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*RESEARCH ARTICLE*

# FOREIGN INSTITUTIONAL INVESTORS AND INDIA'S STOCK MARKET BEHAVIOUR.

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## Abstract

The growing participation of Foreign Institutional Investors (FIIs) in Indian stock market has raised eyebrows of many Indians. Their influence on stock markets has been widely debated and remained a hot topic in the media. Being a developing country, India attracts a large sum of FII every year. Indian Stock Market, which is one of the indicators of the economic status, is also being affected by the foreign investments made. The FIIs have emerged as noteworthy players and provider of financial services in the Indian stock market whose contribution have added in the growth and development of the stock markets. The Indian Stock Markets have reached new heights and became more volatile making the researchers work in this dimension of establishing the link between FIIs and Stock Market volatility. This paper examines whether market movement can be explained by these investors and their impact on the stock markets. FIIs, because of its short-term nature can have bidirectional causation with the returns of other domestic financial markets. Thus, understanding the determinants of FII is very important for any emerging economy as it exerts a larger impact on the domestic financial markets. This paper is an attempt to find out the determinants of FIIs and their existing impact on the Indian Stock Markets and the Indian Economy as a whole.

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Until the 1980s, India's development strategy was focused on self-reliance and import substitution. Current account deficits were financed largely through debt flows and official development assistance. There was a general repugnance towards foreign investment or private commercial flows. After the launch of the reforms in the early 1990s, there was a gradual shift towards current and capital account convertibility. There are important implications in economics and finance, as regards estimation of volatility in the equity market. There are adverse effects in the economy because of high volatility in the stock prices and can also change the investment decisions by investors due to high volatility, which may lead to a fall in the long-term capital flows from foreign as well as domestic investors. In the last decade financial crisis have exposed that financial asset price volatility has the potential to undermine financial stability. From September14, 1992, with suitable restrictions, FIIs and Overseas Corporate Bodies (OCBs) were permitted to invest in India. Indian stock market was opened to Foreign Institutional Investors on 14$^{th}$ September 1992. The evolution of FII policy in India has displayed a steady and cautious approach to liberalisation of a system of quantitative restrictions. With rapid changes in the economy because of liberal economic policies and fast pace changes due to globalisation, Indian market has become a focus point for foreign investors. Organisations tend to target for large volume of trade in this era of globalisation. The Indian market is steadily growing and had allured domestic investors community and foreign investors group in the past .The major part of investment in Indian market is attributed to institutional investors among whom foreign investors are of primary importance. One

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eminent concern in the matter is whether these Foreign Institutional Investors (FII) direct the Indian stock market. Unprecedented globalizations have witnessed double digit economic growth resulting in fierce competition and accelerated pace of innovation. As a result inflow of Foreign Direct investments has become a striking measure of economic development in both developed and developing countries. Foreign Capital comes in two forms- FDI and FII. FDI is considered as a more stable form of foreign capital as compared to FII. But, FII inflows and outflows directly create impact on stock market. Hence FIIs have emerged as movers and shakers of Indian Stock Market.

**Who is a Foreign Institutional Investor?**

Institutional Investor is any investor or investment fund that is from or registered in a country outside of the one in which it is currently investing. Foreign Institutional Investor (FII) means an institution established or incorporated outside India which proposes to make investment in securities in India. They are registered as FIIs in accordance with Section 2 (f) of the SEBI (FII) Regulations 1995. FIIs are allowed to subscribe to new securities or trade in already issued securities. Foreign institutional investors (FIIs) are those institutional investors which invest in the assets belonging to a different country other than that where these organizations are based. Institutional investors are organizations which pool large sums of money and invest those sums in securities, real property and other investment assets. They can also include operating companies which decide to invest their profits to some degree in these types of assets. The resurgence of the Indian stock market should be credited to the Foreign Institutional Investors (FIIs). Institutional investors include hedge funds, insurance companies, pension funds and mutual funds. The growing Indian market had attracted the foreign investors, which are called Foreign Institutional Investors (FIIs). There is a long list of entities that are eligible to get registered as FIIs such as pension funds, mutual funds, insurance companies, investment trusts, banks, university funds, endowments, foundations, sovereign wealth funds, hedge funds and charitable trusts. In fact, asset management companies, investment managers, advisors or institutional portfolio managers set up and/or owned by NRIs are also eligible to be registered as FIIs. The nodal point for FII registrations is SEBI and hence all FIIs must register themselves with SEBI and should also comply with the exchange control regulations of the central bank. Entities covered by the term 'FII' include "Overseas pension funds, mutual funds, investment trust, asset management company, nominee company, bank, institutional portfolio manager, university funds, endowments, foundations, charitable trusts, charitable societies, a trustee or power of attorney holder incorporated or established outside India proposing to make proprietary investments or investments on behalf of a broad- based fund Foreign portfolio inflows through FIIs, in India are important from the policy perspective, especially when the country has emerged as one of the most attractive investment destinations in Asia.

**Importance of the Study:-**

In the recent decades, the liberalization/globalization measures adopted by most of the countries have made the global market more interdependent than earlier. Huge foreign capital flows affect not only wide range of economic variables such as exchange rates, interest rates, foreign exchange reserves, domestic monetary conditions but also savings and investments and thus causing a snowballing effect on the Indian stock market as well. Since the beginning of liberalization FII flows to India have steadily grown in importance. Foreign capital flows have come to be acknowledged as one of the important sources of funds for economies that would like to grow at a rate higher than what their domestic savings can support. This resulted in the integration of global financial markets. As a result, capital started flowing freely across national borders seeking out the highest rate of return. India is considered as a good investment option by world investors in spite of political differences and lack of infrastructure facility etc. Indian market presents vast potential and alluring and encouraging foreign investors continuously. Foreign portfolio inflows through FIIs, in India, are important from the policy perspective, especially when the country has emerged as one of the most attractive investment destinations in Asia. This paper focuses on studying the relationship between Foreign Institutional Investors and the Indian Stock Market. The present study examines the causes and effects of FII net flows into Indian financial markets with the support of empirical data for the period January 2000 to March 2014.

**Objective of the Study:-**

The liberalization process of the Indian economy has been a contributing factor for the increase in financial flows. It is generally believed that FII investment broadens the base of portfolio diversification and causes a long- term increase in the stock prices by reducing the equilibrium rate of return. For a domestic economy, it is equally important to analyze the relationship between stock market and foreign investment. The main objectives of this research paper are as follows:

- To study the correlation between Foreign Institutional Investors and average BSE Indices (Year high+ Year low).
- To study the impact of average BSE Index on Foreign Institutional Investors investment behaviour.
- To study the impact of Foreign Institutional Investment on BSE Index.
- To examine the effect of percentage change in Foreign Institutional investment on stock market indices.
- To make a comparative analysis between FII (investment) and percentage change in stock market indices (BSE).

**Review of Literature:-**

According to **Gooptu, S. (1994),** it is important for the policy makers in the developing economies to provide right signals to international capital markets in terms of economic and domestic institutional reforms to successfully compete with other developing economies to attract portfolio investment from abroad. Study found that to attract more private capital flows policy makers must continue to provide right signal to foreign institutional investors in terms of economic and domestic institutional reforms that attract portfolio investment from abroad. Study concludes that there is a need to continue for increasing pace of reforms in any given emerging stock market in order to maintain the steady portfolio flows to developing countries.

**Pal Parthapratim** (1998) analyzed in his paper entitled, "Foreign Portfolio Investment in Indian Equity Markets-Has the Economy Benefited" analyzed the mainstream argument that the entry foreign portfolio investors will boost a country's stock market and economy does not seem be working in India. The influx of FIIs failed to invigorate the Indian stock market. The supposed lineage effects have not worked in the way the mainstream model predicted.

**Gordon and Gupta, (2003)** found causation running from FII inflows to return in BSE. They observed that FIIs act as market makers and book profits by investing when prices are low and selling when they are high. Hence, there are contradictory findings by various researchers regarding the causal relationship between FII net inflows and stock market capitalization and returns of BSE/ NSE. Therefore, there is a need to investigate whether FIIs are the cause or effect of stock market fluctuations in India.

**Ramanarayanan C.S. (2011)** found that BSE500 returns series exhibit leverage effects and in addition to leverage effects exhibit other stylized facts such as volatility clustering and leptokurtosis associated with stock returns on developed stock markets. Further, he found that TGARCH can be possible representative of the asymmetric conditional volatility process for daily returns series of BSE500. In this regards preparing necessary national funds before facing crisis is one alternative. Also, it is recommended that the rules related to common control mechanism i.e. price limits and volume quotas be restructured relative to the status of both the economy and Indian stock market trading cycles. All in all, a growing and increasingly complex market-oriented economy, and its greater integration with global trade and finance, will require deeper, more efficient, and well-regulated financial markets.

**Loomba, J. (2012),** attempted to testify the behaviour of FII trading and its effect on Indian stock market. He observed that in the course of capital market liberalization, foreign capital has become increasingly significant source of finance and institutional investors are growing their influence in developing markets. He concluded that the Indian stock markets have come in age where there were significant developments in the last 15 years make the markets at par with the developed markets.

**Anubha (2013)** in his research studied the influence of FIIs investment on Indian stock market by utilizing daily FIIs investment data and daily reruns of Sensex and Nifty for the period from 2001 to 2010. The study used correlation and regression techniques and observed that FIIs investment have significant positive impact on stock market and on major stock indices. The findings also show that the degree of impact of FIIs varies among various sectors of the economy.

**Saurabh Singh, Dr. L. K. Tripathi And Anupama Pardesi** "FII Flow and Indian Stock Market: A Causal Study" **{Jan. 2014}-** This paper tries to Examine the relationship of FIIs with the performance of Indian stock market and its impact on the performance of Indian stock market after 2007. It finds out that there is by-directional causality between FII and Nifty as well as FII movement and SENSEX. P value is 0 which shows Nifty and Sensex returns do not cause FII purchase and FII sales. P value is .001 which is less than 0.05 suggest that FII movements cause changes in the values of Nifty and Sensex. They use the Granger – causality test & Dickey-Fuller test.

**Regulatory framework of fiis:-**
Foreign Institutional Investors are the primary source of portfolio investment in India. The volatile nature of capital flows to emerging markets seen in the early 1990s and the nature and growth of such flows to India, FII investment in India, obviously called for special regulatory attention. Investment by FIIs in India is jointly regulated by Securities and Exchange Board of India (SEBI) through the SEBI (Foreign Institutional Investors) Regulations, 1995 and by the Reserve Bank of India through Regulation 5(2) of the Foreign Exchange Management Act (FEMA), 1999.

It is generally believed that FII investment broadens the base of portfolio diversification and causes a long- term increase in the stock prices by reducing the equilibrium rate of return. For a domestic economy, it is equally important to analyze the relationship between stock market and foreign investment. It is found that there is a unidirectional casual relationship between market capitalization and stock market and between net FII investment and stock market (N P Tripathy, 2007). In September 1992, the government of India announced the opening of the country's stock markets to direct participation by FIIs through guidelines for Foreign Institutional Investment. In November 1995, the SEBI (Foreign Institutional Investors) Regulations, 1999 has been notified, which were largely based on the earlier guidelines.

**Research Gap:-**
On the basis of extensive literature review, it is has been observed that few works have already been done to find out the impact of FIIs on the performance of Indian stock indices. But no work has so far been done to assess the direct impact of FIIs in the growth and development of the Indian capital market. Further, on the basis of literature review, it was also identified that no work has been carried out to find out the variability of FIIs investments in the debt and equity segment. The present work is an endeavour by the researcher to bridge this gap. This work would also lead to better understanding of the Indian capital market and the role of FIIs in its development. The present work also explores measures as to how FIIs investment can be motivated, so that the gap between investment and savings can be bridged and growth of Indian economy can be accelerated.

**Hypothesis of the Study:-**
**For Correlation Analysis:-**
**$H_{0a}$:** There is no significant correlation between BSE index (Avg.) and total Foreign Institutional Investment (FII) by foreign investors in India.
**$H_{0b}$**: There is no significant correlation between Capital Goods Index (BSE) and total Foreign Institutional Investment (FII) by foreign investors in India.
**$H_{0c}$:** There is no significant correlation between Consumer Durable Index (BSE) and total Foreign Institutional Investment (FII) by foreign investors in India.
**$H_{0d}$:** There is no significant correlation between FMCG Index (BSE) and total Foreign Institutional Investment (FII) by foreign investors in India
**$H_{0e}$:** There is no significant correlation between IT Index (BSE) and total Foreign Institutional Investment (FII) by foreign investors in India.

**Data analysis:-**
No. of registered foreign institutional investors increases from the year to year when they are allowed to invest in Indian capital market Year wise registration of FIIs is given by the following table:

**Table 1:-** The number of FIIs registered with SEBI from 1990 to 2012.

| Year | Number of FIIs registered | Trend% |
|---|---|---|
| 1990-91 | - | - |
| 1991-92 | - | - |
| 1992-93 | 18 | - |
| 1993-94 | 158 | 777.78 |
| 1994-95 | 308 | 94.94 |
| 1995-96 | 367 | 19.16 |
| 1996-97 | 439 | 19.62 |
| 1997-98 | 496 | 12.98 |
| 1998-99 | 450 | -9.27 |

| | | |
|---|---|---|
| 1999-00 | 506 | 12.44 |
| 2000-01 | 527 | 4.15 |
| 2001-02 | 490 | -7.02 |
| 2002-03 | 502 | 2.45 |
| 2003-04 | 540 | 7.57 |
| 2004-05 | 685 | 26.85 |
| 2005-06 | 882 | 28.76 |
| 2006-07 | 997 | 13.04 |
| 2007-08 | 1319 | 32.30 |
| 2008-09 | 1635 | 23.96 |
| 2009-10 | 1713 | 4.77 |
| 2010-11 | 1722 | 0.53 |
| 2011-12 | 1765 | 2.50 |

**Source:** Compiled from various issues of SEBI Handbook

★ The FIIs were allowed to enter into the Indian market from 1992, so previous data is not available from 1990. Data after 2012 is also not available clearly from the SEBI website

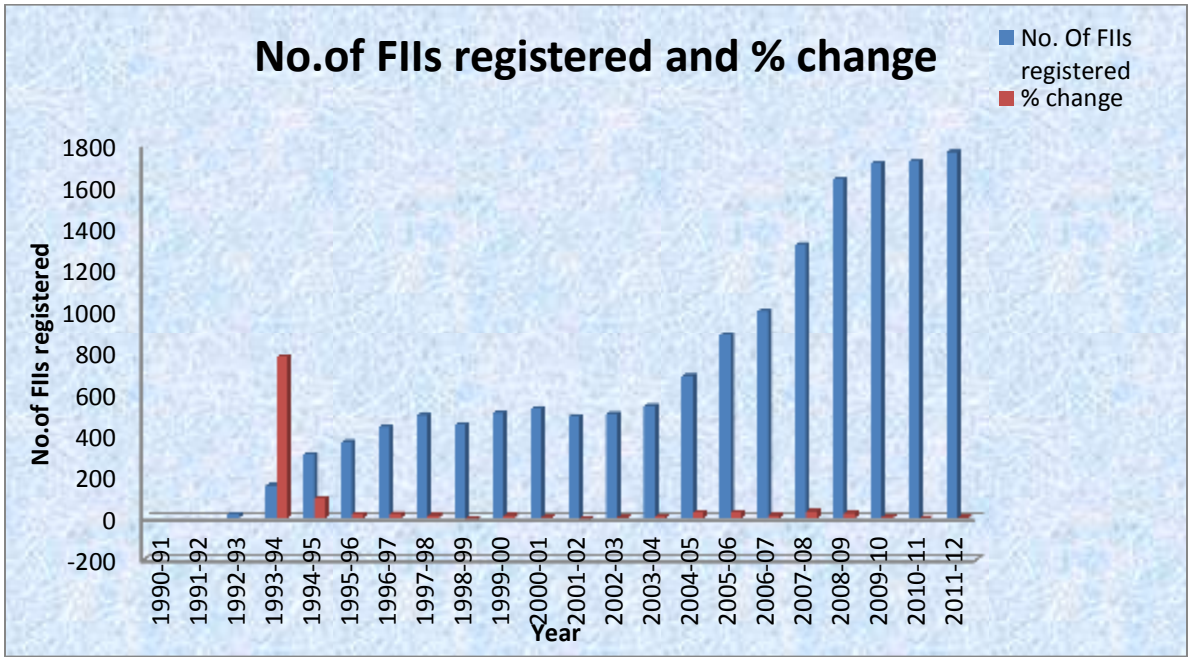


**Figure 1:-** The number of FIIs registered with SEBI from 1990 to 2012

**Table 2:-** The year wise total investment of the Foreign Institutional Investors in the Indian market from April 2000 to March 2014.

| Year | Total FII Investment (equity and debt) (in Rs.) |
|---|---|
| 2000-01 | 9,934 |
| 2001-02 | 8,762 |
| 2002-03 | 2,689 |
| 2003-04 | 45,765 |
| 2004-05 | 45,882 |
| 2005-06 | 41,467 |
| 2006-07 | 30,841 |
| 2007-08 | 66,179 |
| 2008-09 | -45,811 |
| 2009-10 | 1,42,659 |

| | |
|---|---|
| 2010-11 | 1,46,438 |
| 2011-12 | 93,726 |
| 2012-13 | 1,68,367 |
| 2013-14 | 51,649 |

**Source:** Secondary data, www.sebi.gov.in

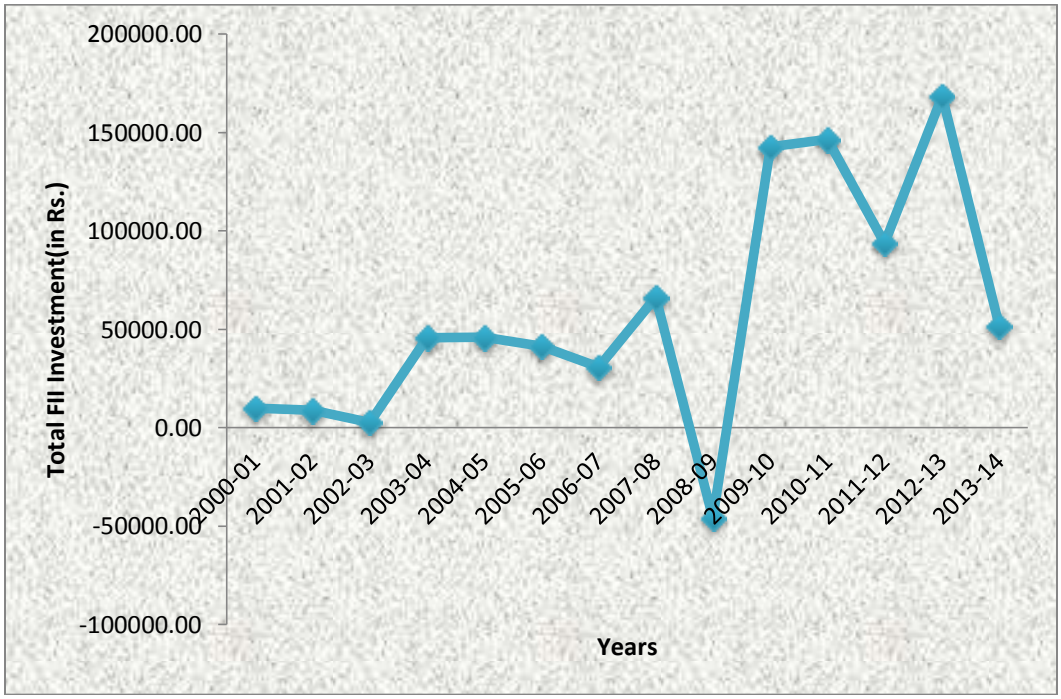


**Figure 2:-** The total investment by the Foreign Institutional Investors in the Indian Capital Market from 2000 to 2014.

★ In the year 2000, there was inflow of investment by the Foreign Institutional Investors to the equity market but they also withdrew their investment from the debt market. So the net investment by the Foreign Institutional Investors is Rs. 9,934 crores (10,207-273). The investment by Foreign Institutional Investors increased to Rs.45, 765 in 2003. The difference in the investment in 2003 from the investment in 2002 is Rs. 43,076 (45,765-2,689). The investment in 2004 increased to a little extent by Rs. 117 (45,882-45,765) from the previous year, 2003. The investment decreased to Rs.41, 467 in the year 2005. The decrease in the investment in 2005 from the previous year 2004 was of Rs. (4415). The investment increased in 2007 to Rs. 66,179. There was more outflow of investment by FII investors from the equity market and less inflow of investment to the debt market. So the total FII investment also decreased. The investment was negative Rs. (45,811). The investment increased in 2009 to a great extent to Rs. 1, 42,659. This marked a positive impact on the FII investment and their faith on the Indian Capital market. There was again an increase in the investment by the FIIs of Rs. 1, 46,438 in the year 2010. The increase in the investment from the previous year was of Rs. 3,779. The investment in 2011 decreased to Rs. 93,726. The decrease from the previous year, 2010 by Rs. (52,712). The investment increased in 2012 to Rs. 1, 68,367.

**Table 3:-** FII and BSE Indices

| Year | FII Total | FII Equity | FII Debt | BSE Index Avg | Capital Goods Index | Consumer Durable Index | FMCG Index | IT Index | S & P Index |
|---|---|---|---|---|---|---|---|---|---|
| **2000-01** | 9934 | 10207 | -273 | 4821.12 | 881.555 | 1307.77 | 1037.27 | 2655.81 | 4821.12 |
| **2001-02** | 8762 | 8072 | 690 | 3528.49 | 656.665 | 689.975 | 927.73 | 1613.74 | 3528.49 |
| **2002-03** | 2689 | 2527 | 162 | 3293.375 | 787.215 | 769.74 | 819.66 | 1678.86 | 3293.375 |
| **2003-04** | 45765 | 39960 | 5805 | 4412.6 | 1617.8 | 1051.535 | 1109.8 | 2073.05 | 4412.6 |
| **2004-05** | 45882 | 44123 | 1759 | 5422.325 | 2354.62 | 1174.49 | 1058.97 | 2621.93 | 5422.325 |
| **2005-06** | 41467 | 48801 | -7334 | 7756.155 | 4278.98 | 2373.31 | 1647.47 | 3742.74 | 7756.155 |
| **2006-07** | 30841 | 25236 | 5605 | 11417.16 | 7596.035 | 3046.765 | 1934.17 | 5272.56 | 11417.16 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **2007-08** | 66179 | 53404 | 12775 | 16407.11 | 14605.8 | 5155.82 | 2319.92 | 4529.59 | 16407.11 |
| **2008-09** | -45811 | -47706 | 1895 | 14452.08 | 13129.09 | 4377.11 | 1987.38 | 2227.96 | 14452.08 |
| **2009-10** | 142659 | 110221 | 32438 | 12789.06 | 9872.395 | 2697.24 | 2791.55 | 5186.35 | 12789.06 |
| **2010-11** | 146438 | 110121 | 36317 | 18380.32 | 14772.7 | 5531.31 | 3684.12 | 6824.82 | 18380.32 |
| **2011-12** | 93726 | 43738 | 49988 | 18158.4 | 11679.22 | 6079.935 | 4035.31 | 5751.93 | 17900.33 |
| **2012-13** | 168367 | 140033 | 28334 | 17485.1 | 9811.94 | 6752.725 | 5916.22 | 5684.08 | 17485.1 |
| **2013-14** | 51649 | 79709 | -28060 | 19466.23 | 8965.155 | 6674.925 | 6567.01 | 9081.78 | 19466.23 |

**Source:** Secondary data, www.bseindia.com

**Table 4:-** Correlations

| | | **FII Total (Equity + Debt)** | **Capital Goods Index (BSE)** | **Consumer Durable Index (BSE)** | **FMCG Index (BSE)** | **IT Index (BSE)** | **BSE Sensex Average (Year High & Year Low Avg.) [S & P Index]** |
|---|---|---|---|---|---|---|---|
| **FII Total (Equity + Debt)** | Pearson Correlation | 1 | | | | | |
| | Sig. (2-tailed) | | | | | | |
| | N | 14 | | | | | |
| **Capital Goods Index (BSE)** | Pearson Correlation | **.453** | 1 | | | | |
| | Sig. (2-tailed) | .104 | | | | | |
| | N | 14 | 14 | | | | |
| **Consumer Durable Index (BSE)** | Pearson Correlation | **.521** | .841** | 1 | | | |
| | Sig. (2-tailed) | .056 | .000 | | | | |
| | N | 14 | 14 | 14 | | | |
| **FMCG Index (BSE)** | Pearson Correlation | **.606*** | .586* | .897** | 1 | | |
| | Sig. (2-tailed) | .022 | .028 | .000 | | | |
| | N | 14 | 14 | 14 | 14 | | |
| **IT Index (BSE)** | Pearson Correlation | **.611*** | .627* | .817** | .881** | 1 | |
| | Sig. (2-tailed) | .020 | .016 | .000 | .000 | | |
| | N | 14 | 14 | 14 | 14 | 14 | |
| **BSE Sensex Average (Year High & Year Low Avg.) [S & P Index]** | Pearson Correlation | **.546*** | .917** | .974** | .850** | .843** | 1 |
| | Sig. (2-tailed) | .043 | .000 | .000 | .000 | .000 | |
| | N | 14 | 14 | 14 | 14 | 14 | 14 |

*. Correlation is significant at the 0.05 level (2-tailed).

**Table 5:-** Correlations (BSE Sensex Avg. & FII equity and debt separately)

| | | **BSE Sensex Average (Year High & Year Low Avg.) [S & P Index]** | **FII (Equity)** | **FII (Debt)** |
|---|---|---|---|---|
| **BSE Sensex Average (Year High & Year Low** | Pearson Correlation | 1 | | |
| | Sig. (2-tailed) | | | |

| | | | | |
|---|---|---|---|---|
| **Avg.) [S & P Index]** | N | 14 | | |
| **FII (Equity)** | Pearson Correlation | **.511** | 1 | |
| | Sig. (2-tailed) | .062 | | |
| | N | 14 | 14 | |
| **FII (Debt)** | Pearson Correlation | **.392** | .419 | 1 |
| | Sig. (2-tailed) | .166 | .136 | |
| | N | 14 | 14 | 14 |

**Table 5.1:** Hypothesis Testing (Correlations)

| **Hypothesis** | **Description (Correlation)** | **r & (p) Values** | **Result** | **Remarks** |
|---|---|---|---|---|
| 1A | Between BSE index (Avg.)[1] and Total FII | **.546*** (.043) | Significant Null hypothesis rejected | Significant correlation between BSE index (Avg.) and Total FII |
| 1B | Between Capital goods index (BSE) and Total FII | .453 (.104) | Not Significant Null hypothesis accepted | No Significant correlation Between Capital goods index (BSE) and Total FII |
| 1C | Between Consumer durables index (BSE) and Total FII | .521 (.056) | Not Significant Null hypothesis accepted | No Significant correlation Between Consumer durables index (BSE) and Total FII |
| 1D | Between FMCG index (BSE) and Total FII | **.606*** (.022) | Significant Null hypothesis rejected | Significant correlation Between FMCG index (BSE) and Total FII |
| 1E | Between IT index (BSE) and Total FII | **.611*** (.020) | Significant Null hypothesis rejected | Significant correlation Between IT index (BSE) and Total FII |

*. Correlation is significant at the 0.05 level (2-tailed).

From the above tables it can be observed the p value 0.043 is significant and hence the null hypothesis is rejected. Thus it can be concluded that there is a significant (p=0.043) correlation among BSE Sensex and Total FII (0.546) in India. The correlation between BSE Sensex and FII Equity (0.511) is slightly higher than the correlation between BSE Debt and FII (0.392) in India. It indicates FII equity is more correlated to BSE index than FII Debt. Further there exists a significant correlation between FMCG index (BSE) & Total FII (0.606) and between IT index (BSE) & Total FII (0.611). But there is no significant correlation between Capital goods index (BSE) & Total FII and between Consumer durables index (BSE) and Total FII.

**Regression Analysis:-**

**Hypotheses**

**Hypothesis 2A**

$H_{0:}$ There is no significant impact of BSE Index (Avg.) on Foreign Institutional Investors' investment behaviour (Total FII) in India.

$H_1$: There is a significant impact of BSE Index (Avg.) on Foreign Institutional Investors' investment behaviour (Total FII) in India.

**Hypothesis 2B**

$H_{0:}$ There is no significant impact of total FII on Indian stock market indices [BSE Index (Avg.)].

$H_1$: There is a significant impact of total FII on Indian stock market indices [BSE Index (Avg.)].

**Hypothesis 2C**

[1] Average BSE index (year high & year low average) is same as S & P index

$H_0$: There is no significant impact of total FII on Indian stock market indices [BSE Index (Avg.)].
$H_1$: There is a significant impact of capital goods Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India.

**Hypothesis 2D**

$H_0$: There is no significant impact of consumer durables Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India.
$H_1$: There is a significant impact of consumer durables Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India.

**Hypothesis 2E**

$H_0$: There is no significant impact of FMCG Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India.
$H_1$: There is a significant impact of FMCG Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India.

**Hypothesis 2F**

$H_0$: There is no significant impact of IT Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India.
$H_1$: There is a significant impact of IT Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India.

**Hypothesis 2G**

$H_0$: There is no significant joint impact of total FII equity and FII debt on Indian stock market indices [BSE Index (Avg.)].
$H_1$: There is a significant joint impact of total FII equity and FII debt on Indian stock market indices [BSE Index (Avg.)].

**Table 6:-** Hypothesis Testing & Model Fit

Testing of Hypothesis 2A & Model Fit

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .546[a] | .298 | .240 | 53224.702876 |

a. Predictors: (Constant), BSE Sensex Average (Year High & Year Low Avg.) [S & P Index]

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 14435843480.189 | 1 | 14435843480.189 | 5.096 | .043[b] |
| | Residual | 33994427955.025 | 12 | 2832868996.252 | | |
| | Total | 48430271435.214 | 13 | | | |

a. Dependent Variable: FII Total (Equity + Debt)
b. Predictors: (Constant), BSE Sensex Average (Year High & Year Low Avg.) [S & P Index]

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -2723.960 | 30333.009 | | -.090 | .930 |
| | BSE Sensex Average (Year High & Year Low Avg.) [S & P Index] | 5.366 | 2.377 | .546 | 2.257 | .043 |

a. Dependent Variable: FII Total (Equity + Debt)

The value of $R^2$ equals 0.298, indicates that only **29.8 per cent** of the variations in total FII in India is influenced by average BSE index[2]. In other words Foreign Institutional Investors' investment behaviour is only 29.8% influenced

[2] $R^2$ should be greater than 0.6

by average BSE index. The value of $R^2$ is significant (at 0.05 level) as indicated by p value (0.043) of F statistics[3] as obtained in ANOVA table. Hypothesis 2A is rejected which means There is a significant impact of BSE Index (Avg.) on Foreign Institutional Investors' investment behaviour (Total FII) in India. But the $R^2$ value should be 0.6 or more so as to obtain a good model fit.

The estimated regression equation as obtained in Table may be written as:

**Y = -2723.96 + 5.366 I**

P Value = (0.930) (0.043)

Where,

Y = Total FII

I = Avg. BSE Index

Testing of Hypothesis 2B & Model Fit

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .546[a] | .298 | .240 | 5415.435777 |

a. Predictors: (Constant), FII Total (Equity + Debt)

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 149445379.703 | 1 | 149445379.703 | 5.096 | .043[b] |
| | Residual | 351923335.862 | 12 | 29326944.655 | | |
| | Total | 501368715.565 | 13 | | | |

a. Dependent Variable: BSE Sensex Average (Year High & Year Low Avg.) [S & P Index]

b. Predictors: (Constant), FII Total (Equity + Debt)

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 8062.489 | 2028.439 | | 3.975 | .002 |
| | FII Total (Equity + Debt) | .056 | .025 | .546 | 2.257 | .043 |

a. Dependent Variable: BSE Sensex Average (Year High & Year Low Avg.) [S & P Index]

The value of $R^2$ equals to 0.298 indicates that only **29.8 per cent** of the variations in average BSE index in India is influenced by total FII in a year. The value of $R^2$ is significant (at 0.05 level) as indicated by p value (0.043) of F statistics[4] as obtained in ANOVA table. Hypothesis 2B is rejected which means there is a significant impact of total FII on Indian stock market indices [BSE Index (Avg.)]. But the $R^2$ value should be 0.6 or more so as to obtain a good model fit.

The estimated regression equation as obtained in Table may be written as:

**Y = 8062.489 + 0.056 F**

P Value = (0.930) (0.043)

Where,

Y = Avg. BSE Index

F = Total FII

Testing of Hypothesis 2C & Model Fit

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .453[a] | .205 | .139 | 56625.877099 |

[3] F value of ≥ 10 indicates all independent variables have impact on dependent variable

[4] F value of ≥ 10 indicates all independent variables have impact on dependent variable

a. Predictors: (Constant), Capital Goods Index (BSE)

**ANOVA**[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 9952391948.760 | 1 | 9952391948.760 | 3.104 | .104[b] |
| | Residual | 38477879486.455 | 12 | 3206489957.205 | | |
| | Total | 48430271435.214 | 13 | | | |

a. Dependent Variable: FII Total (Equity + Debt)

b. Predictors: (Constant), Capital Goods Index (BSE)

**Coefficients**[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 20418.490 | 26040.799 | | .784 | .448 |
| | Capital Goods Index (BSE) | 5.175 | 2.937 | .453 | 1.762 | .104 |

a. Dependent Variable: FII Total (Equity + Debt)

The value of $R^2$ equals 0.205, indicates that only **20.5 per cent** of the variations in total FII in India is influenced by Capital Goods Index of BSE. The value of $R^2$ is not significant (at 0.05 level) as indicated by p value (0.104) of F statistics[5] as obtained in ANOVA table. Hypothesis 2C is accepted which means there is no significant impact of capital goods Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India.

Testing of Hypothesis 2D & Model Fit

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .521[a] | .271 | .211 | 54232.229175 |

Predictors: (Constant), Consumer Durable Index (BSE)

**ANOVA**[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 13136655260.244 | 1 | 13136655260.244 | 4.467 | .056[b] |
| | Residual | 35293616174.970 | 12 | 2941134681.248 | | |
| | Total | 48430271435.214 | 13 | | | |

a. Dependent Variable: FII Total (Equity + Debt)

b. Predictors: (Constant), Consumer Durable Index (BSE)

**Coefficients**[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 10590.219 | 26609.925 | | .398 | .698 |
| | Consumer Durable Index (BSE) | 13.847 | 6.552 | .521 | 2.113 | .056 |

a. Dependent Variable: FII Total (Equity + Debt)

The value of $R^2$ equals 0.271, indicates that only **27.1 per cent** of the variations in total FII in India is influenced by Consumer Durables Index of BSE. The value of $R^2$ is not significant (at 0.05 level) as indicated by p value (0.056) of F statistics[6] as obtained in ANOVA table. Hypothesis 2D is accepted which means there is no significant impact of consumer durables Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India.

Testing of Hypothesis 2E & Model Fit

[5] F value of ≥ 10 indicates all independent variables have impact on dependent variable

[6] F value of ≥ 10 indicates all independent variables have impact on dependent variable

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .606[a] | .367 | .314 | 50552.258087 |

Predictors: (Constant), FMCG Index (BSE)

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 17763901862.918 | 1 | 17763901862.918 | 6.951 | .022[b] |
| | Residual | 30666369572.296 | 12 | 2555530797.691 | | |
| | Total | 48430271435.214 | 13 | | | |

a. Dependent Variable: FII Total (Equity + Debt)
b. Predictors: (Constant), FMCG Index (BSE)

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 6777.163 | 23587.515 | | .287 | .779 |
| | FMCG Index (BSE) | 19.914 | 7.553 | .606 | 2.637 | .022 |

a. Dependent Variable: FII Total (Equity + Debt)

The value of $R^2$ equals 0.367, indicates that **36.7 per cent** of the variations in total FII in India is influenced by FMCG Index of BSE. The value of $R^2$ is significant (at 0.05 level) as indicated by p value (0.022) of F statistics[7] as obtained in ANOVA table. Hypothesis 2E is rejected which means there is a significant impact of FMCG Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India. But the $R^2$ value should be 0.6 or more so as to obtain a good model fit.

The estimated regression equation as obtained in Table may be written as:

**Y = 6777.163 + 19.914 FM**

P Value = (0.779) (0.022)

Where,

Y = Total FII

FM = FMCG Index (BSE)

Testing of Hypothesis 2F & Model Fit

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .611[a] | .373 | .321 | 50309.474898 |

a. Predictors: (Constant), IT Index (BSE)

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 18057752261.058 | 1 | 18057752261.058 | 7.135 | .020[b] |
| | Residual | 30372519174.156 | 12 | 2531043264.513 | | |
| | Total | 48430271435.214 | 13 | | | |

a. Dependent Variable: FII Total (Equity + Debt)
b. Predictors: (Constant), IT Index (BSE)

**Coefficients[a]**

| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|

[7] F value of ≥ 10 indicates all independent variables have impact on dependent variable

| | | B | Std. Error | Beta | | |
|---|---|---|---|---|---|---|
| 1 | (Constant) | -12912.239 | 29676.834 | | -.435 | .671 |
| | IT Index (BSE) | 16.784 | 6.284 | .611 | 2.671 | .020 |

a. Dependent Variable: FII Total (Equity + Debt)

The value of $R^2$ equals 0.373, indicates that **37.3 per cent** of the variations in total FII in India is influenced by IT Index of BSE. The value of $R^2$ is significant (at 0.05 level) as indicated by p value (0.02) of F statistics[8] as obtained in ANOVA table. Hypothesis 2F is rejected which means there is a significant impact of IT Index (BSE) on Foreign Institutional Investors' investment behaviour (Total FII) in India. But the $R^2$ value should be 0.6 or more so as to obtain a good model fit.

The estimated regression equation as obtained in Table may be written as:

**Y = -12912.239 + 16.784 IT**

P Value = (0.671) (0.020)

Where,

Y = Total FII

IT = IT Index (BSE)

Testing of Hypothesis 2G & Model Fit

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .547[a] | .299 | .172 | 5652.038403 |

a. Predictors: (Constant), FII (Debt), FII (Equity)

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 149967796.382 | 2 | 74983898.191 | 2.347 | .142[b] |
| | Residual | 351400919.184 | 11 | 31945538.108 | | |
| | Total | 501368715.565 | 13 | | | |

a. Dependent Variable: BSE Sensex Average (Year High & Year Low Avg.) [S & P Index]

b. Predictors: (Constant), FII (Debt), FII (Equity)

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 8101.501 | 2138.929 | | 3.788 | .003 |
| | FII (Equity) | .053 | .035 | .421 | 1.513 | .159 |
| | FII (Debt) | .066 | .085 | .215 | .774 | .455 |

a. Dependent Variable: BSE Sensex Average (Year High & Year Low Avg.) [S & P Index]

The value of $R^2$ equals 0.299, indicates that only **29.9 per cent** of the variations in BSE average index are influenced by the FII Equity and FII Debt in India[9]. The value of $R^2$ is not significant (at 0.05 level) as indicated by p value (0.142) of F statistics[10] as obtained in ANOVA table. From analysis it is found that FII equity and FII debt have positive but no significant impact on average BSE index in India.

It means there are so many other factors do exists (apart from FII debt and equity) in the Indian market condition which has impact on the BSE index. Further studies may be carried out by adding more independent variables to increase goodness of fit of the model i.e. higher $R^2$ and adjusted $R^2$ and F value greater than equals to 10. Data, if taken for more number of years may also yield a different result.

The estimated regression equation as obtained in Table may be written as:

[8] F value of $\geq 10$ indicates all independent variables have impact on dependent variable

[9] $R^2$ should be greater than 0.6

**Y = 8101.501 + .053E + .066D**

P Value = (0.003) (0.159) (0.455)

Y = Average BSE Index

E = FII Equity

D = FII Debt

**Findings of the study:-**

Findings of the study are as follows:

- Indian stock markets are one of the oldest and the most developed markets in Asia, but still quiet under developed. The Indian markets are still undervalued to some extent and has a lot of growth potential in the future.
- It was found that FIIs flourished in the capital market over the period of study from 2000 to 2010, except during the year 2008 there was a negative impact on FIIs.
  Foreign Institutional Investors have gained a significant interest in the Indian market and also a significant shareholding in Indian companies.

**Findings of the Correlation Analysis:-**

- It has been found that there exists a significant correlation between the investment of the Foreign Institutional Investors and the Bombay Stock Exchange's (average) from the year April 2000 to March 2014.
- There is no significant correlation between the total (equity and debt) investment of the Foreign Institutional Investors and the Bombay Stock Exchange's Capital Goods Index.
- There exists no significant correlation between the Bombay Stock Exchange's Consumer Durables Index and the total of the Foreign Institutional Investors investment.
- There is a significant correlation between the Bombay Stock Exchange's Fast Moving Consumer Goods and the total of Foreign Institutional Investors investment.
- It is evident from the analysis of data and correlation analysis that there exists a significant correlation between the Bombay Stock Exchange's Information Technology Index and the total (debt and equity) investment of the Foreign Institutional Investors.
- The correlation between BSE Sensex and Foreign Institutional Investors' investment in Equity (0.511) is slightly higher than the correlation between the BSE Sensex and Foreign Institutional Investors' investment in Debt (0.392) in India.

## Conclusion:-

The beginning of the new millennium is remarked in the Indian capital market at the era of rapid growth and development. The first half of the first decade of the new millennium the Indian stock markets showed some unprecedented growth. Till the first quarter of 2008 the market growth was phenomenal and everyone was expecting the market to grow at even faster pace. The present research has clearly established the relation that in short run FIIs do not cause volatility in Indian markets but, the volatility in the Indian market does make it difficult for FIIs to retain the investment and they withdraw money from the Indian market making the losses bigger for both domestic and foreign investors in India.

According to findings and results, foreign institutional investors (FIIs) have significant impact on the movement of Indian capital market. Therefore, the alternate hypothesis is accepted. FII'S have positive impact on BSE Sensex. However there are other macroeconomic factors also influence the bourses in the stock market, but FII is definitely one of the factors. This signifies that market rise with increase in FII's and collapse when FII's are withdrawn from the market.

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