Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 8, 1596-1611
2025
Publisher: Learning Gate
DOI: 10.55214/2576-8484.v9i8.9675

Understanding the investment behavior of FPIs and DIIs in Indian stock market in changing macroeconomic scenario: A post financial crisis (2008) analysis

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Abstract: Macroeconomic shocks and opportunities are considered to be a turning point of business decisions. This study seeks to examine the changing behaviour of institutional investors in Indian stock market in the changing macroeconomic scenario after global financial crisis (2008) for the period from 2008 to 2024. The study also provides a comparative analysis of domestic and foreign institutional investor's investment behavior and examines the impact of macroeconomic shocks and opportunities on it. The macroeconomic shocks are proxy of the time period of global financial crisis and covid-19. The opportunities are measured by technological innovation, digital payment culture and stock market return. The institutional investors are classified broadly into two types, well known as Foreign Institutional Investors (FPIs) and Domestic Institutional Investors (DIIs). The trend and impact analysis are done by graphs and regression model. The impact of macroeconomic shocks and opportunities is measured by implying dummy variable Regression models and GARCH models. The finding suggests that the growth in purchase and sale of securities by DIIs is more than the FPIs after technological innovations (2016 onwards). The empirical analysis suggests that purchase bahaviour of both type of investors is highly attracted by market return. The sale behaviour is sensitive towards both macroeconomic shocks and return in the market. When the purchase of FPIs is higher, then sale of DIIs is higher and the positive of impact of purchase of FPIs is nullifying the negative impact of the DIIs. The GARCH model result suggests that the market return has provided stability to the institutional investment while shocks have generated volatility in the institutional investment of both foreign and domestic in the Indian stock market.

Keywords: *DIIs, Domestic investment, FPIs, GARCH, Institutional investment, Stock market.*

1. Introduction

The global economy has seen higher volatile period for its macroeconomic variables, including financial markets since global financial crisis (2008), which becomes more severe during covid -19. No doubt, institutional investors are an integral part of stock market and affecting its functioning and performance. The researchers/practiceners believe that the investment behaviour of the investors must have altered the market volatility [1-3]. In the recent past, Indian stock market continued to be an attractive investment destination for global as well as domestic institutional investors [1-3]. So, it is of great importance to understand the investment behaviour of different types of investors in the stock market.

India is one of the emerging economies which have got increasing integration with the world markets since new economic policy (1991) of liberalization and globalization. As a result, it has been able to attract higher number of institutional investors from abroad in the form of foreign institutional investors (FIIs) with high volume of investment [4-7]. With the added stability on the political front,

History: Received: 19 June 2025; Revised: 4 August 2025; Accepted: 7 August 2025; Published: 27 August 2025
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international business houses are exploring greater opportunities. Encouraging Foreign Inflows to the secondary market has always received special focus due to the special nature. The opening up of Foreign Direct Investment (FDI) accompanied by introduction of the new Foreign Portfolio Investment (FPI) Regulations makes India a more accessible destination (SEBI annual report 2022-23).

Since long back, the Indian stock market had been out of touch of large part the domestic population due to many reasons i.e. lack of financial education, fear of fraudulent, myth, etc. followed by less domestic investment. This is why the authorities are trying their best to attract the domestic investors by enhancing financial literacy programmes, regulatory reforms and guidelines for the protection of investors' interest (different SEBI annual report from 2001 to 23). On the other hand, the authorities are also trying to give a global recognition to the stock market by liberalization and technological innovations in the all aspects (regulatory, institutional, instrumental, etc.) of the market to improve its functioning. Meanwhile, there happens revolution in the information and communication technology (ICT) with two black swan events (global financial crisis and covid-19) as macroeconomic shocks which gave new dimensions to the whole economy of the globe.

As outcomes, the Indian stock market has been able to attract the investors both from the home (as DIIs) as well as from the rest of the world mostly in form of FPIs. The trend of investment is changing since last two decades with increasing interest. The trend of purchase/sale behavior of institutional investors (figure-1) shows that there is growth in volume of purchase/sale of equity for all the institutional investors. The investment by FPIs, which was in the range of below 5000 crores in 2008-09, reached in the range of 35000-40000 crores till the year of 2023-24 with increased volatile nature. Domestic investors (both institutional[1] and individuals) have started to show increasing interest in the securities (equities) market. As a result, the share of retail, high net-worth individuals (HNIs) and DIIs is increasing continuously. It reached an all-time high of 25.50% as of June 30th, 2023. In the Q1 (April-June) of 2023, Domestic institutional investors (DIIs) invested a record sum of US$ 405.24 million in Indian equities (SEBI annual report, 2022-23).

Thus the domestic institutional investors play a significant role in the stock market performance, particularly when institutional investors from abroad are the nation's net sellers (SEBI annual report 2023-24). DIIs are becoming more mature and they are making the Indian securities market a more stable avenue for investments [8, 9]. The historical data of the Institutional investors' investment (provided by SEBI- sebi.govt.ac.in) suggests a huge growth in the DIIs investment, followed by the FPIs in Indian stock market, particularly in the past two decades.

All these changes got revisited after a black swan event, Covid-19 which has given birth to the new dimensions of thinking for future sustainability. In the above scenario, it would be also very fruitful for the market development to investigate the major determinants of institutional investment as well as their impact of the performance of stock market in India. The trend of the Indian stock market is really encouraging for the researcher to analyse the factors causing increasing interest of institutional investor's investment behavior in stock market in India, particularly, participation of domestic investors, as well as comparative analysis of foreign and domestic investors' investment behaviours.

Hence, Rest of the paper is structured in the following manner. The Section-II captures the literatures review, It has been briefly explored the review of some important related literatures for the theoretical conceptualization and identification of research gap. Section-III is concerned with the Objectives of the study. Section-IV explores the importance of the study. Section-V captures the research methodology of empirical analysis, followed by result interpretation in Section-VI. Section-VII discusses the findings and the agenda for future research. References are accommodated in section VIII.

[1]Institutional investors are such organizations that pool together funds on behalf of others and invest in a variety of different financial instruments and asset classes. They include investment funds like mutual funds and ETFs, insurance funds, and pension plans as well as investment banks and hedge funds. Institutional investors are generally considered to be more proficient at investing due to the assumed professional nature of operations and greater access to companies because of their size of investment.

Edelweiss Applied Science and Technology
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2. Review of Literature

There are substantial number of studies which examined the bi-directional relationship between stock market performance and institutional investors' investment behaviour in India as well as in the rest of the world [4-6, 10, 11]. However, studies vary among themselves in terms of the time period, the number and kinds of variables included and statistical techniques. Some studies examined the bi-directional relationship between stock market performance and investors decisions. The studies concluded that investors spend good amount of time in analysing the past performance of the stock in search of expected returns Grinblatt and Moskowitz [12] and Baghdadabad, et al. [13].

Salar and Mohd [8] examined the impact of Domestic Institutional Investors on Volatility of Indian Stock market (NIFTY). Various Econometric Tools have been used to examine the impact of Domestic Institutional Investor flows on Nifty return for the time period for the study is from 1st Jan 2009 to 31st March 2016. The study suggested that DIIs are an important factor in increasing the volatility of Indian Stock Market. Singh, et al. [14] examined the trading behaviour followed by foreign institutional investors, domestic institutional investors and mutual funds during 2010–2020 in the Indian stock market. Their finding suggested that the institutional investors do not pay pursued to the market returns in the calm period, while the interdependency among the institutional investors increases in the volatile period. Ansari [15] attempts to investigate the investing behaviour of DIIs and FIIs and their impact on the Indian security market, as well as shed light on the direction of causality between FIIs, DIIs, and BSE Sensex returns. Using the Vector Autoregression (VAR) model they found that at present, FIIs were not the sole drivers anymore. Domestic investors can also make the Indian stock market resilient amidst global uncertainties.

There are research studies which provided a comparative analysis between FPIs and DIIs [16, 17]. Some of them found inverse investment behavior between foreign and domestic institutional investors, such as Shah [16]. He analyzed the behaviour of foreign versus domestic institutional investors in India implying a quasi-experimental strategy for measuring the ability of foreign or domestic investors to do security selection. Their finding suggested that in some respects, foreign investors take on more risk, and should therefore obtain higher expected returns. In other respects, this operates in reverse; foreign investors take on reduced risk. Garg [17] examined the relationship between Institutional Investors (FIIs and DIIs) and Indian Stock Market. He found that both Foreign Institutional Investors and Domestic Institutional Investors are the major contributors in the Indian Stock Market.

It has also been observed that FIIs have a greater influence on Indian stock returns than DIIs. FIIs' buying and selling activities influence DIIs' behaviour. It has also been observed that FIIs have a greater influence on Indian stock returns than DIIs [8, 18-20]. The trading strategies of FIIs and DIIs are significantly different. The FIIs trade are using a positive feedback strategy, whereas the DIIs trade using a negative feedback strategy. During the crisis, this negative feedback strategy was more prominent. There is also a negative relationship between FPI and DII flows [21].

Searching the reasons for investors' attractions, Kadanda and Raj [21] found that there was a significance relationship between past returns and expected returns in stock market. Fama [22] suggested that Good performance leads in achieving expected returns and bad performance may bring down the expected returns. Dasgupta and Chattopadhyay [23] have developed an investor sentiment index (ISI) in relation to market drivers to date for the Indian retail investors and then examining which of the stock market drivers impacts such sentiment. Döring, et al. [24] studied the country-level determinants of institutional investors' investment horizons using a large dataset of firms from 35 countries. They found that an equity investor-friendly institutional environment is more important for long-term investors, while short-term investors seem to be less concerned about the quality of the financial and legal environment. Beyond the financial and legal structure, the cultural environment and economic policy uncertainty in a country are other important determinants of investor horizons.

Stanley, et al. [25] examined the determinants of institutional investment demand for common stock. They aimed to determine whether institutional investment decisions are influenced by the CAPM

Edelweiss Applied Science and Technology
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model attributes or by individual stock attributes. They found that institutional investors appear to aggressively seek high beta stocks and to avoid stocks with high unsystematic risk. Arora [26] investigates the trading behaviour of FIIs and DIIs in the Indian stock market. The results show that the trading pattern followed by FIIs and DIIs is opposite of each other. While FIIs act as positive feedback traders, DIIs act as contrarian investors and negative feedback traders. High lagged stock returns result in increased FII investment. The DIIs, on the other hand, appear to book profits when the market moves up and buy when it moves down. Aggarwal, et al. [27] examined whether increased net equity investments from domestic institutional investors have reduced the influence of foreign equity flows on the Indian stock market volatility. The results indicate that the domestic equity inflows surpass foreign flows by a significant margin, as seen during 2015–2018, when market in not significantly influenced by foreign equity investments.

The present analysis includes different methods from the above studies, as it examines the impact of institutional investment behavior on stock market during two important shocks and change in behavior from global crisis to covid-19. On the other hand it examines the impact of the shocks (global financial crisis and covid-19) and market return which has not been covered by the studies. It can be ensured that the present study would be new in its nature and provide new incentives to the researchers.

3. Research Objectives

The main objectives of this study are.

1. To compare the trend in the growth of FDIs and DIIs investment in India and to analyse the impact of their investment behaviour on the Indian stock market return.
2. To examine the impact of macroeconomic shocks and market return on the institutional investment behaviour (purchase of securities) in India.
3. To examine the impact of macroeconomic shocks and market return on the institutional investment behaviour (sale of securities) in India.
4. To examine the impact of macroeconomic shocks and market return on the volatility of net investment of institutional investors in securities in India.

4. Significance of the Study

This study would provide a strong policy base to the Indian government as well as to the other emerging economies facing the problem of uncertainty of FPIs for providing a strong base in the form of DIIs investment which will reduce the uncertainty in the market due sudden flue away of FPIs. The findings of this study will be useful to Indian stock market, SEBI, Policy makers, individual retail investors and different government agencies. With the help of this research, it can be identified the determinants of institutional investment in the stock market in India. The research will help the common people to connect with stock market. It will also helpful for the academic fields and business school students. Part of the core activity of the SEBI is investor education and awareness. SEBI has a division to facilitate financial literacy. Different financial awareness programs have been actively conducted over the years in diverse location. With this research, SEBI can formulate targeted financial literacy programmes, especially on stock market for developing more interest of Domestic investors.

5. Empirical Analysis

5.1. Research Methodology

To meet with the objectives, the study consists of trend as well as empirical analysis. Trend analysis is based on graphical analysis while the empirical analysis is based on regression and GARCH analysis. The trend analysis is developed for the comparison of the investment behavior of foreign and domestic institutional investors. The empirical analysis has two parts. In the first part, the regression analysis examined the impact of institutional investment behavior on the return performance of Indian stock

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market (BSE). In the second part, It is examined the impact of macroeconomic shocks and market return on the investment behaviors of the institutional investors in Indian stock market.

The institutional investment behavior includes investment behaviour of Foreign Portfolio Investors (FPIs) and Domestic Institutional Investors (DIIs) in the stock market. The investment behavior includes Purchase and sales of securities as well as net investment in terms of equities. Shocks (bad news) and return (good news) are two main forces which affect the investment behavior. Two recent major macroeconomic shocks have been considered in this study namely, global financial crisis (2008) and covid-19 (a pandemic event) which affected the investment decisions of investors. Covid-19 (a pandemic event) provides opportunity of digital payment system (use of technological innovations - Information and Communication Technology) on its parallel creating good news.

According to the macroeconomic shocks, the first part of regression analysis (about the test of impact of Institutional investors on the performance of stock market) has been divided into two segments. A first segment is developed for the time period after global financial crisis (2008), while the second segment is related with the testing the impact of macroeconomic shocks and return on the Institutional investment behavior. As far return (good news) is concerned, it is Stock market performance. Return in Bombay Stock Market (BSE) is considered calculated from Sensex- a benchmark index of BSE. Market performance inspires the ability of a stock to decrease or increase the wealth of investors. Performance of a stock market is indicated by the movement of share price indices. It is one of most important influencing information considered by investors while making investment decisions [12, 28].

Technological innovations particularly, expansion of Information and Communication Technology (ICT), has changed the nature of whole functioning of the economy. Technology-powered apps with customer-friendly digital interfaces have attracted a lot of young investors to come into the fold of Indian capital market. Now, the scene of youngsters trading through their mobile handsets has become common. The recent black swan event like covid-19 has fueled the use of ICT for securities transactions. Covid-19 (black swan event) unexpected historical events have changed the structure of the investment culture in the stock market by attracting the interest of the retail investors in the stock markets. It created increasing interest of the people towards stock market investment as it was easy for them due to payment crisis.

5.2. Data Collection and Sources

The whole analysis is based on the secondary data which is collected on the monthly basis for the time period from April 2007 to December 2024. The data is collected from different relevant sources, such as websites of SEBI, Yahoo Finance, Money control and Reserve Bank of India (RBI). The dummy variables series have been generated by giving the value '0' and '1', 0 for the pre-event period and 1 for the post event period.

5.3. Brief Description of Variables Used in the Analysis

FIIP: Purchase of securities (equities) by FPIs in the Indian stock market (Rs. Crores).

DIIP: Purchase of securities (equities) by DIIs in the Indian stock market (Rs. Crores).

FIIS: Sale of securities (equities) by FPIs in the Indian stock market (Rs. Crores).

DIIS: Sale of securities (equities) by DIIs in the Indian stock market (Rs. Crores).

DIIN: Net investment in the securities (equities) by DIIs in the Indian stock market (Rs. Crores).

FIIN: Net investment in the securities (equities) by FPIs in the Indian stock market (Rs. Crores).

BSER: Return in Bombay Stock Exchange (BSE) calculated from the growth rate of Sensex, a benchmark share price index. It is calculated by the formula $(C_t - C_{t-1})/ C_{t-1}$; where C_t is Closing price of the index.

DUMGC = A dummy variable for global financial crisis (2008). It has been given the value of '0' for pre- event period (before Oct 2008) and '1' for otherwise.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 8: 1596-1611, 2025
DOI: 10.55214/2576-8484.v9i8.9675

DUMIT= A dummy variable for the expansion of ICT. It is considered from November 2016 when JIO mobile and internet facility was launched and became familiar. This was also the time of demonetization in India. It has been given the value of '0' for pre-event period and '1' for otherwise.

DUMCOV = A dummy variable for the pandemic event Covid-19. It has been given the value of '0' for pre-event period (before March 2020) and '1' for otherwise.

6. Data Analysis and Result Interpretation

6.1. Trend Analysis

Trend analysis is done with the help of graphs and accommodated in the following figures.

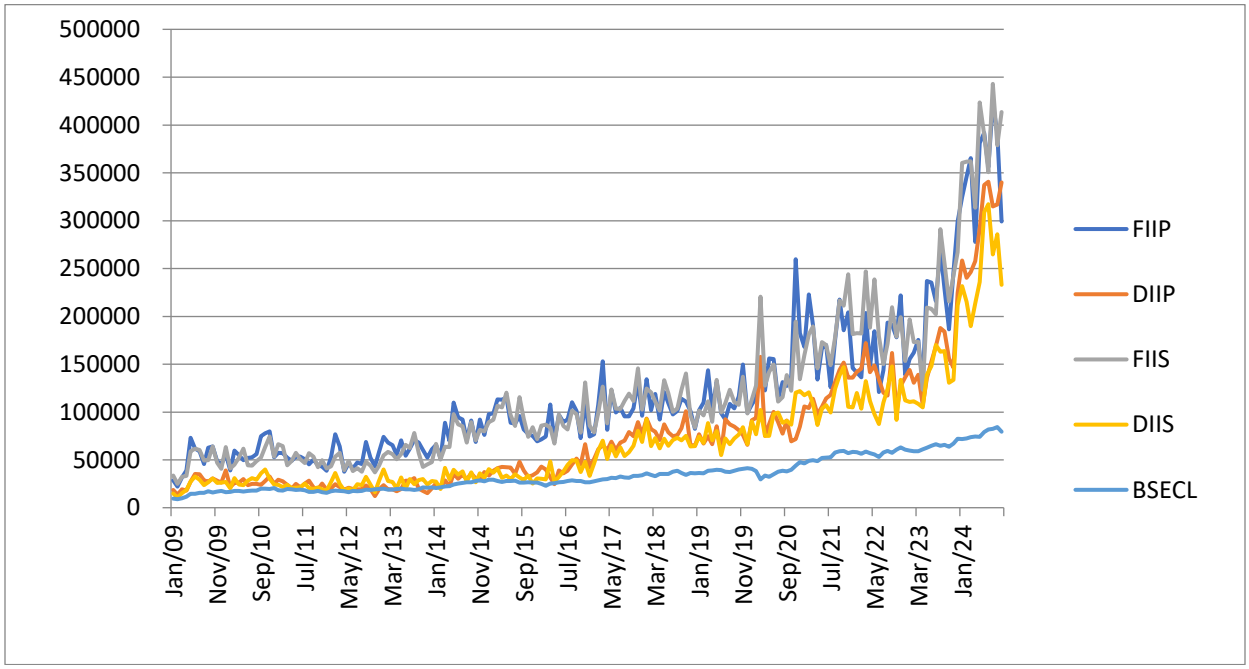

Figure 1.
Trend of Purchase and sale behavior of institutional investors in Indian stock market and sensex (BSE).
Source: Author's Calculation (www.moneycontrol.com)

The trend of purchase/sale behavior of institutional investors (figure-1) shows that there is growth in volume of purchase/sale of equity for all the institutional investors with increased volatile nature, but there is difference in the speed of growth between FPIs and DIIs. One important trend is that the growth is both purchase and sale of securities of DIIs is more than the FPIs after technological innovations in the form of digitalization (2016 onwards). Further, domestic institutional investment has got tremendous growth after Covid-19, filling the gap of FPIs. The figure reflects that volatility in FPIs investment is higher through the period. Another important trend is that after covid-19 FPIs sale of equities is mostly getting higher growth in comparison to its purchase, while the trend is inverse for the DIIs as its growth in purchase of equity is higher than sale. Thus, the overall domestic investment scenario within the country looks very optimistic.

When we look into the trend of net investment behavour (from figure-2) it is found that there is inverse trend between the investment behavour of FPIs and DIIs. In most of the cases, when net investment of FIIs is decreasing then the net investment by DIIs is increasing, vice-versa. It reflects that the domestic investors are controlling the shocks of foreign capital outflows in the stock market providing optimistic approach. Domestic investors are not following the herd behavior as they are not

Edelweiss Applied Science and Technology
ISSN: 2576-8484
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following the FPIs activities. This trend is surly beneficial for the domestic stock market as it shows trust of the domestic investors in the market.

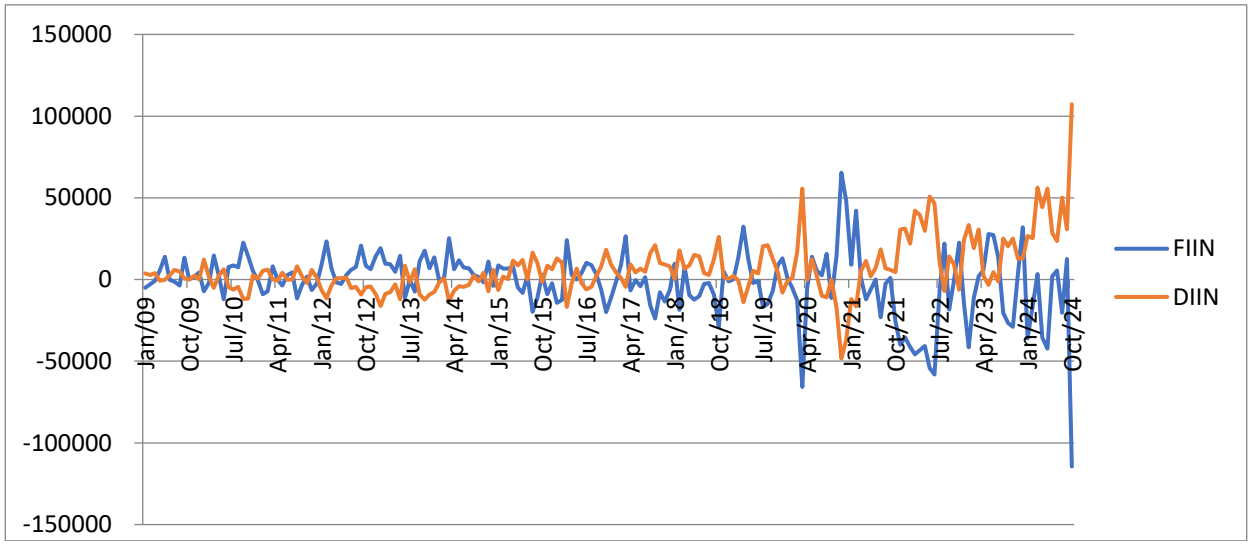

Figure 2.
Trend of net investment of institutional investors (both, Foreign and Domestic)
Source: Author's Calculation (www.moneycontrol.com)

FIIN: purchase of securities (equities) by FPIs in the Indian stock market.
DIIN: purchase of securities (equities) by DIIs in the Indian stock market.

Another most important trend is clear from the trend analysis that the volume of net investment by Domestic investors is growing, particularly after technological advancement (2016) and with more high speed after covid-19. It shows that the events like demonetizations 2016 and covid-19 has been opportunity for the domestic investors due to expansion of financial technology. The digitalization increases the trust of domestic investors' increases as their net investment is being positive and less volatile. This shows trust of DIIs investors in stock market and thus creating stability in the market.

6.2. Empirical Analysis

As the primary practices for the robustness check, test for unit root, autocorrelation, multicollinearity and hetroscedactisity is applied. The stationarity of the time series is tested by ADF test of unit root test. The test for **Autocorrelation** is done by AR method. Multicollinearity is assured by correlation matrix of independent variables. hetroscedactisity is confirmed by applying Breusch-Pagan test. Dummy variable regression analysis is done to ensure the determinants of the investment behaviour. GARCH model has been used to examine the impact of shocks and return on the volatility of net institutional investment in Indian stock market. The data series are growth rate series for all the variables, except dummy.

6.2.1. First Part of Analysis

Analysis- 1- Testing the impact of Institutional investment behavior on stock market return after global financial crisis (2008)

6.2.1.1. Model to be Tested

$BSERFC = \alpha + b_1 BSERFC + b_2 FIIPFC + b_3 DIIPFC + b_4 FIISFC + b_5 DIISFC + b_6\ FIINFC + b_6\ DIINFC + u_t$

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Where, FC= Financial Crisis

Table 1.
Result of Unit Root Test (ADF test) for the data series (after global financial crisis 2008).

Variables	Coefficient	t-value	p-value	Level of Stationarity
FIIPFC	-1.7514	-5.1335	0.00000	Yes
DIIPFC	-2.0795	-5.2830	0.00000	Yes
FIISFC	-1.8079	-5.3440	0.00000	Yes
DIISFC	-1.9904	-5.3560	0.00000	Yes
BSERFC	-0.9455	-4.4053	0.00000	Yes
FIINFC	-1.0256	-4.165	0.000	Yes
DIINFC	-2.8157	-5.3710	0.00000	Yes

The table -1 captures the result of unit root test which is done with the help of ADF test. The result suggests that all the data series are stationary for their level. The result has been confirmed by the concern p-values. The growth rate of the variables is considered for the analysis, thus all the series are growth series.

Table 2.
Correlation Matrix FOR after crisis analysis.

Variables	FIIPCOV	DIIPCOV	FIISCOV	DIISCOV	FIINCOV	DIINCOV
FIIPFC	1.00	0.5830	0.7607	0.794	-0.0219	0.0142
DIIPFC		1.00	0.780	0.520	-0.0908	0.181
FIISFC			1.00	0.440	-0.0625	0.237
DIISFC				1.00	-0.01142	0.1120
FIINFC					1.00	0.0152
DIINFC						1.00

Correlation Matrix (table-2) is generated to detect the problem of multicollinearity. The table shows that there is no high correlation among the selected variables.

Table 3.
Result of Regression -1. The Impact of investment behavior on stock market return after global financial crisis (2008).

Variables	Coefficient	t-value	p-value	Level of Significance
L_1BSERFC	0.21747	2.045	0.04082	Yes
FIIPFC	0.259	4.201	0.0003	Yes
DIIPFC	0.0194	0.691	0.489	No
FIISFC	-0.234	-5.264	0.000	Yes
DIISFC	-0.0483	-1.357	0.174	No
FIINFC	0.00032	1.381	0.16719	No
DIINFC	-0.00012	-2.197	0.02800	Yes
CONS	0.50266	0.744	0.45697	No
Jarque-Bera/Salmon-Kiefer test		119.881187	0.000	Yes
Breusch-Pagan test		65.948156	0.000	Yes

Table 4.
Result of AR model of error term to check autocorrelation

Variables	Coefficient	t-value	p-value	Level of Significance
cons	-0.15763	-1.555	0.12002	No
U_{t-1}	-0.04353	-0.126	0.899	No

The table-3 captures the result of regression model which is applied to test the impact of institutional investment behavior on the performance of stock market in India for the time period of after global financial crisis 2008. It is clear that there is significant impact of both, sale and purchase

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 8: 1596-1611, 2025
DOI: 10.55214/2576-8484.v9i8.9675

(FIIPFC & FIISFC) foreign investment behavior on the Indian stock market for the period after global financial crisis 2008, while DIIs net investment behavior has significant impact. It is also found that for this period the purchase behavior of FPIs (FIIPFC) has positive impact while sales behavior of FPIs (FIISFC) has negative impact on the stock market performance. The net investment of DIIs (DIINFC) shows negative impact on the market performance for this period and this may be because of inverse relationship between FPIs and DIIs net investment (as reflected in figure-2). When DIIN is positive, the FIIN is negative and the negative impact is greater than positive impact.

The result of AR model (table-4) shows that the model is free from the problem of autocorrelation. The Jarque-Bera/Salmon-Kiefer test is found significant rejecting the hypothesis of homoscedastic and shows that the error variance is hetroscedastic.

6.2.2. First Part of Analysis

Analysis- 2:

Testing the impact of Institutional investment behavior on stock market return after covid-19.

Model to be tested:

$$BSERCOV = \alpha + b_1 BSERCOV + b_2 FIIPCOV + b_3 DIIPCOV + b_4 FIISCOV + b_5 DIISCOV + b_6 FIINCOV + b_6 DIINCOV + u_t$$

Where, COV= after Covid-19

Table 5.
Result of unit root test (ADF test) for the data series (after covid-19).

Variables	Coefficient	t-value	p-value	Level of Stationarity
BSERCOV	-0.9854	-3.9164	0.000	Yes
FIIPCOV	-1.7089	-4.8791	0.0000	Yes
DIIPCOV	-1.6783	-5.6955	0.0000	Yes
FIISCOV	-2.0458	-4.6529	0.0000	Yes
DIISCOV	-2.2882	-5.7228	0.0000	Yes
FIINCOV	-1.1178	-3.6547	0.0000	Yes
DIINCOV	-1.0908	-3.8450	0.0000	Yes

The Table 5 shows the result of unit root test done with the help of ADF test. The result suggests that all the data series are stationary for their level. The result has been confirmed by the concern p-values. The data series are growth rate of the all the variables considered for the analysis, thus all the series are growth series.

Table 6.
Correlation Matrix for the data series (after covid-19).

Variables	BSERCOV	FIIPCOV	DIIPCOV	FIISCOV	DIISCOV	FIINCOV	DIINCOV
BSERCOV	1.00	0.282	-0.153	-0.1006	0.435	-0.0468	0.0465
FIIPCOV		1.00	0.311	0.836	0.526	-0.147	-0.0837
DIIPCOV			1.00	0.532	0.677	-0.0490	0.102
FIISCOV				1.00	0.4069	-0.0920	0.0331
DIISCOV					1.00	-0.0842	0.0500
FIINCOV						1.00	0.0389
DIINCOV							1.00

Correlation Matrix (table-6) is generated to detect the problem of multicollinearity. The table shows that there is no high correlation among the selected data series (after covid-19).

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 8: 1596-1611, 2025
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Table 7.
Result of Regression -2: the Impact of Institutional investment behavior on stock market return for the period of after Covid-19.

Variables	Coefficient	t-value	p-value	level of Significance
lagBSERFC	0.07267	0.776	0.437	No
FIIPCOV	0.09859	2.675	0.007	Yes
DIIPCOV	-0.10084	-2.157	0.031	Yes
FIISCOV	-0.11663	-2.69	0.007	Yes
DIISCOV	0.158	4.19	0.000	Yes
FIINCOV	0.00002	0.538	0.590	No
DIINCOV	0.00022	1.451	0.146	No
CONS	1.475	3.578	0.00035	Yes
Jarque-Bera/Salmon-Kiefer test		1.264	0.531	No
Breusch-Pagan test		11.4592	0.119	No

Table 8.
Result of A R model of Error term for autocorrelation.

Variables	Coefficient	t-value	p-value	level of Significance
u_{t-1}	0.10127	0.744	0.45	No
cons	0.07076	0.07076	0.83	no

The Table 7 reflects the result of regression model which is applied to test the impact of institutional investment behavior on the performance of stock market in India for the time period of after covid-19. It shows that there is significant impact of purchase as well as sale investment behavior the both Institutional investors foreign (FIIP and FIIS) and domestic (DIIP and DIIS) on the Indian stock market, while net investment has no any significant impact. The finding suggests that nature of impact of the FPIs investment behavior is different from DIIs for this period. The purchase behavior of FPIs (FIIPCOV) has positive impact while it is negative for DIIs, on another hand; Sales behavior of FPIs (FIISCOV) has created negative impact, while this is positive for DIIs on the stock market performance. This is because the foreign and domestic investors strategy is inversely related as suggested by trend analysis (figure-2). When the purchase of FPIs is higher, then sale of DIIs is higher and the positive of impact of purchase of FPIs is nullifying the negative impact of the DIIs. On another hand, the negative impact of Sale bahaviour of FPIs is nullifying the positive impact of the purchase behavior of DIIs in the Indian stock market.

The result of AR model (table-8) shows that the model is free from the problem of autocorrelation. The Breusch-Pagan test is found significant rejecting the hypothesis of homoscedastic and shows that the error variance is hetroscedastic. Hence, this is why we have used the results based on White's heteroskedasticity consistent variance matrix.

6.2.3. Second Part of Analysis

Analysis of the determinants of Institutional investors' investment behavior.

Models to be tested:

Model-1: $dFIIP = \alpha + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + u_t$

Model-2: $dDIIP = \alpha + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + u_t$

Model-3: $dFIIS = \alpha + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + u_t$

Model-4: $dDIIS = \alpha + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + u_t$

Model-5: $FIIN = \alpha + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + u_t$

Model-6: $DIIN = \alpha + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + u_t$

$GARCH_{(1,1)}$ - Model

Mean Equation: 1

$FIIN = \alpha + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + u_t$

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Variance Euation: 1

$\sigma^2 = d + b(1,1)u^2_{(t-1)} + b(2,1)\sigma^2_{(t-1)} + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV$

Mean Equation: 2

$DIIN = \alpha + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + u_t$

Variance Euation: 2

$\sigma^2 = d + b(1,1)u^2_{(t-1)} + b(2,1)\sigma^2_{(t-1)} + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV$

Table 9.
Result of Unit Root Test (ADF test).

Variables	Coefficient	t-value	p-value	level of Stationarity
FIIP	-0.2050	-2.1882	-2.1882	No
d_1FIIP	-5.0672	-5.0672	0.00000	Yes
DIIP	-0.0873	-1.6944	0.75000	No
d_1DIIP	-2.9573	-5.1470	0.00000	Yes
BSER	-1.1750	-4.9864	0.00000	Yes
FIIS	-0.0079	-2.1263	-2.1263	No
d_1FIIS	-3.9290	-5.9857	0.00000	Yes
DIIS	-0.0079	-0.1347	0.99000	No
d_1DIIS	-2.9021	-3.593	0.03000	Yes
FIIN	-0.3713	-3.8563	0.01000	Yes
DIIN	-0.3527	-4.0282	0.01000	Yes

Note: d_1 = First difference of the series
Null hypothesis (H_0): the series has a unit root process,
Alternative hypothesis (H_1): the series follow stationary process
The two-sided p-values are based on the normal approximation.

The table -9 captures the result of unit root test which is done with the help of ADF test. The result suggests that all the series of purchase and sale behaviour (FIIP, DIIP, FIIS, DIIS,) are non-stationary for their level, but become stationary for their first differences. The series of net investment (FIIN, DIIN) and BSE return series are stationary for their level. The result has been confirmed by the concern p-values.

6.3. Result of Dummy Variable Regression Analysis

Model-1: $d_1DIIP = \alpha + b_1L_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + b_5L_1d_1DIIP + u_t$

Table 10.
Impact of Shocks and return expectation on the purchase behaviour of DIIs.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DUM_COV	788.4241	2681.260	0.294050	0.7690
DUM_DEM	737.0336	2317.286	0.318059	0.7508
DUM_GC	664.2193	3395.409	0.195623	0.8451
C	333.0950	3164.606	0.105256	0.9163
L_1BSER	49928.57	14340.33	3.481688	0.0006
L_1d_1DIIP	-0.450082	0.062526	-7.198272	0.0000
R-squared	0.250111	Mean dependent var		627.8353
F-statistic	12.80755	Durbin-Watson stat		2.006723
Prob(F-statistic)	0.000000			

Table 10 captures the result of impact of shocks and return on purchase behaviour of domestic investors. The result suggests that purchase behaviour of DIIs significantly affected by return expectation in the Indian stock market. While DIIs purchase behavior is not affected by macroeconomic shocks as financial crisis and covid -19.

Model-2: $d_1FIIP = \alpha + b_1L_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + d_1L_1FIIP + u_t$

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 8: 1596-1611, 2025
DOI: 10.55214/2576-8484.v9i8.9675

Table 11.
Impact of Shocks and return expectations on purchase behaviour of FPIs.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DUM_COV	2889.094	5450.876	0.530024	0.5967
DUM_DEM	-338.2145	4709.484	-0.071816	0.9428
DUM_GC	-13.63752	6902.387	-0.001976	0.9984
C	117.0027	6432.809	0.018188	0.9855
L_1BSER	75829.90	29153.10	2.601092	0.0100
d_1L_1 FIIP	-0.464865	0.063718	-7.295651	0.0000
R-squared	0.238350	Mean dependent var		1010.725
F-statistic	12.01688	Durbin-Watson stat		2.347577
Prob(F-statistic)	0.000000			

Table 11 shows that purchase behaviour of FPIs also significantly affected by return expectations in the stock market and it past records of investments. The other variables are insignificant determinants

The overall analysis of purchase behavior of institutional investors suggests that all the investors are looking towards the return in the stock market as it is the most significant factor for their attractions. If there is positive growth in the stock market, they are not supposed to care about the shocks in any form like covid-19 which was a big shock for all over the words. However, they also are careful about their past level of investment as lag of dependent variable has been significant factor.

Model-4: $d_1DIIS = C + b_1L_1BSER + b_2DUMGC + b_3DUMIT + b_4DUMCOV + b_5L_1d_1DIIS + u_t$

Table 12.
Impact of Shocks and return on the sale behaviour of DIIs

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DUM_GC	1694.954	3328.659	0.509200	0.6112
DUM_IT	10358.96	3528.988	2.935392	0.0037
DUM_COV	13247.41	4187.564	3.163513	0.0018
C	5133.810	3420.754	1.500783	0.1351
L_1BSER	-43676.17	13953.99	-3.13001	0.0020
L_1d_1DIIS	0.432290	0.076295	5.666055	0.0000
R-squared	0.914105	Mean dependent var		56065.93
F-statistic	340.5469	Durbin-Watson stat		1.885274
Prob(F-statistic)	0.000000			

Model-5: $d_1FIIS = C + b_1L_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + b_5L_1d_1FIIS + u_t$

Table 13.
Impact of Shocks and return expectations on sale behaviour of FPIs.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DUM_GC	-3206.660	6141.384	-0.522140	0.6022
DUM_IT	15708.95	5326.181	2.949384	0.0036
DUM_COV	27945.66	6825.581	4.094254	0.0001
C	25644.81	7585.072	3.380958	0.0009
L_1BSER	-65960.05	25826.28	-2.553990	0.0114
L_1d_1FIIS	0.353647	0.068957	5.128539	0.0000
R-squared	0.849970	Mean dependent var		101394.9
F-statistic	181.2910	Durbin-Watson stat		2.003888
Prob(F-statistic)	0.000000			

Table 12 shows the impact of shocks and return on the Sale behaviour of domestic institutional investors and the result suggests that sale behaviour of DIIs is significantly affected by return expectations in the stock market as well as macroeconomic shocks, as covid-19. The covid-19 has positive impact on the equity sale by DIIs, while market return has controlled the sale behavior of DIIs. The global financial crisis could not have significant affect the sale of DIIs. The result of dummy of

Edelweiss Applied Science and Technology
ISSN: 2576-8484
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DOI: 10.55214/2576-8484.v9i8.9675

technology indicates that technology has facilitated the selling practices of DIIs. Table-13 shows the impact of shocks and return on Sale behaviour of foreign institutional investors in Indian stock market. The result suggests that sale behaviour of FPIs is same as for the sale behavior of DIIs (shown in table - 12).

The overall analysis of sale behavior of institutional investors suggests that the investors are much concerned about the risk (shocks) in the stock market as well as at macroeconomic level. They are selling the securities with the expectation of negative return as well as feared about the shocks which are measured in terms of event period of demonetization and covid -19. However, they also are careful about their past level of investment as lag of dependent variable has been significant factor.

6.4. Result of GARCH Model

The GARCH model is developed to test the status of volatility clustering in the institutional nvestors investment. GARCH model-1 is for volatility clustering of DIIs net investment while GARCH model-2 is for FPIs net investment.

6.4.1. GARCH Model-1

Mean Equation: 1

$$DIIN = \alpha + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + u_t$$

Variance Euation: 1

$$\sigma^2 = d + b(1,1)u^2_{(t-1)} + b(2,1)\sigma^2_{(t-1)} + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV$$

Table 14.
Impact of Shocks and return on net investment of DIIs.

Variable	Coefficient	Std. Error	z-Statistic	Prob.
GARCH	-2.11E-05	2.12E-05	-0.992733	0.3208
DUM_COV	6684.680	2337.954	2.859200	0.0042
DUM_IT	5792.879	1228.667	4.714765	0.0000
DUM_GC	-2946.876	1773.942	-1.661202	0.0967
C	3707.525	1881.112	1.970922	0.0487
BSER(-1)	-60876.66	7189.722	-8.467178	0.0000
DIIN(-1)	-0.602619	0.063523	-9.486612	0.0000
	Variance Equation			
C	4031409.	3232598.	1.247111	0.2124
RESID(-1)^2	0.296505	0.102624	2.889240	0.0039
GARCH(-1)	0.673005	0.106712	6.306763	0.0000
R-squared	0.435898	Mean dependent var		60.42295
Durbin-Watson stat	1.662359			

6.4.2. GARCH Model-2

Mean Equation: 2

$$DIIN = \alpha + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV + u_t$$

Variance Euation: 2

$$\sigma^2 = d + b(1,1)u^2_{(t-1)} + b(2,1)\sigma^2_{(t-1)} + b_1BSER + b_2DUMGC + b_3DUMDEM + b_4DUMCOV$$

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 8: 1596-1611, 2025
DOI: 10.55214/2576-8484.v9i8.9675

Table 15.
Impact of Shocks and return expectation on net investment of FPIs

Variable	Coefficient	Std. Error	z-Statistic	Prob.
GARCH	-1.81E-05	2.28E-05	-0.790823	0.4290
DUM_COV	213.1519	1730.384	0.123182	0.9020
DUM_IT	6145.450	790.9851	7.769363	0.0000
DUM_GC	-103.7905	1387.353	-0.074812	0.9404
BSER(-1)	-10761.73	3352.246	-3.210305	0.0013
C	-43.68998	1397.041	-0.031273	0.9751
FIIN(-1)	0.525264	0.066718	7.872847	0.0000
	Variance Equation			
C	121523.5	166555.0	0.729630	0.4656
RESID(-1)^2	0.276630	0.103555	2.671341	0.0076
GARCH(-1)	0.770482	0.077005	10.00557	0.0000
R-squared	0.492251	Mean dependent var		3471.245
Durbin-Watson stat	1.969421			

Table 14 and 15 shows a significant GARCH effect (as the variables of variance equation in both the table is significant according to p-values) which suggest existence of volatility clustering in the net investment of both type of the investors. It also suggests that the investment behavior of the FPIs and DIIs is sensitive towards old and good news about the stock market and its determinants. The result suggests that variation in the net ivestment behaviour of both DIIs (DIIN) and FPIs (FIIN) is significantly reduced by expectation of positive return in the stock market (BSER) based on its past records. The impact of technological innovation (DUMIT) is also significant for the both investors group. It has increased the volatility of investment suggesting increasing investment activities by the both investors groups. It is clear from the result that covid-19 (DUMCOV) has significant positive impact of the DIIs net investment, while it not significant for the FPIs.

7. Conclusion and Suggestions

This paper is an attempt to analyze the change in the behaviour of institutional investors in Indian stock market in the changing macroeconomic scenario in Indian economy since global financial crisis (2008). The study provides a comparative analysis of domestic and foreign institutional investor's investment behavior as well as the impact of macroeconomic shocks and opportunities on investment behaviour of institutional investors for the period is from 2008 to 2024. Macroeconomic shocks are recognized as global financial crisis and pandemic event (covid-19), while opportunities are in the form of technological innovation and market return. The empirical analysis includes trend analysis as well as Econometrical analysis, implying Regression model with Dummy variable and GARCH model.

The trend analysis suggests that there is increasing trend in both the purchase and sale behavior, of foreign as well as the domestic investors (FPIs and DIIs), but the rate of Growth of DIIs purchase is higher than FPIs purchase, particularly after covid-19. The domestic institutional investors are playing inversely to the foreign investors, as they are providing optimism in the market with positive net investment when the there is negative net investment by FPIs. When the purchase of FPIs is higher, then sale of DIIs is higher and the positive of impact of purchase of FPIs is nullifying the negative impact of the DIIs. On another hand, the negative impact of Sale bahaviour of FPIs is nullifying the positive impact of the purchase behavior of DIIs in the Indian stock market.

Further, the first part of empirical analysis suggests FPIs are dominating as the determinant of market return in BSE for the period of after global crisis, but for the period of after covid -19, DIIs are also dominating determinant of market return, followed by FPIs. In most of the cases, when net investment of FIIs is decreasing then the net investment by DIIs is increasing, vice-versa. It reflects that Domestic investors are not following the herd behavior as they are not following the FPIs activities. This trend is surly beneficial for the domestic stock market as it shows trust of the domestic investors in the market.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 8: 1596-1611, 2025
DOI: 10.55214/2576-8484.v9i8.9675

The second part of empirical analysis suggests the purchase behavior of both the investors (FPIs and DIIs) significantly determined by the market return performance as well as affected by their past performances (table 10-11). The sale behavior of both the investors (FPIs and DIIs) is significantly determined by of technological innovation and covid-19, followed by Indian stock market performance (table 12-13). The result suggests the expectation of higher return in the stock market attracts to the investors for investment in the securities. Due to information communication technology development, the investors are more capable to reduce the risk of losses by selling the securities at the right time. It also clarify that the investors are more sensitive towards risk in the market.

The result suggests that there are still required some more efforts in Indian economy to encourage financial education and technological innovations to ensure long term interest of the institutional investors in the stock market. The Indian government should give more attention on the BSE performance as it is attracting the investment decision of the institutional investores. This policy would provide a strong base in the form of DIIs investment which will reduce the uncertainty in the market due sudden flue away of FPIs. The findings of this study will be useful for regulator (SEBI), Policy makers (government), individual investors and different government agencies. The research will be helpful for creating interest of the common people in the stock market. It will also helpful for the academic fields and business school students.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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References

[1] A. Kumar, K. N. Badhani, E. Bouri, and T. Saeed, "Herding behavior in the commodity markets of the Asia-Pacific region," *Finance Research Letters*, vol. 41, p. 101813, 2021. https://doi.org/10.1016/j.frl.2020.101813

[2] X. Sibande, R. Gupta, R. Demirer, and E. Bouri, "Investor sentiment and (anti) herding in the currency market: Evidence from Twitter feed data," *Journal of Behavioral Finance*, vol. 24, no. 1, pp. 56-72, 2023.

[3] H. Vardhan and P. Sinha, "Influence of foreign institutional investments (FIIs) on the Indian stock market: An insight by VAR models," *Journal of Emerging Market Finance*, vol. 15, no. 1, pp. 49-83, 2016. https://doi.org/10.1177/0972652715623677

[4] P. Mukharjee, B. Suchismiyta, and D. Coondoo, "Foreign institutional investment in indian equity market; an analysis of daily flows during," *ICRA Bulletin Money and Finance*, vol. 2, no. 9, pp. 21-51, 2002.

[5] Karimullah, "Crisis in the Indian stock market and FIIs investment behaviour," *Al-Barkaat Journal of Finance and Management*, vol. 2, no. 1, pp. 35-54, 2009.

[6] N. R. Bhanumurthy and P. S. Bose Sukanya, "Modeling India's external sector: Review and some empirics," Working Paper No.138, National Institute of Public Finance and Policy New Delhi, 2014. http://www.nipfp.org.in/media/medialibrary/2014/05/WP_2014_138.pdf

[7] P. Pal, "The impact of foreign institutional investment on stock market volatility in India," *Economic and Political Weekly*, vol. 41, no. 12, pp. 1171–1177, 2006.

[8] A. S. A. Salar and S. Mohd, "Impact of domestic institutional investments on Indian equity market," *IUJ Journal of Management*, vol. 7, no. 2, pp. 33-41, 2019.

[9] S. Bose, "Mutual fund investments, FII invest¬ments, and stock market returns in India," Money and Finance, 2012. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2204418

[10] X. V. Vo and K. J. Daly, "The determinants of international financial integration," *Global Finance Journal*, vol. 18, no. 2, pp. 228-250, 2007.

[11] S. Kumar, "Does the Indian stock market play to the tune of FII investments? An empirical investigation," *ICFAI Journal of Applied Finance*, vol. 7, no. 3, pp. 36-44, 2001.

[12] M. Grinblatt and T. J. Moskowitz, "Predicting stock price movements from past returns: The role of consistency and tax-loss selling," *Journal of Financial Economics*, vol. 71, no. 3, pp. 541–579, 2004.

[13] M. R. Baghdadabad, T., F. H. Tanha, and N. Halid, "A study on small investors' behavior in choosing stock case study: Kuala-Lumpur stock market," *African Journal of Business Management*, vol. 5, no. 27, pp. 11082-11092, 2011.
[14] A. K. Singh, R. K. Shrivastav, and S. Jain, "Trading behaviour exhibited by institutional investors during calm and volatile periods in the Indian scenario," *The Indian Economic Journal*, vol. 72, no. 1, pp. 181-198, 2024. https://doi.org/10.1177/00194662231211205
[15] M. N. Ansari, "The emergence of diis as a strong counterforce to fiis in changing Indian securities market-an empirical study," *International Journal of Financial Management*, vol. 13, no. 1, pp. 1-9, 2023.
[16] S. T. H. Shah, "Psychological distress among caregivers of patients with schizophrenia," *Journal of Ayub Medical College Abbottabad*, vol. 25, no. 3-4, pp. 27–30, 2013.
[17] A. C. K. K. Garg, "A study of trend analysis and relationship between foreign institutional investors (FIIs) & domestic institutional investors (DIIs)," 2015. https://ssrn.com/abstract=2623465
[18] P. K. Bansal, "Critical study of Indian stock market relationship with domestic (DIIs) and foreign institutional investors (FIIs)," *Materials Today: Proceedings*, vol. 37, pp. 2837-2843, 2021.
[19] P. Sathish and K. S. Srinivasan, "Dynamic relationship between institutional investors and Indian stock market: An empirical analysis," *IUP Journal of Applied Finance*, vol. 24, no. 3, pp. 5-15, 2018.
[20] R. Gahlot, "An analytical study on effect of FIIs & DIIs on Indian stock market," *Journal of Transnational Management*, vol. 24, no. 2, pp. 67-82, 2019. https://doi.org/10.1080/15475778.2019.1601485
[21] D. Kadanda and K. Raj, "Relationship between foreign portfolio investments (FPI), domestic institutional investors, and stock market returns in India," *International Journal of Financial Management*, vol. 7, no. 4, pp. 1-9, 2017.
[22] E. F. Fama, "Efficient capital markets: A review of theory and empirical work," *Journal of Finance*, vol. 25, no. 2, pp. 383–417, 1970. https://doi.org/10.1111/j.1540-6261.1970.tb00518.x
[23] R. Dasgupta and S. Chattopadhyay, "Stock market drivers of retail investors' sentiment–facets and new evidences from India," *Rajagiri Management Journal*, vol. 14, no. 2, pp. 133-154, 2020.
[24] S. Döring, W. Drobetz, S. El Ghoul, O. Guedhami, and H. Schröder, "Cross-country determinants of institutional investors' investment horizons," *Finance Research Letters*, vol. 39, p. 101641, 2021.
[25] G. Stanley, S. R. Eakins, and S. D. B. Stansell, "The determinants of institutional demand for common stock: Tests of the Capm vs. individual stock attributes," *International Review of Financial Analysis*, vol. 5, no. 1, pp. 237-257, 1996.
[26] R. K. Arora, "The relation between investment of domestic and foreign institutional investors and stock returns in India," *Global Business Review*, vol. 17, no. 3, pp. 654-664, 2016. https://doi.org/10.1177/0972150916630830
[27] N. Aggarwal *et al.*, "Challenges and opportunities of gravitational-wave searches at MHz to GHz frequencies," *Living Reviews in Relativity*, vol. 24, no. 1, p. 4, 2021.
[28] V. S. Mutswenje, "A survey of the factors influencing investment decisions: The case of individual investors at the NSE ", Doctoral Dissertation, University of Nairobi, 2009.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 8: 1596-1611, 2025
DOI: 10.55214/2576-8484.v9i8.9675