.1799
At most 2	18.81768	29.79707	0.5061
At most 3	4.879701	15.49471	0.8215
At most 4	0.099153	3.841466	0.7528

Trace test indicates 1 co integrating equation (s) at the 0.05 level

*** denotes rejection of the hypothesis at the 0.05 level**

As per the Table 4.7, as p value (0.0484) is less than 0.05 or 5 % as per Trace Statistics, the null hypothesis that there is no co integration is rejected. Rather this test indicates that there is a long term association amongst the four variables with one co integration equation. As the variables are co integrated, Vector Error Correction Model (VECM) has been used. It is worth to note that when Vector Error Correction Model (VECM) is used, it makes the time series stationary automatically.

4.3.6 Relationship Study through Granger Causality Test

As all the variables have been well chosen and explained, all the times series of the shortlisted variables have been made stationary, after choosing the lag length and selection of VAR model, granger causality test has been applied to analyse whether there is any casual relationship between the variables under study in the long run. As it is a known fact that the granger casualty is a bi-variate analysis, hence, we have developed two equations for each and every variable under study one by one:

FII and Sensex pair of regression equations are:

$FII_t = \sum_{i=1}^{n} \alpha_i Sensex_{t-1} + \sum_{i=1}^{n} \beta_i FII_{t-1+} \mu_{1t}$ .....

$Sensex_t = \sum_{i=1}^{n} \lambda_i FII_{t-1} + \sum_{i=1}^{n} \delta_i Sensex_{t-1+} u_{2t}$ .....

FII and Foreign Exchange Reserves (FERs) pair of regression equations are:

$FII_t = \sum_{i=1}^{n} \alpha_i FER_{t-1} + \sum_{i=1}^{n} \beta_i FII_{t-1+} \mu_{1t}$ .....

$FER_t = \sum_{i=1}^{n} \lambda_i FII_{t-1} + \sum_{i=1}^{n} \delta_i FER_{t-1+} u_{2t}$ .....

FII and Exchange Rate (ER) pair of regression equations are:

$FII_t = \sum_{i=1}^{n} \alpha_i ER_{t-1} + \sum_{i=1}^{n} \beta_i FII_{t-1+} \mu_{1t}$ .....

$ER_t = \sum_{i=1}^{n} \lambda_i FII_{t-1} + \sum_{i=1}^{n} \delta_i ER_{t-1+} u_{2t}$ .....

FII and Inflation (INF) pair of regression equations are :

$FII_t = \sum_{i=1}^{n} \alpha_i Inflation_{t-1} + \sum_{i=1}^{n} \beta_i FII_{t-1+} \mu_{1t}$ .....

$Inflation_t = \sum_{i=1}^{n} \lambda_{i\,i} FII_{t-1} + \sum_{i=1}^{n} \delta_i Inflation_{t-1+} u_{2t}$ .....

In the above equations, FII, Sensex, FERs, ER and Inflation are the variables to be tested.

α_i, β_i, λ_i, δ_i are the coefficients which explain the relation of dependent variable with the lag terms of independent variable and the lag terms of dependent variable itself.

t is the period and I is the number of lags.

u_{1t} and u_{2t} are the disturbances/ white noise errors/residuals which are assumed to be mutually uncorrelated.

The results obtained from the application of granger causality test about all the time series are summarized in the Table 4.8. The Table 4.8 shows the result of granger causality test of five time series namely FII, BSE Sensex, FERs, ER and Inflation. This table indicates that p value for the null hypothesis that FII does not granger cause Sensex

is 0.0236. This value is less than 0.05, so the null hypothesis is rejected concluding that FII does granger cause Sensex.

This means that one of the reasons for increase or decrease in Sensex is attributed to FII flows. The value of p for the null hypothesis that Sensex does not granger cause FII is 0.0041 which is also less than 0.05 thereby accepting the alternative hypothesis that Sensex also affects the FII flows. The conclusion for these variables is that FII as well as Sensex do affect each other in the long run. Hence there is a bidirectional causality between these two variables in the long term.

Table 4.8 : Results of Granger Causality Test

Null Hypothesis (H_o)	**Probability Value**	**Acceptance or Rejection Status for Null Hypothesis**	**Direction of Casualty**	**Nature of Causality**
FII does not granger cause DSensex	0.0236	Rejected	FII → DSensex	Bidirectional
DSensex does not granger cause FII	0.0041	Rejected	DSensex → FII	
FII does not granger cause DFERs	0.2034	Accepted	FII ≠ DFER	No Causality
DFERs does not granger cause FII	0.2726	Accepted	DFER ≠ FII	
FII does not granger cause DER	0.0457	Rejected	FII → DER	Bidirectional
DER does not granger cause FII	0.0018	Rejected	DER → FII	
FII does not granger cause Inflation	0.0496	Accepted	FII → INF	Unidirectional
Inflation does not granger cause FII	0.8095	Rejected	INF ≠ FII	

This table also reveals that in case of the next two null hypotheses between FII and FER, the p values (0.2034, 0.2726) are more than 0.05, hence both the null hypotheses are accepted stating that neither FII granger cause FERs nor FERs affect FII. Thus there is no causality between the two variables.

The table further states that in the next two null hypotheses between FII and ER, the p values (0.0457,0.0018) are less than 0.05, hence both the null hypotheses are rejected with the conclusion that FII as well as ER affect each other. Hence there is a bidirectional causality between the two variables. Hence it is safely concluded that both the variables namely FII and ER affect each other in the long run.

As per the table, the value of p (0.0496) for the null hypothesis that FII does not granger cause Inflation is less than 0.05 makes us to reject the null hypothesis and concludes that FII does affect Inflation. However, the p value for the next null hypothesis that Inflation does not granger cause FII is 0.8095, this being more than 0.05 makes us to accept the null hypothesis with the conclusion that Inflation does not affect FII. Thus, it is observed that there is a unidirectional causality between the two variables.

4.3.7 Vector Auto Regression (VAR)

This econometric model called Vector Auto Regression (VAR) was introduced in 1980 by a famous economist named Sims. This model is basically used to analyse the relationships between various variables by taking into account the feedback from other variables. Estimation based on VAR includes endogenous (or also named dependent) as well as exogenous (or also named independent) variables in the equation making. It is an important tool for multivariate analysis. In this model, the value of a given variable (endogenous) is considered as the linear function of its own lagged values or its past values and also the function depending upon all other variables (or also named exogenous) considered in this model. In this model, all the variables are considered as endogenous (dependent) variables one by one and its own past or lagged values along with all other variables are considered as exogenous (independent) variables. Two very useful methods of examining the properties of VAR model are Variance Decomposition and Impulse Response.

4.3.7.1 Variance Decomposition

Variance decomposition is an important econometric method which examines the dynamics of VAR system. Under this model, an effort has been made to know, as to how much movement in the value of a given variable (dependent) is due to its own shock or its lagged value (s) and how much movement is attributable to other independent variables. It is stated that whenever there is a shock in the value of the ith variable (dependent one), it would not only affect that variable directly, it would also get travelled to other variables through the dynamic system of VAR.

In simple words, variance decomposition separates the shock experienced by the endogenous (dependent) variable (s) into two parts namely one shock caused by its own past values or lagged values and another shock caused by other exogenous (independent) variables. This model also gives information about the relative significance of each and every random innovation which affects the variables value in the model. In addition to this, it is also worth to notice that the order of selecting the variables is an important issue in variance decomposition. In the present study, Cholesky Decomposition model has been employed for deciding the order of the variables.

The equations for variance decomposition are as follows:

$$\Delta X_t = \alpha_1 + {}^{k}\sum_{i=1} (\alpha_{11}(t)\Delta X_{t-j}) + {}^{k}\sum_{f=1} \alpha_{12}(F)\, \Delta Y_{t-f} + \epsilon_{xt}$$

$$\Delta Y_t = \alpha_2 + {}^{k}\sum_{i=1} (\alpha_{21}(t)\Delta X_{t-j}) + {}^{k}\sum_{f=1} \alpha_{22}(F)\, \Delta Y_{t-f} + \epsilon_{yt}$$

Where ϵ's are stochastic error term; called impulse response or innovation or shock in the language of VAR.

The results for the variance decomposition of FII, Sensex, ER, FERs and Inflation for the averaged twelve periods (months) are summarised as follows:

Table 4.9 : Variance Decomposition of FII

Period	FII	Sensex	ER	FER	Inflation
1	100.0000	0.000000	0.000000	0.000000	0.000000
2	97.09222	1.226265	0.731691	0.928437	0.021387
3	95.39607	1.523544	2.128911	0.912266	0.039209
4	94.58743	2.301792	1.930861	1.013168	0.166748
5	84.19638	8.927437	4.602976	0.893513	1.379698
6	81.42468	8.546016	7.925097	0.821285	1.282919
7	78.27371	8.318027	7.536275	3.702307	2.169679
8	77.04504	8.979421	7.490134	3.896177	2.589231
9	77.09397	9.066737	7.411373	3.863916	2.564001
10	75.52003	8.964735	7.605477	4.414319	3.495436
11	74.23753	8.719825	7.577227	4.409412	5.056010
12	74.06168	8.622508	7.443287	4.347597	5.524932

Source: Researcher calculations using FII, BSE, ER, FER and Inflation data from SEBI and RBI database

The Table 4.9 shows the results of variance decomposition of FII. In the multivariate modelling as shown by this table, the FII lagged value accounts for 100 % variance in its current value in the first period. And the impact of other values like Sensex, ER, FERs and Inflation has been found to be zero in the first period. This shows that in the initial period, the FIIs' past value impact on its current value is very high as compared to the impact of other variables.

This situation exists almost for the next four periods. Out of all the exogenous variables, Sensex explains 2 %, ER explains 1.9 %, FERs accounts for 1.01% and Inflation accounts for only 0.16 % change in the value of FII in the 4^{th} period. Gradually

the impact of other variables on FIIs' value has also become noticeable but it is not very high. Sensex accounts for almost 9% variance in the value of FII in the 12th period. While other variables namely ER, FER and Inflation account for 7 %, 4 % and 5 % variance in the value of FII respectively. Thus it is concluded that the lagged FII values as exogenous variable explain or account for more variance in the FII current value than any other variables like Sensex, ER, FERs and Inflation.

Table 4.10 : Variance Decomposition of Sensex

Period	FII	Sensex	ER	FER	Inflation
1	30.85035	69.14965	0.000000	0.000000	0.000000
2	35.56018	60.79945	3.393106	0.010954	0.236305
3	43.23157	53.17909	3.084703	0.101850	0.402785
4	45.34814	50.57194	3.417627	0.090354	0.571938
5	42.76865	52.40361	2.815157	0.429135	1.583454
6	43.50401	48.99956	3.467056	1.169388	2.859981
7	44.33490	46.19083	3.799947	2.484619	3.189704
8	43.60760	44.76925	4.137201	3.711647	3.774297
9	43.00787	43.18114	4.204529	5.068017	4.538445
10	42.18066	42.46359	3.995054	6.655960	4.704735
11	41.69714	41.92708	3.909315	7.732854	4.733608
12	41.42783	41.04870	3.808084	8.957738	4.757648

Source: Researcher calculations using FII, BSE, ER, FER and Inflation data from SEBI and RBI database

The Table 4.10 shows the results of variance decomposition of Sensex. In the multivariate modelling as shown by this table, the Sensex lagged value accounts for 69 % variance in its current value in the first period. And the impact of other variables namely,

FIIs, ER, FERs and Inflation has been found to be 30 %, 0 %, 0% and 0% respectively. This shows that in the initial period, the Sensex past value impact on its current value is quite high as compared to other variables except FII which explain 30 %.

Gradually the impact of other variables on Sensex value has become noticeable but it is not very high. Out of all these independent variables, Sensex itself explains almost 41 % of variance in the 12^{th} period. While other variables namely FII, ER, FERs and Inflation account for 41 %, 3.8%, 8.95 % and 4.757 % variance in the current value of Sensex respectively. This leads to the conclusion that the lagged values of Sensex along with FII values account for more variance in the Sensex current value than any other variables like ER, FERs and Inflation in the short run. It also indicates that FII as well as lagged Sensex value have same impact on the current value of the ER.

Table 4.11 : Variance Decomposition of ER

Period	FII	Sensex	ER	FER	Inflation
1	14.35517	3.855894	81.78893	0.000000	0.000000
2	22.23866	4.200043	66.54313	6.968685	0.049488
3	21.64927	4.128760	67.16124	6.273282	0.787448
4	22.68779	4.543197	65.04539	6.070777	1.652847
5	24.16835	7.984372	58.22057	7.138743	2.487963
6	25.83836	9.360680	54.67002	7.297198	2.833747
7	28.73521	8.855889	51.24845	8.194929	2.965524
8	30.60089	8.572712	48.20140	9.411737	3.213266
9	31.02612	8.688285	45.99340	10.62263	3.669560
10	31.63069	8.639171	43.76075	11.85757	4.111820
11	32.23964	8.729438	41.83255	12.91319	4.285177
12	32.70669	8.564804	40.45231	13.88320	4.392993

Source: Researcher calculations using FII, BSE, ER, FER and Inflation data from SEBI and RBI database

The Table 4.11 shows the results of variance decomposition of ER. In the multivariate modelling as shown by this table, the ER lagged value explains 81 % variance in its current value during the first period. And the impact of other variables namely, FII, Sensex, FERs, Inflation and ER has been found to be gradually going up. In the 4th period, the FII explains 22 %, Sensex explains 4.54 %, ER explains 65 %, FERs explain 6 % and Inflation accounts for 1.65 % variation in the value of ER. In the 8th period, the FII explains 30 %, Sensex explains 8.57 %, ER explains 48 %, FERs explains 9.41 % and Inflation accounts for 3.21 % variation in the value of ER.

Thus, the impact of FII on ER has gone up from 14 % in the first period to 32 % in the 12th period. The impact of Sensex on ER has gone up from 3 % in the first period to 8 % in the 12th period. The impact of FERs on ER has gone up from 0 % in the first period to 13 % in the 12th period. The impact of Inflation on ER has gone up from 0 % in the first period to 4 % in the 12th period. So the conclusion is that ER lagged values along with FII and FERs values have more impact on its value than the Sensex and Inflation.

Table 4.12 : Variance Decomposition of FERs

Period	FII	Sensex	ER	FERs	Inflation
1	1.368760	2.426990	1.407714	94.79654	0.000000
2	1.653934	1.374434	1.243915	95.71384	0.013876
3	1.583631	1.106710	1.821120	95.29889	0.189652
4	1.581059	0.820545	5.092666	92.37567	0.130058
5	1.183608	1.295735	6.999312	90.17646	0.344887
6	0.963661	3.329225	8.410296	86.31842	0.978399
7	0.979533	4.688606	9.436911	83.66796	1.226989
8	0.837788	6.220438	10.42593	81.16561	1.350243
9	0.745529	7.880762	11.17328	78.74094	1.459484
10	0.706585	8.731001	12.14741	76.79931	1.615694
11	0.701147	9.209933	13.10521	75.28198	1.701735
12	0.814999	9.887021	13.53554	74.01765	1.744795

Source: Researcher calculations using FII, BSE, ER, FER and Inflation data from SEBI and RBI database.

The Table 4.12 shows the results of variance decomposition of FERs. In the multivariate modelling as shown by this table, the FERs lagged value explains 94 % variance in its current value of the first period. And the impact of other values, namely, FII, Sensex, ER and Inflation has been found to be very low in the short run. The impact of FII on FERs has gone down from 1 % in first period to 0 % in the 12^{th} period.

The impact of Sensex on FERs has gone up from 2% in first period to 9 % in the 12^{th} period. The impact of ER on FERs has gone up from 1 % in first period to 13 % in the 12^{th} period. The impact of Inflation on FERs has gone up from 0 % in first period to 1 % in the 12^{th} period. It is concluded that it has been the FERs which explain itself more predominantly in the short run of 12 periods as compared to other variables.

Table 4.13 : Variance Decomposition of Inflation

Period	FII	Sensex	ER	FER	Inflation
1	1.024214	0.023946	0.026690	0.842289	98.08286
2	0.536655	0.284972	0.095102	0.687816	98.39545
3	0.335674	0.641185	0.119013	1.162137	97.74199
4	0.603035	1.898832	0.134550	0.803864	96.55972
5	2.264157	2.217959	0.171793	0.986488	94.35960
6	5.410560	2.187892	0.191440	2.371593	89.83851
7	11.01716	1.916773	0.235205	3.674276	83.15658
8	16.88494	1.627896	0.528230	4.906400	76.05254
9	22.99181	1.606473	0.991843	5.923418	68.48645
10	29.53478	1.874604	1.661693	6.229377	60.69955
11	34.99529	2.444746	2.351614	5.897589	54.31076
12	39.45649	3.037246	3.147714	5.358018	49.00053

Source: Researcher calculations using FII, BSE, ER, FERs and Inflation data from SEBI and RBI database.

The Table 4.13 shows the results of variance decomposition of Inflation. In the multivariate modelling as shown by the table, Inflation lagged value explains 98 % variance in its current value during the first period while other variables explain Inflation very negligibly like FII with 1%, Sensex with 0 %, ER with 0 % and FER with 0 % only. However, gradually the impact of FII on Inflation value has gone up substantially with FIIs explaining Inflation 39 % in 12^{th} period, while the impact of other variables like Sensex, ER, FERs has remained 3%, 3% and 5% in the 12th period respectively. Therefore, it is safely concluded that in the short term period, inflation itself and FII account for more variation in inflation values than any other variables.

4.3.7.2 Impulse Response Function (IRF)

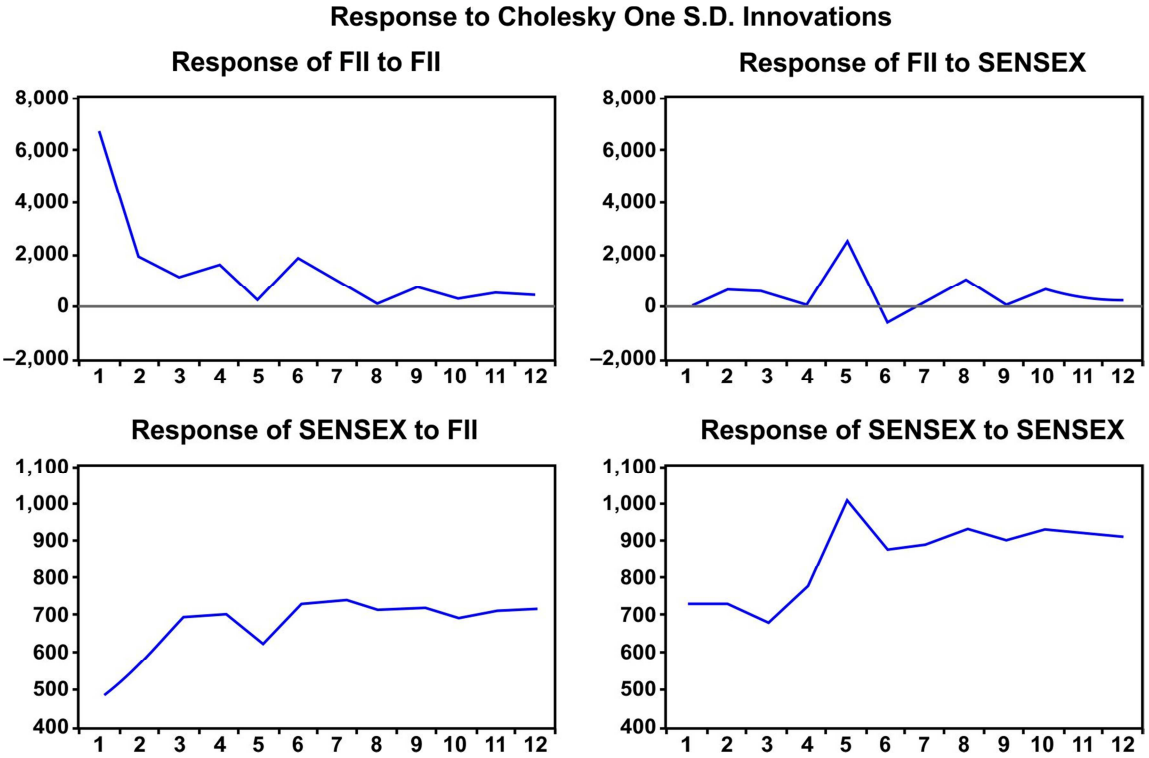
In simple words, Impulse Response is a statistical econometric tool through which the change (s) brought in one variable due the shock or the impulse in the same variable; or shock or the impulse in the other variables over a short period of time normally one year is shown. The mentioned technique is also called impulse response function (IRF). This shock or impulse happens to be in the error term of a given equation which gradually gets propagated in the entire system covering all the variables. In other words, it can be said that we try to find out or trace out the behaviour or response of the dependent (endogenous) variable due to the unit change of error term in a given equation of exogenous variable. Though there are various techniques which can be used to know what type of change is desired to be made in the system, however, normally, a positive change of one standard deviation is made in the system. When this positive change of one standard deviation is introduced in the system, it gets propagated or spread into the entire system and also changes the value of the dependent (endogenous) variable for each and every period of time. When both the methods namely variance decomposition and impulse response function are used together, they are collectively called 'Innovation Accounting' as termed by Enders in 1995.

With an objective of analysing the impact of a change (shock or impulse) in the given flows of FII on the value of other economic variables over a short period of time, normally, one year, a fundamental five variables VAR model containing the time series data of FII flows, BSE Sensex, FERs, ER and Inflation has been employed.

The applied VAR model has used the monthly average data from 2000 to 2011. In the present study, Choleski impulse response model has been used for the generation of impulse response. The impulse response function of FIIs, Sensex, ER, FERs and Inflation with each other has been discussed in detail in following pages.

The Figure 4.1 shows the impulse response function (IRF) between FII and Sensex. On the horizontal side, the time period has been displayed and on the vertical side, the variations in the value of a given variable have been displayed. As per this figure, the response of FII to one standard deviation shock to Sensex is positive over a period of one year except in 6th lag (month). This response dies down after twelve lags (months). This shows that changes in Sensex value does affect (granger cause) FII flows. Whereas the response of Sensex to one standard deviation shock to FII is also very positive and sharp. This response does not die down even after 12 months. This shows that Sensex is very prone to change due to changes in the flows of FIIs in the Indian economy.

Figure 4.1 : Impulse Response between FII and Sensex

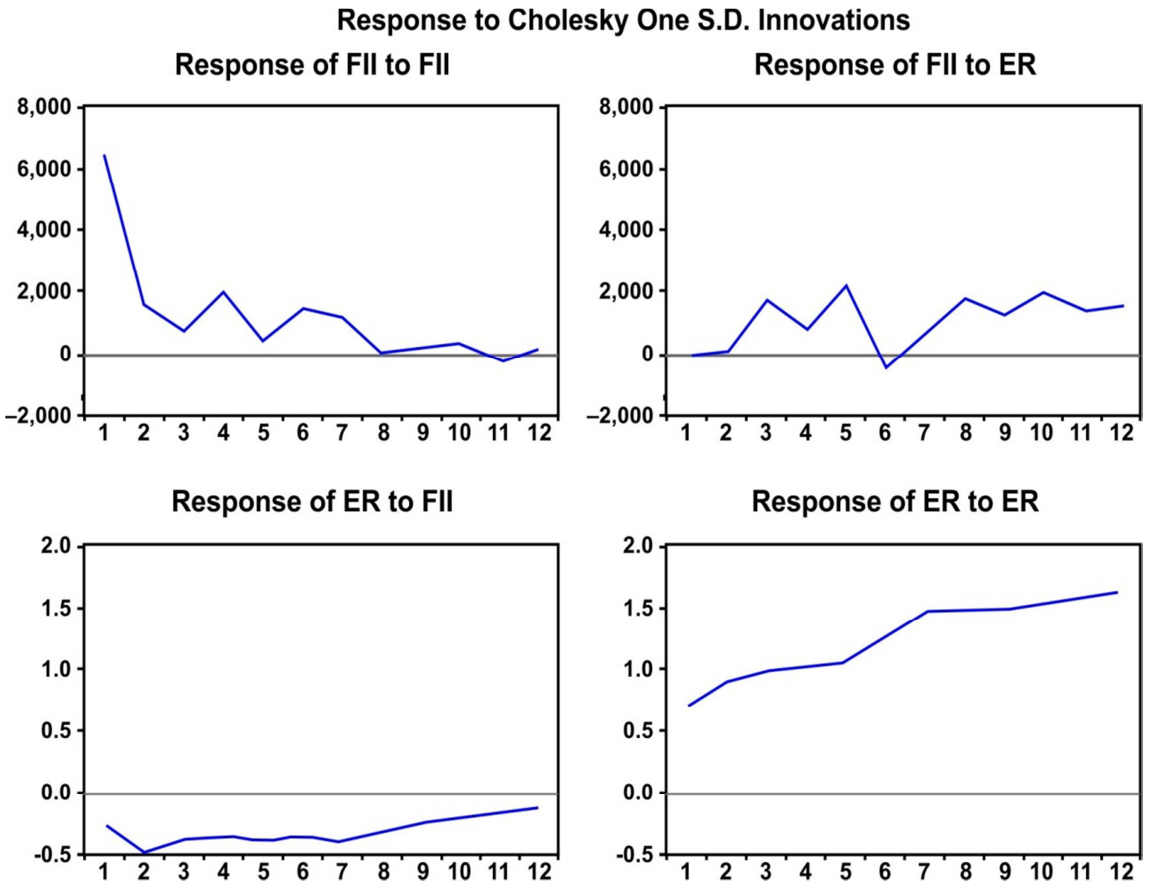


Source: Researcher calculations using FII and Sensex data from SEBI and BSE database

It also implies that FIIs and Sensex are correlated with each other. However, there is one more important observation that Sensex is more sensitive to change due to change in FII flows than vice versa. Thus there is bidirectional causality between FII and Sensex in the short run. Though there has been bidirectional causality between these two variables, Sensex has been more prone to change due to change in FII or due to change in its own value than FII. This figure also shows that the response of FII to its own values has died down within a period of 12 months.

The response of Sensex to its own values has remained positive over the same period. This leads to the conclusion that Sensex has been more sensitive to its own lagged values than the FII has been to its own values over a period of 12 months.

Figure 4.2 : Impulse Response between FII and ER

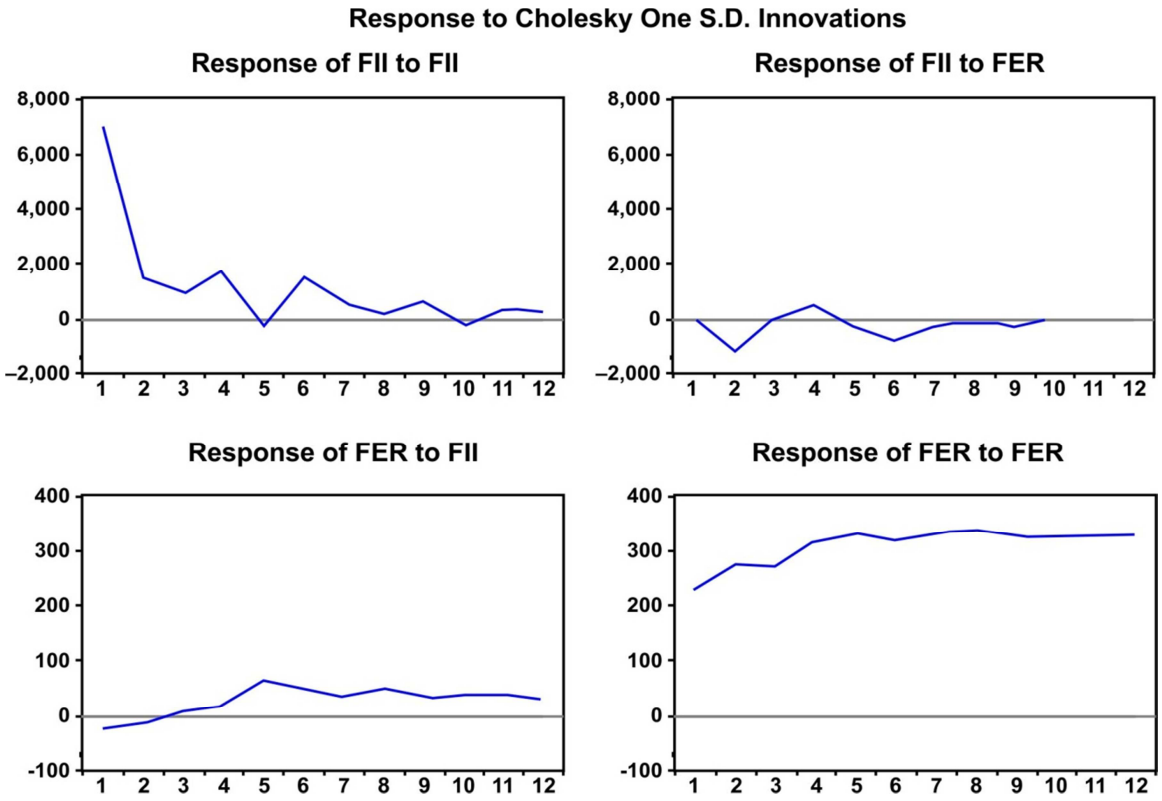


Source: Researcher calculations using FII and ER data from SEBI and RBI database

The Figure 4.2 shows the impulse response function (IRF) between FII and ER. The response of FII to one standard deviation shock to ER is positive over a period of one year except in 6th lag but not very quick. This response does not die down after twelve lags (months). This shows that changes in ER value also affect (granger cause) FII flows. Whereas, as per this figure, the response of ER to one standard deviation shock to FII is not positive. This shows that FII flow is sensitive to the changes in the value of ER. However, ER remains unaffected due to changes in the flows of FIIs in the short run. Thus there is unidirectional causality between FIIs and ER in the short period.

Moreover, this figure also shows that the response of FII to its own values has died down within a period of 12 months. However, the response of ER to its own values has remained positive over the same period. This leads to the conclusion that ER has been more sensitive to its own lagged values than the FII has been to its own values over a period of 12 months.

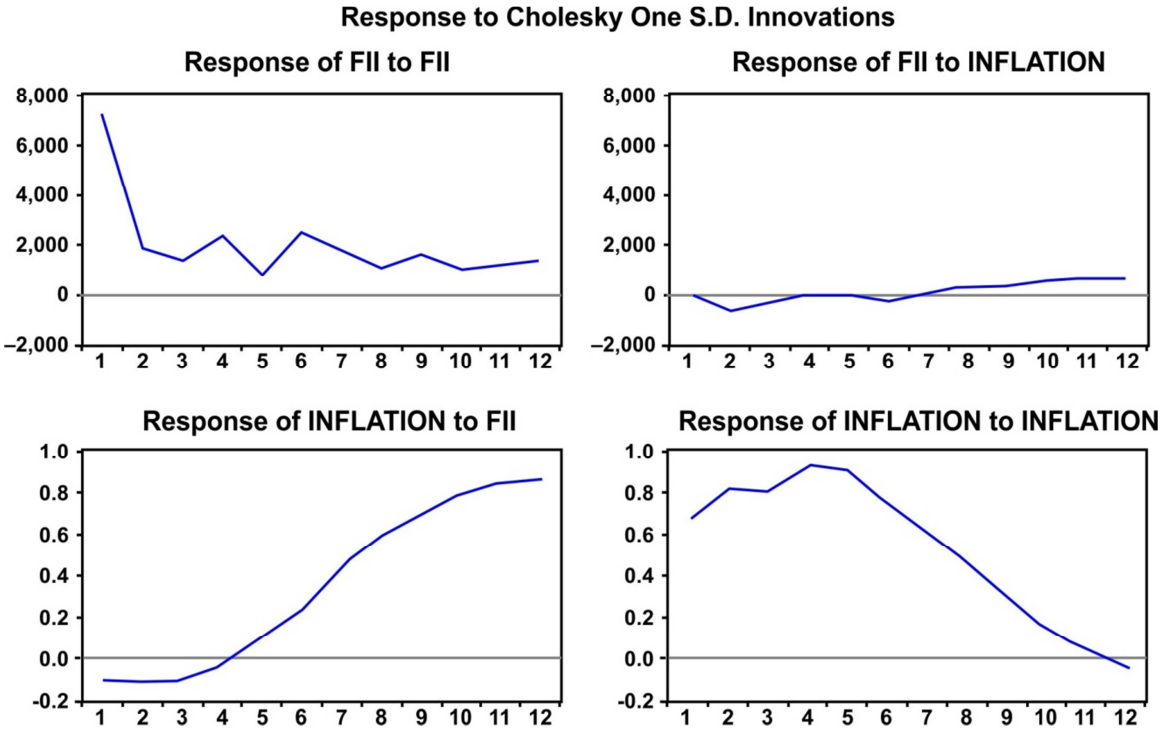
Figure 4.3 : Impulse Response between FII and FERs



Source: Researcher calculations using FII and FERs data from SEBI and RBI database.

The Figure 4.3 shows the impulse response function (IRF) between FII and FERs. As per the figure, the response of FII to one standard deviation shock to ER is almost negative in the short run. This shows that the changes in FERs value do not affect FII flows much in the short run. In other words, we can say that FIIs are insensitive to the changes in the value of FERs. Whereas the response of FERs to one standard deviation shock to FII is positive from 3rd period onwards and it does not die down even after 12 periods. However in the initial period of three months, this response remains negative. This shows that initially FERs' value remains unaffected but after then any change in FII flows does affect FERs positively. This show that FERs are more sensitive to the changes in the value of FIIs than the vice versa. Thus, there is a unidirectional causality between the two variables in the short run. Moreover, this figure also shows that the response of FII to its own values has died down within a period of 12 months. However, the response of FERs to its own values has remained positive over the same period. This leads to the conclusion that FERs have been more sensitive to its own lagged values than the FII has been to its own values over a period of 12 months.

Figure 4.4 : Impulse Response between FII and Inflation



Source: Researcher calculations using FII and Inflation data from SEBI and RBI database.

The Figure 4.4 shows the impulse response function (IRF) between FII and Inflation. As per this figure, the response of FII to one standard deviation shock to Inflation is negative in the first six months and positive thereafter. This shows that any change in Inflation value does not affect FII flows initially but when there is a continuous change in the Inflation value, FII flows start getting affected. On the other hand, the response of Inflation to one standard deviation shock to FII is negative for the initial period of 4 months but after that, the response of Inflation towards FII flows not only becomes positive but it also becomes highly sharp. This shows that Inflation is very sensitive to the changes in the FII flows in the short run. Moreover, this figure also shows that the response of FII to its own values has died down within a period of 12 months. However, the response of Inflation to its own values has remained positive over the same period. This leads to the conclusion that Inflation has been more sensitive to its own lagged values than the FII has been to its own values over a period of 12 months.

4.4 IMPACT OF FII ON STOCK MARKET VOLATILITY

4.4.1 Background

Empirically, it is a well known fact that FIIs are motivated not only by the domestic and global factors but they are also affected substantially by the short run expectations of the market normally termed as 'Market Sentiments'. These market sentiments give birth to the element of speculation and high mobility in the FII flows. Volatility is thus the uncalled and naturally present phenomena in the stock market which enhances the degree of risk for the investment made by the investors. Volatility makes the investors risk averse due to the enhanced degree of uncertainty. Investors, in return, expect a high degree of return in consideration of this enhanced uncertainty.

Volatility, thus, is not only a domestic phenomena rather it can go up or down depending upon the market sentiments prevailing within the country or across the global countries integrated well with the developed means of communications. This is what that has been experienced in 2007. In that year, almost the whole world faced the heat of the stock market crisis which had got originated in U.S.A (called subprime crisis). As per the records, this financial market crisis started around mid 2007 and it depreciated further in

the early parts of 2008. The stock market felt the maximum heat of the volatility when the Sensex came down bluntly from its closing peak value of 21000 in January 2008 to less than 10000 by December,2008*(Sumanjeet, 2010).* It was during this year only that FIIs made net withdrawals worth US $13 billion from the Indian stock market which was the highest ever withdrawals by FIIs. However, in spite of all these developments, FIIs continued to have faith in the potential of the Indian economy. Gradually, the Indian stock market got recovered from this global shock in 2009. Thereafter, FIIs made good investment in the Indian capital market. Thus, 2008 has been the year which has divided the decade of Indian stock market into two major phases namely phase one for the years before 2008 (called pre crisis phase) and phase two for the years after 2008 (called post crisis phase). The following table shows the annual movements of Sensex along with net flows of FII from 2000 to 2012.

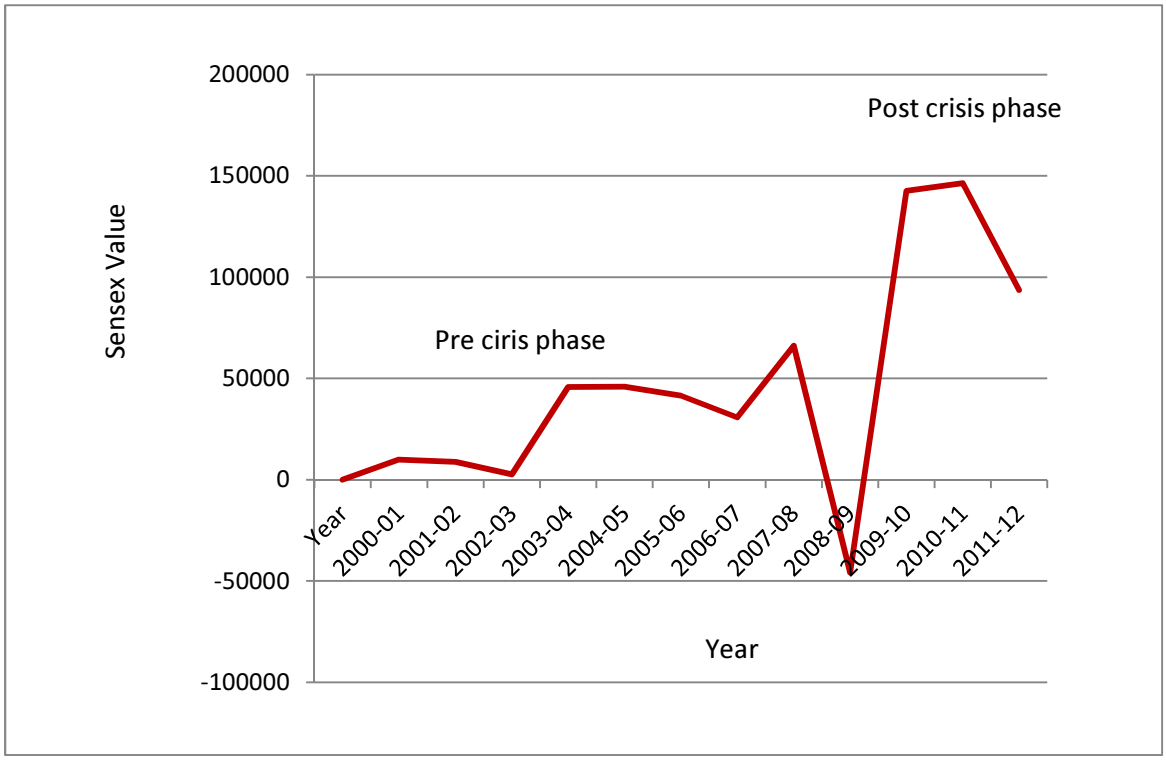
Table 4.14 : Sensex Movements and Net FII flows (2000 to 2012)

Year	Sensex	Net FII (Rs.Crore)
2000	3972	6510
2001	3262	12494
2002	3377	3677
2003	5839	35153
2004	6603	42049
2005	9398	41663
2006	13787	40589
2007	20287	80914
2008	**9647**	**-41215**
2009	17465	87987
2010	20509	179674
2011	15454	39352
2012	19426	163350

Source: bseindia.com and sebi.gov.in

As per the Table 4.14, there has been good investment flows by FIIs in the Indian economy from the year 2000 to 2012. This table also shows that the FII flows have been found positive for all the years except 2008 featured by the phenomena of subprime crisis. During the year 2008, as depicted by the table, the FII flows have been found negative. This year has divided the whole decade into two phases namely pre crisis period and post crisis period. The same has been shown geographically in the Figure No 4.5. Thus volatility (as disclosed by the phenomena of division of FII flows into two phases) in the Indian stock market has become a natural phenomenon. No individual, no bank, no financial institutions, no government and no FIIs can escape this while investing into the stock market. Therefore, volatility has increasingly become dependent upon the market sentiments which are governed by the demand and supply forces operating in the stock market. Thus a major chunk of the volatility phenomena has been accounted for by the FIIs operating in the Indian economy.

Figure 4.5 : Categorization of Sensex Movements in Phases (From 2000 to 2012)



Source: bseindia.com and sebi.gov.in

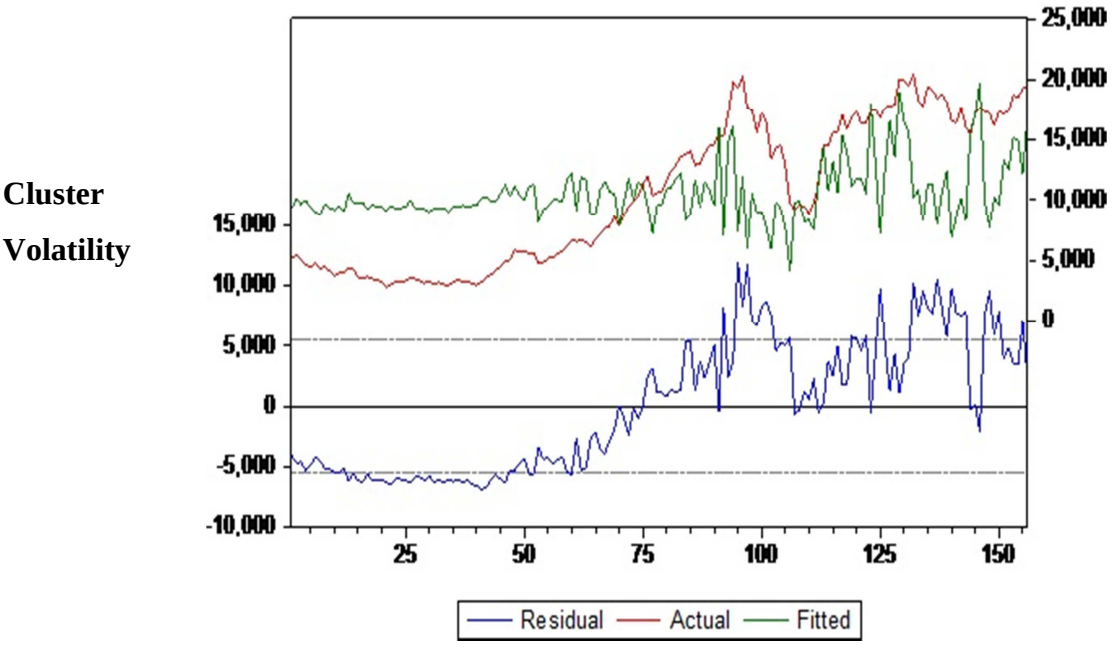
As per the literature available, there have been different sets of studies which have made different interpretations about the relationship between FII flows and the volatility in the Indian stock market. On the one hand, many studies have supported the fact that FIIs activities enhance the volatility of the Indian stock market; on the other hand, there have been many studies which have negated this conclusion. Moreover, there have also been some studies which claim that FIIs activities have reduced the stock market volatility. Studies like Rao (1999), Pradhan and Naasimhan (2002), Coondo and Mukhrejee (2004), Rai and Bhanumurthy (2004) and Pal (2005) have found that the arrival of FIIs has enhanced volatility of the Indian stock market. However, studies by Stulz (1997), Batra (2004) found that FII flows have had no impact on the stock market volatility. Contrary to all this, research study by Bansal and Pasricha (2009) found that FII flows have reduced the volatility in the Indian stock market.

In the light of the given scenario, the study of stock market volatility has become all the most important for the policy makers, academicians, financial market participants, investors and the capital market regulators for various reasons. Some of the major reasons amongst the same are as follows: firstly, the study of market volatility is important for the market agents, market investors and market brokers as it reflects an element of inherent risk in their investment which determines the return on their potential investment. Secondly, a high volatile market is always a concern for the policy makers of the nation as it hinders the growth prospects and always creates an environment of uncertainty. Thirdly, highly volatile market creates a fear in the mind set of the potential investors and it may act as a hindrance in their actual investment. Fourthly, as pricing of derivatives and option trading are based on the volatility conditions of the market, it becomes a very important phenomena for the market speculators. Lastly, return forecasting in an environment of volatile market is always a challenging job, thereby, it creates huge job opportunities for the researchers.

In simple words, it is concluded that the study of the stock market volatility is very important and significant phenomena. The study on these important aspects related to the Indian financial market in general and the Indian stock market in particular can be of great help for the policy makers and market regulator while framing the economic

policies and designing the rules for the stock market. Thus, the stock market volatility as a measure of risk plays an important role in the financial decision making process for many stakeholders. The monthly data (from 2000 to 2012) of net FII flows and BSE Sensex have been used to study the phenomena of volatility in the Indian stock market. Before ARCH and GARCH models are applied, the cluster Volatility present in the residuals of variance (BSE Sensex) has been checked. The following figure of cluster volatility has been generated on the basis of monthly data of BSE Sensex from 2000 to 2012 covering 150 observations.

Figure 4.6 : Cluster Volatility in the Residuals of Variance (Monthly Data)



As per the Figure 4.6, it has been observed that there is a prolonged period of low volatility during the first 100 observations (months) happening during the period preceding 2008 and thereafter, there exists a prolonged period of high volatility from 100th observation (month) to 150th observation (month) happening subsequent to the period of 2008.

In other words, periods of high cluster volatility are preceded by periods of low cluster volatility or periods of low cluster volatility are followed by periods of high

cluster volatility. This suggests that residuals or error terms have been conditionally heteroscedastic i.e. having the elements of volatility. In the present research, this phenomenon has been further investigated by applying ARCH and GARCH models.

4.4.2 Model Selection with Normal Gaussian Distribution

The model selection on the basis of relevant information is a very important part of the time series analysis as the selection of a lag length can directly affect the outcome of the tests. In the present study, three major criteria (AIC, BIC, and HQ) have been used for the selection of lag length to be used in ARCH and GARCH models.

4.4.2.1 Akaike Information Criteria (AIC)

The basic purpose of this method is to find out 'the Goodness of Fit' of a given econometric model. It basically tells us about the amount of information lost when a given model is used to explain the reality. It explicates and brings in the trade off between the biasness and the variance in the construction of a given model. In simple words, this method tries to balance the degree of accuracy and the degree of complexity of the model.

4.4.2.2 Schwarz Information Criteria (SIC) or Bayesian Information Criterion (BIC)

This criterion was originally developed by one of the famous econometricians named Gideon. E.Schwarz. He gave the concept of Bayesian argument for the adoption of this model. In statistical literature, Schwarz Information criterion or Bayesian information criterion is one of another famous criterion for the selection of model amongst the available finite sets of models. This criterion is also closely associated with Akaike information criteria and is based upon the concept of 'Likelihood Function'. When we fit a given model, it is quite possible that we may increase the probability by adding more parameters into the same, but it may lead to the phenomena of over fitting the model. This problem of over fitting is resolved by this model. This model introduces one penalty term for the number of parameters introduced into the model. As per the experience, the penalty term has been found larger in case of BIC than in case of AIC.

4.4.2.3 Hannan-Quinn Information Criterion (HQ)

Hannan-Quinn information criterion is one another important criteria for the selection of a given model. This criterion can be used as an alternative to Akaike information criterion (AIC) or Bayesian information criterion (BIC). It is explained as:

$$HQC = n \log (RSS/n) + 2k \log \log n.$$

Where k is the number of parameters, n is the number of observations, and RSS is the residual sum of squares that results from linear regression or other statistical model.

Table 4.15 : Lag Order Selection Criteria

Observations	GARCH(1,1)	GARCH(1,2)	GARCH(2,1)	GARCH(2,2)
AIC-Akaike Info Criteria	**19.92**	19.93	19.95	19.98
SIC- Schwarz criteria	**20.06**	20.06	20.09	20.13
HQ-Hannan Quinn Criteria	**19.99**	19.98	20.00	20.04

As per the Table 4.15, the values of AIC, SIC and HQ models are minimum at GARCH (1,1). Hence, this model has been selected for the purpose of analysis. GARCH (1,1) means one ARCH term and one GRACH term. ARCH term shows the effect of recent news on the volatility of the underlying stock market value and the GARCH term shows the effect of previous volatility on the volatility of the stock market.

To specify the ARCH and GARCH models, two equations have been specified. One is mean equation and the second is variance equation which are explained as follows:

Mean Equation is as follows:

$$Sensex = C1 + C2*FII + e \quad \text{….. (1.1)}$$

Here Sensex = sensitivity index of BSE, C1,C2 = constant, FII = Foreign Institutional Investment, e = Residual.

Second equation is the Variance Equation which is as follows:

Residual derived from mean equation (1.1) is used in making variance equation.

$$H_1 = C3 + C4*e^2_{t-1} + C5H_{t-1} + C6*FII \quad \text{..... (1.2)}$$

H_1 = Variance of the residual (error term) derived from equation (1.1). It is also known as current period's variance or volatility of Stock market (BSE Sensex)

C3=Constant

C4, C5……C6 = Constant/Coefficient

e^2_{t-1} or RESID(-1)^2 = Previous period's squared residual derived from equation (1.1).

It is also known as previous period's stock market (Sensex) information about volatility. It is ARCH term.

H_{t-1} = Previous days' residual variance or volatility of stock market (Sensex). It is GARH term.

FII = FII (variance repressor or exogenous or independent variable)

4.4.3 Results for ARCH and GARCH Models

The results obtained from the application of ARCH and GRACH models for investigating the impact of FII flows on the stock market volatility has been presented in the following table.

Table 4.16 : Results of ARCH and GARCH Models (Monthly Data)

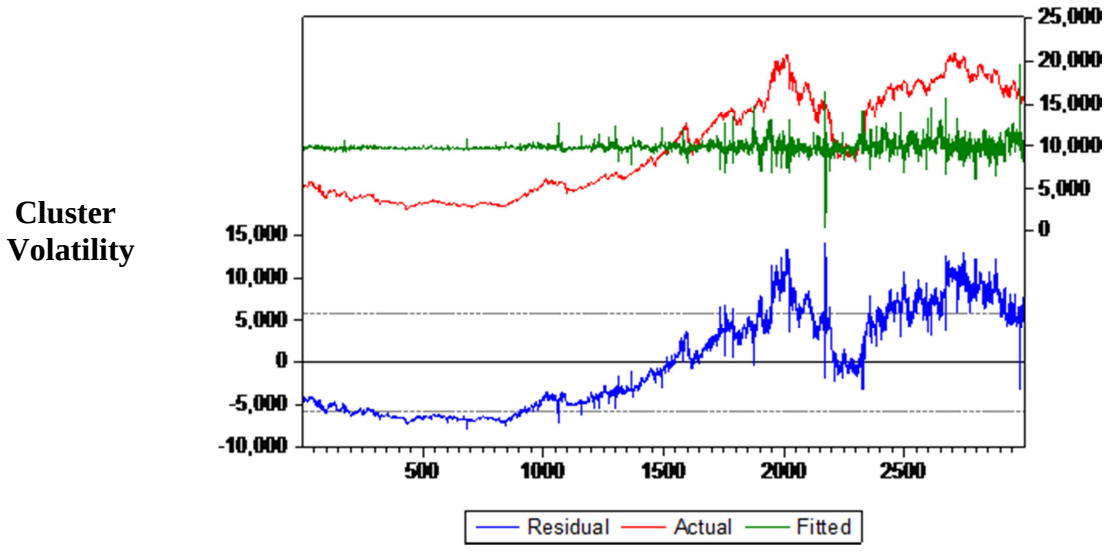
Pre Crisis Period (2000 to 2007)				Post Crisis Period (2008 to 2012)			
Variable	**Coefficient**	**Standard error**	**Probability**	**Variable**	**Coefficient**	**Standard error**	**Probability**
ARCH(1)	1.5082	0.9590	0.1158	**ARCH(1)**	0.7368	0.5092	0.1479
GARCH(1)	-0.9573	0.0055	0.0000	**GARCH(1)**	-0.5970	0.2034	0.0033
FII	-449.17	194.2992	0.0008	**FIIs**	-84.4138	45.2259	0.0020

As per the Table 4.16, as the p values of ARCH (1) term are not less than 0.05 or 5 % both in the pre crisis period as well as in the post crisis period, it is stated that the coefficient of ARCH (1) term is not significant during these two periods (phases). Hence, it is safely concluded that the recent past information (ARCH effect) has not made much impact on the volatility of the Indian stock market. This also shows that market is absorbing the available information well. On the contrary, the p values of the GARCH(1) term are less than 0.05 or 5 % in the pre crisis as well as in the post crisis period, this shows that the coefficient of the GARCH (1) term is significant in both the periods. Further, this leads to the conclusion that the previous volatility has a significant impact on the current volatility of the Indian share market. As per the discussion above, it is safely concluded that the GARCH term impact has been much more than ARCH term impact implying that the past volatility has been more significant than the past information in terms of affecting the future volatility. This also confirms the fact that the given volatility in the stock market is also attributable to the market sentiments (reflected by the previous volatility) rather than the past information (as past information having been absorbed rapidly by the market).

In addition to all the above findings, it is also clear from the Table 4.16 that the impact of FII on the stock market volatility has been significant in both the periods namely pre crisis as well as post crisis period. Moreover, this shows that, the value of FII coefficient is more negative (-84.41) than its value (-449.17) in the pre crisis period. Hence, it shows that the impact of FII flows on the stock market volatility has been more in the post crisis period than its impact in the pre crisis period. Thus, it is observed that in the post crisis period, FIIs have been playing a bigger and more aggressive role in making the Indian stock market more volatile. In other words, it explains that in the post crisis period, the changes in FII inflows or outflows have been making the Indian stock market very volatile or Indian stock market has been very sensitive to the changes in FII flows. As per the empirical records, the history has also supported the above findings as in most of the market crashes, the FIIs have been the major shock givers. For example, in 2008, due to the sudden withdrawals of their investment by FIIs from the Indian stock market, BSE Sensex fell down from its peak value of 21000 in January, 2008 to less than 10000 points during December, 2008 (*Sakthivel,2012).*

In addition to the analysis based on the monthly data, the impact of FII flows on the volatility of the Indian stock market has also been investigated by using the daily data from 2000 to 2012. For this purpose, 3000 observations of daily closing values of Sensex and daily net investment by FIIs have been used for the empirical analysis.

Figure 4.7 : Cluster Volatility in the Residuals of Variance (Daily Data)



It is observed from the Figure 4.7 that there has been a high degree of volatility in the daily values of Sensex ranging from the 2000th observations to 3000th observations. This time period also follows the post global crisis phase of 2008.

The results for the impact of FII flows on the volatility of the Indian stock market based on the daily time series data of BSE Sensex have been shown in the following table.

Table 4.17 : Results of ARCH and GARCH Models (Daily Data)

Variable	Coefficient	Standard Error	Probability
ARCH(1)	1.281818	0.243976	0.00047
GARCH(1)	-0.955594	0.016204	0.00024
FIIs	-3515.713	790.3707	0.00036

As per the Table 4.17, the p value is less than 0.05 or 5 % in case of all the variables namely ARCH, GARCH and FII. This show that all the variables are significant and contribute in affecting the volatility of the Indian stock market. Thus, based upon the monthly as well as daily analysis of data for the given period under study, it is safely concluded that FII has affected the volatility of the Indian stock market.

4.5 FORECASTING OF FII

Globally, it has been experienced that stock markets in India and other developing countries have been becoming an attractive place for investment by FIIs. Investment by FIIs to these markets have their own pros and cons. On the one hand, it has helped in increasing the valuation of the domestic firms and added up in the kitty of foreign currency of the country, on the other hand, the sudden withdrawal of huge funds by these FIIs have also affected adversely the economic environment of the domestic country. However, nowadays, under the uncalled pressure of global integration and economic compulsions, every country including India needs good amount of FII for its economic development. Hence, in the subsequent pages, a herculean effort has been made for the forecasting of FII for the future period. This would help us in better planning for the management of FII flows. It is worth to note that for forecasting purpose, all other variables have been assumed to be constant.

4.5.1 Checking Stationarity

The stationarity condition of FII time series has been checked by applying the Augmented Dicker Fuller unit root test. The results of this test have been shown in the Table 4.18.

Table 4.18 : Augmented Dicker Fuller Unit Root Test for FII

	Without Differencing (at level)		**With Differencing**	
Level of Significance	**t-Statistics**	**Probability**	**t-Statistics**	**Probability**
	1.581463	0.9987	-7.480630	0.0020
At 1 %	-3.886751		-3.886751	
At 5 %	-3.052169		-3.052169	

This Table 4.18 shows, when taken at the original level, as the t-statistics value (1.581463) is less than the critical values at 1 % and 5 % level of significance ignoring the signs and the p value (.9987) is more than 0.05, the time series of FII happen to have unit root or it is a non-stationary time series. But after the differencing of the time series, ignoring the signs, the t–statistics value (7.48) has become more than the critical values at 1% and 5 % level of significance ignoring the signs and p value (0.0020) has become less than 0.05, so the FII time series has become stationary after differencing. The same differenced FII time series has been used for its forecasting.

4.5.2 Time Series Modelling using ARIMA Model

It was the popular statistician named 'Box and Jenkins' who first introduced ARIMA model in 1976. ARIMA process is a combination of an 'Auto Regressive' and a 'Moving Average' Process. A time series can follow an ARIMA process only when it is stationary. A time series is a stationary time series, when a mean reversion around a constant long run mean is shown by the series.

Moreover, it needs to have a finite variance also. The concept of stationary is a very important concept because if a time series is not stationary, and then all the results, outcomes and interpretations of the regression analysis would be invalid. The major steps involved in the estimation and construction of a ARIMA model include identification of a model, estimation of the parameters, checking the adequacy of the model and then the actual forecasting.

In an autoregressive model (AR), the value of FII depends linearly on its own past values:

$$FII_t=b_0+b_1FII_{t-1}+b_2FII_{t-2}+ b_p FII_{t-p} + u_p \text{ .....}$$

where b_o,b_1,b_2 .....b_p are the coefficients which can be estimated by ordinary least squares regression and u_p is white noise error term..

In moving average model (MA), the current value of FII depends linearly on past "shocks"

$$FII_t=c_0+c_1FII_{t-1} + c_2 FII_{t-2} \text{ …….} + c_q FII_{t-q}+ u_q \text{ .....}$$

where c_0,c_1, c_2 .....c_q are the parameters and u_q is the shock or disturbance which affect for q period.

As ARIMA model can only be applied on a stationary time series and if a given time series is not stationary, then stationarity needs to be induced into it by differencing it and that differenced time series ΔY_t is represented by:

$$\Delta Y_t = Y_t - Y_{t-1} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$

4.5.3 ARIMA Model Selection

The selection of p, d and q value is very important event in case of ARIMA modelling as the value when used as an input in the given ARIMA model can directly affect the forecasting results. In the present research, the ARIMA model has been selected on the basis of AIC, SC and DW test.

Table 4.19 : ARIMA Model Selection

ARIMA Models	Adjusted R-Squared	Akaike Information Criterion (AIC)	Schwarz Information Criterion (SC)	Durbin-Watson Statistic (DW)	Number of Iterations	Model Rank
P=2, D=2, Q=0	0.8088	24.3778	24.8977	2.6443	0	1
P=2, D=1, Q=0	**0.5926**	**22.6206**	**23.1206**	**1.5980**	**0**	**2**
P=2, D=1, Q=1	0.5869	22.5640	23.2306	1.9369	10	3
P=1, D=1, Q=1	0.4835	24.2249	24.7067	1.9491	25	4
P=1, D=1, Q=0	0.2860	24.6132	24.9343	2.6821	0	5
P=0, D=0, Q=2	0.0581	24.4355	24.8849	1.7611	19	6
P=2, D=0, Q=0	0.0359	24.5102	24.9919	2.2492	0	7
P=0, D=2, Q=0	0.0000	26.0586	26.2192	2.7073	0	8
P=0, D=1, Q=0	0.0000	23.6434	23.7983	2.8613	0	9
P=1, D=0, Q=0	-0.0163	23.3011	23.6110	1.8747	0	10

As per the Table 4.19, out of the various ARIMA (p, d, q) models, second model with p=2, d=1, q=0 fits best as it has the minimum value as per AIC, SIC and DW tests and it has 2nd best Adjusted R squared value. Therefore, ARIMA (2, 1, 0) model has been used for forecasting the values of FII for future. Where p denotes the number of autoregressive terms (AR), d the number of times the series has to get differenced before it becomes stationary and q the number of moving average (MA).

4.5.4 Checking Model Adequacy through Residuals of AC and PAC

Before the forecasting of the FII with the help of ARIMA model, it is important to see whether the residuals of AC (Auto Correlation) and PAC (Partial Auto Correlation) show random movements. Because, if residuals of AC and PAC show random movements, then the given ARIMA model gets best fitted for further processing.

Table 4.20 : Residuals of AC and PAC

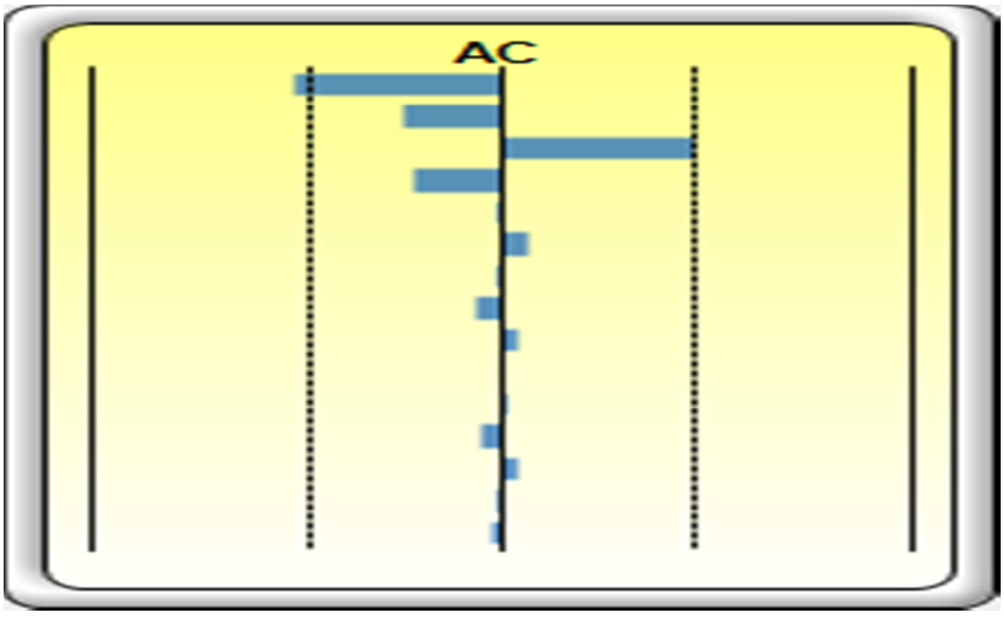
Time Lag	AC	PAC
1	(0.5058)	(0.5058)
2	(0.2383)	(0.6641)
3	0.4625	(0.1779)
4	(0.2172)	(0.1421)
5	(0.0117)	0.1453
6	0.0652	0.0481
7	(0.0104)	0.1438
8	(0.0577)	(0.0680)
9	0.0400	(0.0579)
10	(0.0060)	(0.1805)
11	0.0181	0.0115
12	(0.0508)	(0.0669)
13	0.0394	0.0802
14	(0.0077)	(0.0463)
15	0.0222	0.0196

As per this table, it has been observed that there is no particular movements of the values of AC and PAC. This means that the residuals of this selected ARIMA model are white noise. In other word, it can be said that the movements found in the autocorrelation and partial auto correlation have been found random.

Moreover, the patterns of AC and PAC values have been showing mixed trends. For example, in the second period, the value of AC goes down. In the third period, the AC value has been found to gone up. In the fourth and the fifth period, the values show decreasing trends. In the next period (sixth period), it has gone up. However in the subsequent periods i.e. seventh period, it again shows decreasing trend. In the eight and ninth period, it shows upward trends. In the subsequent periods (from tenth period till fifteenth period), the AC values show random trends without any specific directions being followed by these values.

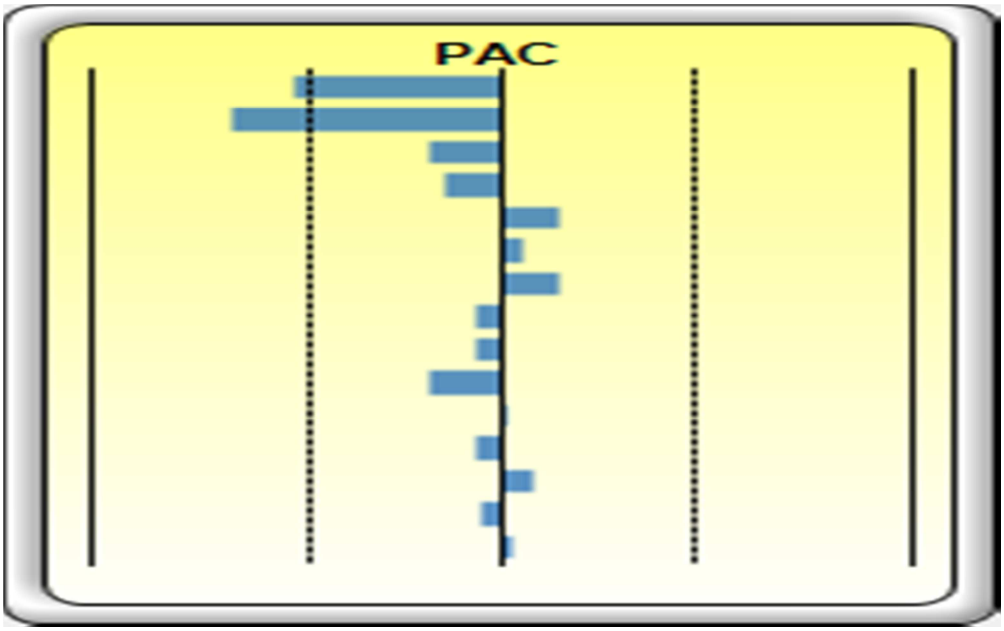
In the same manner, the PAC values have also been showing random trends from the first period till the fifteenth period. These random trends of AC and PAC residuals have also been displayed by the Figure 4.8 and 4.9.

Figure 4.8 : Correlogram of AC Residuals



Source: Researcher calculations using FII database from SEBI.

Figure 4.9 : Correlogram of PAC Residuals



Source: Researcher calculations using FII database from SEBI.

4.5.5 FII Forecasting

For the forecasting of FII for future, FII time series data from 2000 to 2012 have been used. The results obtained for the same have been presented in the following table.

Table 4.21 : FII Forecasting for Future (Rs. crore)

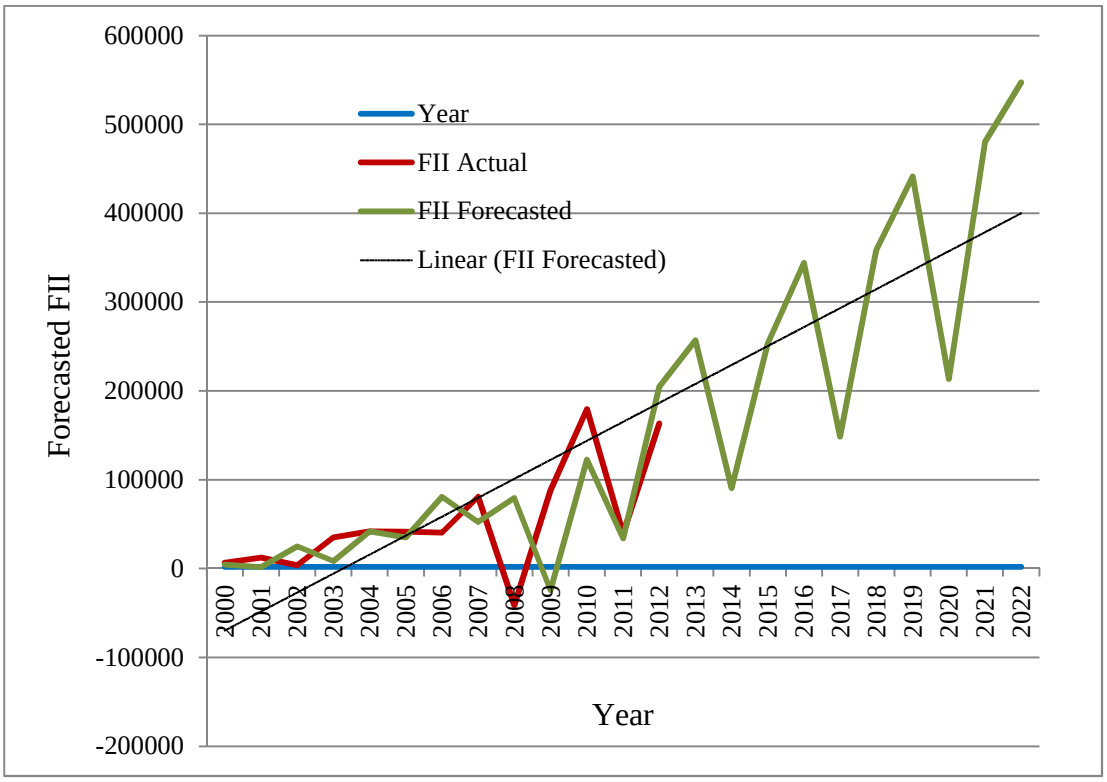
Year	Net FII (Actual)	Forecasted FII
2000	6510	4467
2001	12494	1678
2002	3677	24860
2003	35153	8341
2004	42049	42073
2005	41663	34925
2006	40589	80988
2007	80914	52355

Year	Net FII (Actual)	Forecasted FII
2008	-41215	79545
2009	87987	-24294
2010	179674	122787
2011	39352	34041
2012	163350	204845
2013	-	256774
2014	-	90476
2015	-	253188
2016	-	344146
2017	-	148586
2018		358426
2019		441201
2020		213298
2021		480156
2022		547152

Source: www.sebi.gov.in

As per the Table 4.21, FII in India has been showing upward trends (actual FII) over the last twelve years. The FII in India as discussed in the previous pages has been affected by many domestics and global factors over the years. In the light of the same, a genuine effort has been made to estimate FII for the future period in India. In the process of FII forecasting, all other variables have been assumed to be constant. As per the Table 4.21, the FII in India has been estimated at Rs. 256774 crore in the year 2013, Rs. 90476 crore in the year 2014, Rs. 253188 crore in the year 2015, Rs 344146 crore in the year 2016 and Rs. 148586 crore in the year 2017. Further, for 2018, FII has been estimated at Rs. 358426 crore. For the year 2019, 2020, 2021 and 2022, the FII forecasting has been made at Rs. 441201 crore, Rs.213298 crore, Rs 480156 crore and Rs. 547152 crore respectively. The same has been displayed and supported by the Figure 4.10.

Figure 4.10 : Forecasting of FII in India (Rs. Crore)



As per the observations about the empirical data, in spite of the low economic growth and other economic fundamentals not being very strong, FIIs have invested Rs. 113136 crore alone in the Indian stock market in the year 2013 *(www.SEBI.gov.in).* Moreover, by the end of April 2014, FIIs have made total investment to the tone of Rs. 103548 crore *(Daily Business June 11, 2014).*This observation shows that FIIs have shown a high degree of faith and confidence in the Indian economy with an expectation of a stable and reforms-oriented government at the centre. In case, Indian economy performs better on the economic front, creates congenial investment environment and promotes better corporate governance practices, it would fetch good amount of FII in the country in the times to come.

CHAPTER – 5

SUMMARY OF FINDINGS, CONCLUSIONS AND SUGGESTIONS

5.1 INTRODUCTION

Since 1991, Indian economy has emerged as a prominent market for the global investors. In particular, FII has constituted a major portion of the total foreign capital flows in India. During the last decade i.e. from 2000 onwards, there has been a great spurt in the flows of FII. Thus out of various contemporary economic phenomena, the one which has assumed great importance in the economic scenario of the Indian economy has been the flows from FIIs. Though there has been good research work undertaken in this area, majority of the researches have concentrated on the study of relationship between the Indian stock market and FII flows. In the light of the above scenario, a herculean effort has been made in the present research to study various aspects and dimensions related to FII. The main objectives of the present study include:

i) To study the magnitude and trends of FII flows in India since 2000 and their forecasting.
ii) To find out the factors affecting FII flows in India.
iii) To examine the relationship between FII and other economic factors like Stock Market, FERs, ER and Inflation.
iv) To study the impact of FII flows on the volatility of the stock market in India.

The present research study has been both descriptive as well as empirical in nature which has explored the dynamic relationship between the FII flows and various economic factors like – BSE Sensex, ER, FERs and Inflation. In the present study, secondary data from various secondary sources like Newswire, Capital Line, SEBI, RBI, BSE, NSE, GOI and CSO have been collected and used. Various statistical and econometric tools which have been used in the present research for the presentation, tabulation and analysis of the data include Histogram, Frequency Curve, Simple Percentage Analysis, t – test, Correlation Analysis, Granger Causality test, VAR, Variance Decomposition, Impulse Response Function, ARCH, GARCH and ARIMA models.

5.2 MAJOR FINDINGS ON NATURE, MAGNITUDE AND INVESTMENT TRENDS OF FII FLOWS

Following are the major findings of the present research work:

i) There has been a great increase in the number of FIIs registered with SEBI in India. There were only 527 FIIs registered with SEBI in 2000-01 and this figure got increased to 1765 in 2011-12. Thus, there has been 235 % increase in the total number of FIIs registered with SEBI during the last decade.

ii) A small number of FIIs have been found to be very active for the trading activities in India. Some of the most prominent FIIs operating in the Indian capital market include Deutsch Group, Citigroup, HSBS Global Investment, Morgan Stanley & Co. International, and DSP Merrill Lynch Capital Market fund.

iii) Though, FIIs registered with SEBI in India have been hailing from different countries, there have been very few countries which have emerged as the major source of foreign investment by FIIs. Out of these countries, USA has emerged as one of the major investors through this route of investment in India. USA has been found to be at the top accounting for 35 % of the total investment. Other countries from where FIIs have been hailing as found by the study include UK, Canada, Luxemburg, Singapore, UAE, Mauritius, Cyprus. In addition to this, a large number of Asia's emerging countries have also been showing good interest in the Indian economy. Some of these counties include Taiwan, Malaysia, Kuwait, Saudi Arabia, Japan and South Korea etc.

iv) In the Indian economy, Foreign Portfolio Investment has come in many forms over the last few years. Among all these forms of FPI, FII has emerged as one of the major source of capital inflows. It has been found that FII whose share was 66.92 % of the total FPI in 2000-01 has gone up to 97.91% in 2011-12. Thus, there has been a 46.30 % increase in FII share in total FPI. This shows the growing importance of FII as a dominating component of FPI over the last decade.

v) Indian economy has observed many diversified trends of FII flows over the last twelve years. As per the findings, there were FII flows worth Rs. 9933 crore only in the year 2000-01. In 2005-06, the total investment by FIIs was Rs. 41467 crore. But in 2008-09, there was negative investment of Rs. 45811 crore by FIIs. However, in 2011-12, the total investment by FIIs was recorded at whopping amount of Rs. 93725 crore. This shows that over last one decade, FIIs interest for the Indian economy has gone up substantially.

vi) FIIs' investment in the Indian companies listed with NSE has by and large concentrated in Banking, Finance and FMCG sectors. The other sectors which have been in the second row of their preference include Pharmaceutical, Media/Entertainment and Manufacturing etc.

vii) During the last decade, FIIs have been investing in the Indian equity and the debt instruments with different proportions of funds. In 2000-01, FIIs made net investment into the equity market to the tune of Rs 10206 crore while in that year there was net selling of debt to the tune of Rs. 273 crore. And within a twelve year period, their share in the equity and the debt market got increased to Rs. 42737 crore and Rs 49987 crore in 2011-12. This shows that along with the equity market, FIIs have also recognised the importance of Indian debt market.

viii) Over the last decade, the assets under the custody of FIIs have also gone up many folds. India attracted about Rs 61753 crore investment under the custody of FIIs in 2001-02 which was around 22.84 % of the total assets under the custody of various custodians. And after a gap of one decade i.e. in 2010-11, it was found to be at Rs.1106550 crore which constituted around 33.02 % of the total assets under the custody of various custodians.

ix) Indian stock market has grown by leaps and bonds in terms of size and depth after the entry of FIIs as measured through Marker Capitalization Ratio, Market Turnover Ratio and Value Traded ratio. MCR (Market Capitalization to country's GDP) is an important measure to judge the market size. It has been found that BSE MCR ratio which was only 26.9 % in 2001-02 has got increased to the level of 89.1 % in 2010-11. Similarly, as per the findings of the study, NSE MCR ratio

also increased substantially from 28.0 % in 2001-02 to 87.263% in 2010-11. The VTR has gone up from 13.5 % in 2001-02 to 14.0 % in 2010-11 in case of BSE and from 22.6 % in 2001-02 to 45.4 % in 2010-11 in case of NSE. Thus, on the basis of the above analysis, it has been observed that there has been a substantial increase in the market size, market depth and market liquidity of the Indian economy during the last decade.

x) FII proportion in the market turnover as well as the market capitalization of BSE and NSE has grown up. The FII proportion in the total market turnover at BSE which was 4.79% in 2000-01 increased to 50.27 % in 2011-12. Similarly, FII proportion in the total market capitalization at NSE which was 1.29 % in 2000-01 went up to 19.03 % in 2011-12. The ratio of FIIs total cumulative investment to Indian GDP also showed upward trends. This ratio which was just 0.0045 % in 2000-01 got increased to 0.066 % in 2011-12. On the basis of this analysis, it has been observed that FIIs' role and contribution in the Indian economy has been steadily growing over the last twelve years.

5.3 FINDINGS ON FACTORS AFFECTING FII FLOWS IN INDIA

A large number of domestic and global factors have been affecting FII flows in India. As per the findings of the study, the various domestic or pull factors which have been affecting FIIs flows in India include Risk and Return in Indian Share Market, ER, Economic Reading of the Indian Economy, Home Biasness, Credit Rating, Price-Earnings Ratio, Infrastructure Facility, Country Risk and other economic factors like Industrial Growth, Inflation, FERs etc. Further, the various global or push factors which have been affecting FII flows in India include Performance of Other Countries, Global Liquidity, Interest Rates in Global Market, Tax Heaven Countries, the Drivers in the Global Market and Global Crisis.

5.4 FINDINGS ON RELATIONSHIP STUDY BETWEEN FII AND OTHER ECONOMIC VARIABLES

i) On the one hand, there is a positive correlation between Sensex, FERs and FII flows and on the other hand, there is a negative correlation between ER, Inflation and FII flows.

ii) In order to have an in-depth study of dynamic relationship between the selected variables, econometric techniques like Granger Causality, Variance Decomposition and Impulse Response techniques have been applied in the present study. Augmented Dickey-Fuller test has been applied to check the stationarity of the time series. The lag length of five has been selected on the basis of Akaike Information criteria. Johansenn Co integration model has been applied to know whether the time series are co-integrated or not in the long run. As per this test, the variables have been found to be co integrated and therefore Vector Error Correction Model has been applied for granger causality test. As per the findings of the study, it has been observed that there has been a bidirectional causality between FII flows and Sensex. This means that one of the reasons for the increase or the decrease in Sensex is attributable to FII flows or vice versa. But on the contrary, no causality has been found between FII flows and FERs. Further, it has been found by the study that FII as well as ER affect each other in the long run. Hence, there has been found a bidirectional causality between the two variables. As far as FII and Inflation are concerned, it has been found that FII does affect inflation but inflation does not affect FII flows. Hence, a unidirectional causality has been found between the two variables.

iii) Variance Decomposition method which examines dynamics of VAR system has been applied in the present study. This method explains the proportion of the movements in the dependent variables (endogenous variables) which are due to their own shocks or due to the shocks of other variables (exogenous variables). In case of variance decomposition of FII, it has been found that the impact of FII past values on its current value has been very high as compared to the impact of other variables during the given period under study. This leads to the conclusion that FII lagged values as exogenous variable define themselves much more than other variables.

In case of Variance Decomposition of Sensex, it has been found that the Sensex lagged value explains 69 % of variance in its current value during the first period. And the impact of other values like FII, ER, FERs and Inflation has been found to be 30 %, 0 %, 0% and 0% respectively during the first period. Out of all

the variables, Sensex explains almost 41 % of variance in its value in the 12th period. While other variables namely FII, ER, FERs and inflation account for 41 %, 3.8%, 8.95 % and 4.75 % of changes in the value of Sensex during the same period. This describes the fact that that Sensex along with FIIs causes itself more than any other variables like ER, FERs and Inflation in the short run. It indicates that FII has same impact on Sensex value as Sensex itself has during the given period under study.

In case of Variance Decomposition of ER, it has been found that the ER lagged value explains 81 % variance in its current value during the first period. And gradually the impact of other variables like FII, Sensex, FERs and Inflation on ER has been found to be going up. As per the observations of this study, the impact of FII on ER has been found to have gone up from 14 % in the first period to 32 % in the 12th period. The impact of Sensex on ER has gone up from 3 % in the first period to 8 % in the 12th period. The impact of FERs on ER has gone up from 0 % in the first period to 13 % in the 12th period. The impact of Inflation on ER has gone up from 0 % in the first period to 4 % in the 12th period. On the basis of the above findings, it is concluded that ER lagged values along with FII and FERs have more impact on its value than the Sensex and Inflation.

In case of Variance Decomposition of FERs, the FERs lagged value explains 94 % variance in its current value of the first period. And the impact of other values likes FII, Sensex, ER and Inflation has been found to be gradually going up but very low in the short run. The impact of FII on FERs has gone down from 1 % in the first period to 0 % in the 12th period. The impact of Sensex on FERs has gone up from 2% in the first period to 9 % in the 12th period. The impact of ER on FERs has gone up from 1 % in the first period to 13 % in the 12th period. The impact of Inflation on FERs has gone up from 0 % in the first period to 1 % in the 12th period. It is concluded that it is the FERs which explain itself more as compared to other variables during the given period under study.

In case of Variance Decomposition of Inflation, the inflation lagged value explains 98 % variance in its current value during the first period while other

variables explain inflation very negligibly. However, gradually the impact of FII on inflation has gone up substantially with FIIs accounting for 39% variance in Inflation value in the 12th period. While the impact of other variables namely Sensex, ER, FERs have remained at 3%, 3 % and 5 % respectively in the 12th period. Hence, it is concluded that in the short run period, inflation itself and FII account for more variation in Inflation values than any other variables.

iv) In case of Impulse Response between FII and Sensex, the response of FII to one standard deviation shock to Sensex has been found positive over a period of one year except in 6th lag. This response goes down after twelve lags (periods). This shows that changes in Sensex value also affect (granger cause) FII flows. Whereas the response of Sensex to one standard deviation shock to FII has also been found positive and sharp. This response does not go down even after 12 periods. This show that Sensex is very prone to change due to changes in the FII flows in the Indian economy. It also implies that FII and Sensex are correlated with each other with the conclusion that Sensex is found to be sensitive to change due to changes in FII flows and same has been found true for the vice versa position. Moreover, there has been found a bidirectional causality between FII and Sensex.

In case of Impulse Response between FII and ER, the response of FII to one standard deviation shock to ER has been found positive over a period of one year except in the 6th lag. This response does not go down after twelve lags (periods). This shows that changes in ER value also affect (granger cause) FII flows. However, the response of ER to one standard deviation shock to FII has not been found positive. This show that FII flows is sensitive to the changes in the value of ER. However, ER remains unaffected due to changes in the flows of FIIs in the short run. Moreover, there has been found a unidirectional causality between FII and ER.

In case of Impulse Response between FII and FERs, the response of FII to one standard deviation shock to FERs has been found negative in the short run. This shows that the changes in FERs' value do not affect FII flows. In other

words, we can say that FIIs are insensitive to the changes in the value of FERs. Whereas the response of FERs to one standard deviation shock to FII has been found positive from 3rd period onwards and it does not go down even after 12 periods. However, in the initial period, this response remains negative. This shows that initially FERs value remains unaffected but after then any change in FII flows does affect FERs. This shows that the influence of FII is more on FERs than the influence of FERs on FII.

In case of Impulse Response between FII and Inflation, the response of FII to one standard deviation shock to Inflation has been negative during the first 6 periods and positive thereafter. This shows that change in Inflation value does not affect FII flows in the initial period, but when there is a continuous change in the Inflation value, FII flows start getting affected. On the other hand, the response of Inflation to one standard deviation shock to FII is negative for the initial period of 4 months but after that, the response of Inflation towards FII flows not only becomes positive but sharp also. This shows that Inflation has been very sensitive to the changes in the FII flows in the short run.

5.5 FINDINGS ON IMPACT OF FII FLOWS ON THE VOLATILITY OF THE INDIAN STOCK MARKET

i) In the present research, monthly as well as daily time series data of net FII and BSE Sensex from 2000 to 2012 have been used to study the phenomena of volatility in the Indian stock market. Econometric models like ARCH and GARCH have been applied to investigate the impact of FII flows on the stock market volatility. The results obtained by applying these methods conclude that in case of analysis based on monthly time series data, the coefficient of ARCH (1) term has not been found significant in the pre-crisis period and in the post-crisis period. The above results confirm the fact that the recent past information has not created much impact on the subsequent volatility of the Indian stock market. This also shows that the market has absorbed this information very well. Conversely, the coefficient of the GARCH (1) term has been found significant in the pre crisis as well as post crisis period. This shows that the previous volatility has a positive

and significant impact on the current volatility of the Indian share market. The GARCH term impact has been found more significant than the ARCH term impact which implies that the past volatility has been found more significant than the past information in terms of affecting the future volatility. This also shows that the volatility in the stock market is also attributable towards market sentiments (based on previous volatility) rather than the past information (past information having been absorbed rapidly by the market). Moreover, the impact of FII flows on the volatility of the Indian stock market has been found significant in both the periods. In the post-crisis period, FIIs' impact has been found more negative than its impact in the pre crisis period on the volatility of the Indian stock market. This shows that in the post crisis-period, FIIs have been playing a bigger and more aggressive role. This also shows that in the post-crisis period, the changes in FII flows have made Indian stock market more volatile. It is further concluded that the Indian stock market has been found more sensitive to the changes in FII flows during the post-crisis period than the pre crisis period.

ii) In case of findings based on daily time series data, it has been observed that all the variables (ARCH, GARCH and FII) have been found significant and contributed in affecting the volatility of the Indian stock market for the whole period under study. Thus, on the basis of the above findings, it is safely concluded that FII has affected the volatility of the Indian stock market.

5.6 FINDINGS ON FORECASTING OF FII FOR FUTURE

As per the forecasting undertaken with the help of ARIMA model, FII in India has been estimated to have upward trends in the future time. FII flows have been forecasted at Rs. 253188 crore in 2015 and Rs. 547152 crore in 2022.

5.7 CONCLUSIONS

Since the liberalisation in early 1990s, the role of FIIs has grown manifolds in the Indian economy. They have become a reckoned force in the Indian capital market during the last decade. Their numbers have grown up substantially. The amount of their flows has become surprisingly large. The number of countries where they have been hailing

from has been found to be growing very fast. It has been further found that FIIs have been investing more dominantly in the Indian equity market as compared to their investment in the Indian debt market. Their share in the total FPI has been on the rise during the last decade. Moreover, their share in the companies enlisted on NSE has been showing good consistency. The percentage of their share in the total value under the custody of various entities namely Financial Institutions, Mutual funds, NRIs, OCBs, Brokers, Corporate Houses, FDI, Banks, Foreign Venture Capital Investment, Insurance Companies, Local Pension Fund and others has gone up. Their share in the total market turnover and the total market capitalization of BSE and NSE along with their percentage in the Indian GDP has also been showing upward trends. The domestic factors, like Return in the Indian Share Market, ER, Economic Reading of the Indian Economy, Risk in the Indian Share Market, Home Biasness, Credit Rating, Price-Earnings Ratio, Infrastructure Facility, Country Risk and other economic factors like Industrial Growth, Inflation, FERs etc. have been found to be affecting FII flows in India. Along with this, other global factors which have been found to be affecting FII flows in India include Performance of Other Countries, Global Liquidity, Interest Rates in Global Market, Tax Heaven Countries, the Drivers in the Global Market, Global Crisis etc. FII has been found to have positive correlation with Sensex and FERs while their relationship has been found to be negative with ER and inflation. On the basis of the findings, on the one hand, there has been found a bidirectional causality between Sensex, ER and FII flows. And on the other hand, the study has established a unidirectional causality from FII flows to inflation. However, no causality has been found between FII flows and FERs.

As per the variance decomposition analysis, it is concluded that lagged value for the given variables like FII, Sensex, FERs, ER and Inflation as an exogenous variable defines itself much more than any other variables. For Sensex, the conclusion is that Sensex along with FIIs causes itself more than any other variables like ER, FERs and Inflation in the short run. For ER, the conclusion is that ER lagged value along with FII and FERs value has more impact on its (ER) value than the Sensex and Inflation. For FERs, the conclusion is that FERs explain itself more than any other variables during the given period of the study. And in case of Inflation, its own lagged value along with FII explains the variance in the current inflation values than any other variables. Further, as

per the results obtained from the Impulse Response Function, it is concluded that as compared to ER and FERs, Sensex and inflation have reacted more promptly to a standard deviation shock in FII flows. On the basis of monthly data analysis done with the help of GARCH and ARCH, it is concluded that FII flows have increased volatility in the Indian stock market in the pre crisis as well as post crisis period. Moreover, as per the analysis based on daily time series data, it is concluded that FII flows have increased volatility in the Indian stock market for the whole period under study. As per the forecasting undertaken with the application of ARIMA model, it is predicted that FIIs will make good investment in the Indian economy in the future time.

5.8 SUGGESTIONS

In the light of the findings of this study, the following suggestions are offered which may act as useful inputs for the policy makers in attracting and sustaining enhanced flows of FII along with a check on the volatility of the Indian stock market. It may also further help them in framing a congenial investment policy with a potential to create supportive investment environment for FIIs. Some of the important suggestions are listed below:

i) As observed, the main purpose of FIIs is to earn the maximum return in the short span of time and flee away. That is why they are called 'Good Weather Friends' and their money is called 'Hot Money'. They may cause volatility in the Indian stock market due to their unforeseen entry and exit. That was exactly what has happened in the subprime crisis of 2008. So the government should be very careful while framing policy on 'Capital Account Convertibility'. In particular, government should be very cautious dealing with those policy matters which directly deal with FII. Thus, given the uncertain nature of FIIs, it is suggested that along with encouraging FII flows, the government should also motivate the domestic investors like Banks, Domestic Financial Institutions, Mutual Funds, Insurance Companies and individuals to invest more in the Indian capital market and broaden its base.

ii) It is observed that FII flows coming to India have been found to be more from few selected countries like US, UK and Mauritius etc. In certain cases, it has been so due to the application of 'Double Taxation Avoidance Treaty' with those countries. Thus, it is suggested that the country base should be broadened and more FIIs from across the world should be motivated to invest in India. Moreover, out of the large number of FIIs, only few FIIs have been found active in the Indian capital market. So the government should also encourage more and more FIIs across various countries to get registered with SEBI and make good investment in India.

iii) As compared to other developed countries, Indian economy still suffers from many drawbacks and lacunas. Government should undertake sufficient steps to make the Indian capital market more efficient, promote better corporate governance practices, minimise insider trading practices, ensure more economic growth, enhance liquidity and depth of the market and reduce the trading costs. The government should also ensure that there is no disadvantage due to information asymmetry to any of the investors investing in the Indian capital market.

iv) It is further observed that a large portion of FII flows coming to India happen to be in the form of 'P-Notes'. P Notes are the instruments issued by FIIs to those Foreign Funds/Corporate bodies which cannot invest in India directly. But the main disadvantage of P-Notes is that the identity of the investors investing through P- Notes is not disclosed and large unaccounted money gets entered into the Indian capital market. Government should make efforts to make it mandatory to disclose the identity of the foreign entity investing through P- Notes so that no illegal money enters into the India capital market. This would help in reducing volatility of the Indian stock market.

v) There would be less volatility in the Indian capital market if FII happens to be balanced between the equity and the debt instruments. Hence, the government should provide greater flexibility FIIs and further increase the higher limits for investment in debts by FIIs. It would go a long way in creating and consolidating

a balanced investment environment in the economy and there would be less volatility in the Indian capital market.

vi) The regulatory authority (SEBI) in India should also look at the 'Restrictive Trade Practice' of price rigging by FIIs. Once a concrete and in built mechanism is in place, it would help in maintaining a more competitive and objective investment environment in the country.

5.9 SCOPE FOR FUTURE RESEARCH

As per the findings of various empirical studies, it has been found that, in India, there has been a comparatively less work undertaken on FIIs from various perspectives. Majority of the empirical studies have touched one variable or the other; and not much comprehensive and parallel work has been undertaken on various dimensions relating to FII. Though the present study has attempted to study FII from various perspectives along with many variables taken together, there are still many dimensions on which future research can be undertaken. Some of the main dimensions for future research are as follows:

i) The present study has included only four variables namely Sensex, FERs, ER and Inflation for its analysis. There are many other variables like Economic Growth, Industrial Growth, Money Supply and Index of other Foreign Countries etc. on which future research can be undertaken.

ii) There are many other institutions in India like Banks, Insurance Companies, Domestic Financial and Investment Institutions, Mutual Funds with which a comparative study of FIIs can also be made.

iii) The future study can also be made on the 'FIIs' Investment Strategies' and their preference for specific sectors and companies in India.

iv) Substantially, the present study has included the data from India. Thus, further comparative study can also be made on FIIs flows in India viz. other countries like China, Korea, Thailand, Taiwan etc.

1

Introduction

2

Review Of Literature

3

Trends, Magnitude And Composition of FII in India

4

Determinants of Foreign Institutional Investment and their Relationship Study

5

Summary of Findings, Conclusions And Suggestions

Bibliography

Appendix

BIBLIOGRAPHY

BOOKS

Apte, P.G 2009, *International Financial Management*, Tata McGraw-Hill Publishing Company Limited, New Delhi.

Avadhani, V.A 2008, *International Finance: Theory and Practice*, Himalaya Publishing House, Mumbai.

Avadhani, V.A 2008, *Investment and Securities Market in India*, Himalaya Publishing House, Mumbai.

Bhalla, V.K 2010, *Investment Management: Security Analysis and Portfolio Management*, S.Chand & Company Ltd. New Delhi.

Bhalla, V.K 1997, *Managing International Investment and Finance*, Anmol Publications Pvt. Ltd. New Delhi.

Bhole, L and Mhakud Jitender 2009, *Financial Institutions and Market: Structure, Growth and Innovations*, Tata McGraw-Hill Publishing Company Limited, New Delhi.

Dutt, Ruddar and Sundharam, K.P.M 2006, *Indian Economy*, S.Chand & Company Ltd. New Delhi

Fisher, D.E and Jordan, R.J 2011, *Security and Portfolio Management*, Prentice-Hall of India, New Delhi.

Gurati, N.Damodar, Porter, C. Dawn and Gunasekar, Sangeetha 2012, *Basic Econometrics*, Tata McGraw-Hill Education Private Limited, New Delhi.

Gupta, S.P 2011, *Statistical Methods*, Sultan Chand & Sons, New Delhi.

Gurswamy, S 2009, *Global Financial Institutions*, Vijay Nicole Imprints Private Limited, Chennai.

Kevin, S 2010, *Fundamentals of International Financial Management*, PHI Learning Private Limited, New Delhi.

Khan, M.Y 2011, *Financial Management: Text, Problems and Cases*, Tata McGraw-Hill Publishing Company Limited, New Delhi.

Khan, M.Y 2010, *Financial Services*, Tata McGraw-Hill Publishing Company Limited, New Delhi.

Saidharan, K and Mathews, Akex 2008, *Financial Services and System*, Tata McGraw-Hill Publishing Company Limited, New Delhi

Kothari, C.R 2013, *Research Methodology: Methods & Techniques*, New Age Publishers, New Delhi.

Panday, I.M 2013, *Financial Management*, Vikas Publications, New Delhi.

Pathak, V.Bharati 2011, *The Indian Financial System: Markets, Institutions and Services*, Pearson Education, New Delhi.

Phull, Gurpreet.Singh 2014, *Foreign Institutional Investors and Capital Market in India*, New Century Publications, New Delhi.

Shapiro, A.C 2009, *Multinational Financial Management*, John Wiley & Sons, New Delhi.

Shajan, Vandana 2006, *Foreign Institutional Investment: Perspectives and Experiences*, ICFAI University Press, Agartala.

Sharan, Vyuptakesh 2011, *International Financial Management*, PHI Learning Private Limited, New Delhi.

Singh, Preeti 2006, *Investment Management: Security Analysis and Portfolio Management*, Himalaya Publishing House, Mumbai.

Siddaiah, Thummuluri 2009, *International Financial Management*, Pearsons Publications, New Delhi.

RESEARCH PAPERS/ARTICLES

Aggarwal, Gaurav 2010, 'A Study of Exchange Rates Movement and Stock Market Volatility', *International Journal of Business and Management*, Vol.5, No.12, Dec, pp 62-73.

Akula, Ravi 2011, 'An Overview of FII in India', *Indian Journal of Commerce & Management*, Vol-II, Issue-1, pp.100-104.

Ananthanarayanan, Sandhya 2003, 'FIIs and Security Returns: Evidence from Indian Stock Exchanges', pp.1-31.

Arya, Rachna and Purohit, Ashok 2012, 'An Analytical Research on FII in India', *International Journal of Computer Science & Management Studies*, Vol. 12, Issue 03, Sep, pp.111-116.

Babu, Suresh and Prabheesh, K.P 2008, 'Causal Relationship between FII and Stock Returns in India', *International Journal of Trade and Global Market*, Vol.1, No.3, pp.259-265.

Bansal, Anand and Pasricha, J.S 2009, 'Foreign Institutional Investment Impact on Stock Prices in India', *Journal of Academic Research in Economics*, Vol.1, No.2, Oct., pp.181-189.

Batra, Amita 2004, 'Stock Return Volatility Patterns in India', *Working Paper No 124*, Indian Council For Research on International Economics Relations, pp.1-34.

Batra, Amita 2009, 'The Dynamics of Foreign Portfolio Inflows and Equity Returns in India', *Working Paper No. 109*, Indian Council Fir Research on International Economic Relations, Sep., pp.1-30.

Bose, Suchismita and Coondoo, Dipankor 2004, 'The Impact of FII Regulations in India: A Time Series Intervention Analysis of Equity Flows', *ICRA Bulletin- Money and Finance*, pp.54-81.

Chakrabarti, Rajesh 2001, 'FII Flows to India: Nature and Causes', *ICRA Bulletin-Money and Finance*, Oct-Dec, pp. 61-81.

Chakrabarti, Rajesh 2002, 'Marker Reaction Addition of Indian Stocks to the MSCI Index', *ICRA Bulletin-Money and Finance,* Oct.-Dec., pp.23-38.

Chakravart, Sangeeta 2006, 'Stock Market and Macro Economic Behaviour in India', *Discussion Paper 106*, Institute of Economic Growth, New Delhi, pp.1-13.

Chakraborty, Tanupa 2007, 'FII Flows and Indian Stock Market Returns - A Cause and Effect Relationship Study', *Indian Accounting Review*, Vol.11, No.1, June, pp.35-48.

Chopra, Rajput and Chopra, Parul 2012, 'FII and Its Impact on Stock Market: A Study on Lead-Lag and Volatility Spill over', *Asian Journal of Finance & Accounting*, Vol.4, No.2, pp.18-38.

Coondoo, Dipankor and Mukherjee, Paramita 2004, 'Volatility of FII in India', *ICRA Money and Finance Journal*, Oct.-May, pp.85-102.

Devi, R, Gayathri and Saravanan, G and Deo, Malabika 2010, 'FIIs' Expected and Unexpected Flows Reaction on Stock Market Volatility', SAARANSH RKG Journal of Management, Vol.2, No.1, July, pp.30-34.

Dhiman, Rahul 2012, 'Impact of Foreign Institutional Investor on The Stock Market', *International Journal of Research in Finance and Marketing,* Vol2, Issue 4, pp.33-46.

Goel, Kavita and Gupta, Rakesh 2011, 'Impact of Globalisation on Stock Market Development in India', *Delhi Business Review*, Vol.12, No.1, Jan -June, pp.69-84.

Gordon, James and Gupta, Poonam 2003, 'Portfolio Flows into India: Do Domestic Fundamentals Matter?', *IMF Working Paper*, Asia and Pacific Department, Jan. Pp.1-36.

Gosh, Saurabh and Hewadkar, Snehal 2009, 'Foreign Portfolio Flows and Their Impact on Financial Markets in India', *Reserve Bank of India Occasional Papers* , Vol.30, winter, pp.51-72.

Goudarzi, Hojatallah and Ramanaryanan, C.S 2011, ' Empirical Analysis of the Impact of FII on the Indian Stock Market Volatility during World Financial Crisis', *International Journal of Economics and Finance*, Vol.3, No.3, Aug., pp.214-226.

Jain, Mamta and Meena, Priyanka and Mathur, T.N 2012, 'Impact of FII on Stock Market with Special Reference to BSE: A Study of Last One Decade', *Asian Journal of Research in Banking and Finance,* Vol.2, Issue 4, April, pp.31-47.

Johri, Amar, Sharma, Akhilesh and Acharya, Deepitka 2012, 'A Study of Foreign Institutional Investors' Investment Patterns in Context to Indian Stock Market & Its Impact on Stock Market Returns', *International Journal of Research in Management,* Vol.6, Issue 2, Nov, pp. 139-157.

Kaur, Maninder and Dhillon, S.Sharanjeet 2010,' Determinants of Foreign Institutional Investors' Investment in India', *Eurasian Journal of Business and Economics*, Vol.3, No.6, pp.57-70.

Kaur, Harvinder 2002, '*Stock Market Volatility in India*', Deep and Deep Publications Pvt. Ltd., New Delhi.

Khan,A.Q and Ikram, Sana 2010, 'Testing Semi – Strong Form of Efficient Market Hypothesis in Relation to the Impact of Foreign Institutional Investors' Investments on Indian Capital Market', *International Journal of Trade, Economics and Finance*, Vol.1, No.4, Dec., 373-379.

Khanna, Sushil 2002, 'Has India Gained From Capital Account Liberalisation? Private Capital Flows and Indian Economy in the 1990s', *Paper presented at the IDEAs Conference on "International Money and Developing Countries: Theoretical and Policy Issues In the Current Context"*, Muttukadu, Tamil Nadu, India, 16-19 December 2002 pp.1-11.

Kohi, Renu 2001, 'Capital Flows and Their Macroeconomic Effects in India', *Working Paper No. 64*, Indian Council for Research on International Economic Relations, March, pp.1-42.

Kohli, Renu 2001, 'Capital Account Liberalisation, Empirical Evidence and Policy Issues-II', *Economic and Political Weekly*, April 21, pp. 1345-1348.

Kohli, Renu 2003, 'Capital Flows and Domestic Financial Sector in India', *Economic and Political Weekly*, Vol 38, No 14.February 22, pp. 761-766.

Kumar, Raj and Gupta, Hariom 2010, 'FII Flows to India: Economic Indicators', SCMS *Journal of Indian Management'*, Vol.7, No.1. Jan.-March, pp.104-116.

Kumar,S.S.S 2006,' Role of Institutional Investors in Indian Stock Market', *Journal of Indian Institute of Management,* Vol.1, No.1, July-Dec., pp.76-80.

Kumar, Santosh, Tavishi and Khatua 2012, 'Behavioural Modelling of Foreign Institutional Investors in Indian Equity Market', *Global Journal of Business Research,* Vol.6, No.1, pp.1-8.

Loomba, Jatinder 2012, 'Does FII Impact Volatility of Indian Stock Market?', *International Journal of Marketing, Financial Services & Management Research,* Vol.1 Issue 7, July, pp.80-93.

Mitra.K. Subrata 2010, 'Relationship among FII, Stock Returns and Currency Change-Over Rates in India', *The International Journal of Business and Financial Research,* Vol.4, No.3, pp.103-112.

Mohan, Rakesh 2008, 'Capital Flows to India', *Paper presented by Deputy Governor, Reserve Bank of India on February 1, 2008 at the annual meeting of Deputy Governors held at the Bank for International Settlements, Basel,* , RBI Monthly Bulletin, pp. 2047-2079.

Mohan, Rakesh 2008, 'Global Financial Crisis and Key Risks: Impact on India and Asia', *Remarks prepared for IMF-FSF High-Level Meeting on the Recent Financial Turmoil and Policy Responses* at Washington D.C. October 9, 2008.

Mohan, Rakesh and Kapur, Muneesh 2009, 'Managing the Impossible Trinity: Volatile Capital Flows and Indian Monetary Policy', *Stanford Centre for International Development Working Paper No.401,* Nov. pp.1-104.

Mukherjee Paramita, Bose, Suchismita and Coondoo 2002, 'FII in the Indian Equity Market: An Analysis of Gaily Flows during January 1999 – 2002', *ICRA Bulletin – Money and Finance*, April-Sept., pp.21-51.

Pal, Parthapratim 2005, 'Recent Volatility in Stock Markets in India and Foreign Institutional Investors', *Economic and Political Weekly,* Vol.40, No.8, Feb., pp.765-772.

Pal, Parthapratim 2005, 'Foreign Portfolio Investment, Stock Market and Economic Development: A Case Study of India', *Paper Submitted for the Annual Conference on Development and Change Mission: Promoting Development in a Globalized World, Sao Paulo, Brazil, November 18 – 20,* pp.1-24.

Paliwal, Minakshi and Vashishtha, S.D 2011, 'FII and Indian Stock Market: A Causality Investigation', *VERSITA Journal,* pp.5-24

Pasricha, J.S and Bansal, Anand 2009, 'Investment Trends of Foreign Institutional Investment in India: An Analytical Overview', *Journal of Academic Research in Economics*, Vol 1, No.3, pp. 308-319.

Pati, Prasad, Ambika, Dr 1999, 'Flow of Foreign Investment: Myths and Realities', *Journal of Commerce,* Golden Jubilee Volume, pp.77-83.

Pradhan, H.K and Narasimhan 2002, 'Stock Price Behaviour in India since Liberalisation', *Asia-Pacific Development Journal*, Vol.9, No.2, Dec., pp.83-106.

Prakash, Ankeshwar and Dharamveer 2012, 'FII: Fuel of India's Growth Engine', *International Journal of Research in Finance and Marketing,* Vol2, Issue 2, 611-627.

Prasann, P.Krishna 2008, 'Foreign Institutional Investors: Preferences in India', *Journal of Administration and Governance*', Vol.3, No.2, pp.40-51.

Prusty, Sadananda 2009, 'Economic Growth, FII Flows and Financial Markets Integration in India', *The Business Review*, Cambridge, Vol.13, No.1, summer, pp.87-92.

Rai, Kulwant and Bhanumurthy, N.R 2004,' Determinants of FII in India: The Role of Return, Risk and Inflation', *The Developing Economies*, XLII-4, Dec, pp.479-493.

Rajput, Ajaysingh and Thaker, Keyur 2008, 'Exchange Rate and Stock Index Relationship in India', *Vilakshan- XIMB Journal of Management'*, Vol.1, Issue No. 1, March, pp.43-56.

Rao, K.S, Chalapati, Murthy, M.R and Ranganathan, K.V.K 1999,' FII and the Indian Stock Market', *Journal of Indian School of Political Economy'*, Vol.11, No.4, Oct.- Dec., pp 622-647.

Ravi, Saraogi 2008, 'Determinants of FII Inflows: India', MPRA *(Munich Personal REPEC Archive) Paper No*.22850, Feb., pp. 1-19.

Ray, K.K 2009, 'FII Flows & Indian Stock Market Returns: A Relationship Study', *Vilakshan, XIMB Journal of Management*, March, pp.39-58.

Richards, Anthony 2004, 'Big Fish Small Pond: The Trading Behaviour and Price Impact of Foreign Investors in Asian Emerging Markets', *Research Discussion Paper*, Economic Analysis Department, Reserve Ban k of Australia, June, pp.1-37.

Sehgal, Sanjay and Tripathi, Neeta 2009, 'Investment Strategies of Foreign Institutional Investors in the Indian Equity Market', *Vision: The Journal of Business Perspective*, Jan., pp.10-18.

Sethi, Narayan 2006, 'Economic Reforms, Capital Flows and Macro Economic Impact on India', pp.1-23.

Shah and Patnaik 2005, 'India's Experience with Capital Flows: The Elusive Quests for A Sustainable Current Account Deficit', National Bureau of Economic Research *Working Paper 11387*, JEL No. F3, May, pp.1-33.

Shankar, Anand 2011. 'Quantitative Easing–II and FII Inflows into India – Is there a Connection?', *RBI Working Paper Series*, Department of Economic and Policy Research, , pp.1-22.

Siddiqui and Azad 2012, 'FII Flows and Indian Financial Market: Relationship and Way Forward', *Vision: the Journal of Business Perspective*, Oct10, pp.175-185.

Sikdar, Soumyen 2006, 'Foreign Capital Inflows into India: Determinants and Management', Asian Development Bank, *INRM (Indian Resident Mission Policy Brief Series)* Policy Brief No.4. pp.1-11.

Sumanjeet, 2009, 'Foreign Capital Flows into India: Compositions, Regulations, Issues and Policy Options', *Working Paper No.155,* Asia Research Centre.

Sumanjeet, 2010, 'Liberalisation of FII in India: Magnitude, Impact Assessment, Policy Initiatives and Issues', *Global Journal of International Business Research*, Vol. 3. No. 3, pp.22-41.

Stulz.M.Rene 1997, 'International Portfolio Flows and Security Returns', *Paper for Woodstock Conference on International Capital Flows of the NBER (National Bureau of Economic Research),* pp.1-48.

Verma, Satish 2012, 'Stock Return, Volatility and the Global Financial Meltdown: The Behaviour of Indian Stock Market', *International Journal of Arts and Commerce,* Vol. 1, No. 7, Dec., pp.166-178.

REPORTS

Various Issues of Handbook of Statistics on Indian Securities Markets, Securities and Exchange Board of India.

Various Issues of Annual Report, Securities and Exchange Board of India.

Various Circulars, Securities and Exchange Board of India.

Various Issues of Handbook of Statistics on Indian Economy, Reserve Bank of India.

Various Issues of Monthly Bulletin, Reserve Bank of India.

Various Issue of Indian Securities Market Review, National Stock Exchange.

Consolidated FDI Policy 2013, Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India, New Delhi.

Expert Group Report 2005, Encouraging FII Flows and checking the Vulnerability of Capital Markets, Department of Economic Affairs, Ministry of Finance, Government of India.

SEBI (Foreign Institutional Investors) Regulations, 1995.

NEWSPAPERS/MAGAZINES

'Cautious FIIs Find Japan, US a Safer Bet', *The Economic Times*, April 4, 2013.

'The Worst may Be Over for the Indian Economy', The *Economic Times*, April 15, 2013.

'Sensex crashes 292 pts as Jittery FIIs Head for Exit', The *Economic Times*, April 5, 2013.

'FIIs Go Cold on Indian Stock', *The Hindustan Times*, April15, 2013.

'FIIs Breath Easy as Reforms Cut Through the Red Tape', *The Economic Times*, April 3, 2013.

'FIIs Infuse Rs.1.4 Lakh cr. Indian Equities in FY13', *The Economic Times*, April 2, 2013.

'Government to Simplify Foreign Investment Regime', *The Economic Times*, January 1, 2013.

'Registered FIIs Taking P-Note Route to Avoid GAAR Overhang', *The Economic Times*, February 2, 2013.

'Govt eases curds on Foreign Institutional Investors', The Tribune, March 24, 2013.

'FII Flows won't End Fund Woes, Feel Insurance Cos', *The Economic Times*, February1 2, 2013.

'FII Position on SGX (Singapore Exchange) Outpaces that on NSE', *The Economic Times*, November 5, 2012.

'FII Holding in Indian Firms near record high', *The Economic Times*, October 31, 2012.

'Rs 40000 cr. and Counting, FII Inflows Near Record Peak', *The Economic Times*, October 31, 2012.

'Govt May Exempt FIIs From Filing I-Returns', *The Economic Times*, October 23, 2012.

'Reforms Juggernaut to Come Rolling into Market', September 24, 2012.

‘Stock, Rs to Bask in Reforms Glory’, September 9, 2012.

‘FII Pullouts Always Set OFF Fall in GDP’, *The Economic Times,* May 7, 2012.

‘Rising Markets Drive FIIs to Cover Futures Positions’, *The Economic Times,* April 4, 2012.

‘SEBI Plans to Relax FIIs Collateral Norms ‘, *The Economic Times,* September 9, 2012.

‘FIIs allowed investing $ 5 billion more in Government Securities, corporate bonds’, *Business Line,* October 11, 2011.

‘RBI Allows FIIs to invest up to $ 25 b in infra Bonds’, *The Economic Times,* November 4, 2011.

‘RBI Notifies Lower Lock-in Period for FIIs in Infra Bonds’, *The Economic Times,* November 4, 2011.

‘Market’s Turnaround Shocks FIIs’, *The Economic Times,* January 1, 2011.

‘FII Part on St Won’t last Long Worries Remain’, *The Economic Times,* January 16, 2012.

‘FIIs Invest over Rs 15000 cr. in Debt, Equities in Jan’, *The Economic Times,* January 16, 2012.

‘Shares fall as FIIs pull out’, *Business Line*, October 4, 2011.

‘FIIs Make a Rush for Safe Assets, Exit India Funds’, *The Economic Times,* October 9, 2012

‘FIIs invest Rs 8000 cr. in equities this month’, July 18, 2011.

‘FIIs ‘Pre –results Buying Spree under SEBI Scanner’, *The Economic Times,* January 16, 2012.

‘India’s Weight in FII Portfolio Rises’, *The Economic Times,* July 19, 2011.

‘Sensex drops below 16000 as FIIs continue to sell’, *Business Line,* August 27, 2011.

‘Politics Playing spoilsport’, *Business Line*, August 20, 2011.

‘Market continues to slump as growth story stutters’, *Business Line*, August 20, 2011.

‘Foreign Investment may stall on volatile political situation’, *The Tribune*, August 20,, 2011.

‘FIIs push Sensex up 485 pts as Fed hints at rate cut’, *The Economic Times*, October 14, 2010.

‘Foreign Inflows: Subbarao, Pranab not on same page’, *The Economic Times*, October 13, 2010.

WEBSITES

- www.bseindia.com
- www.nseindia.com
- www.sebi.gov.in
- www.rbi.org.in
- www.economywatch.com
- www.indiabulls.com
- www.finance.yahoo.com
- www.equitymaster.com
- www.indiainfoline.com
- www.mospi.gov.in
- www.finmin.nic.in