

15.

**Role of FII and DMFI in Indian Capital Market: A Causality Investigation**

Meenakshi Sharma<sup>1</sup>, Anil Kumar Mittal<sup>2</sup>

---

**ABSTRACT**

*A recent unprecedented rise in the Indian stock market is endorsed to the investment made by the institutional investors. Institutional investment whether it belongs to a domestic country or from the international market occupies a significant role in the capital market growth of the nation. So far different studies have been conducted about the relationship of the foreign institutional investors and the stock market returns which provide only one side of the picture, but the role of the domestic investment in the form of mutual fund in the Indian capital market is also a matter of concern that is still not much discussed. In the present study, the main focus is to analyze the investment pattern of both categories of investment in the stock market and also to explore their relationship with the Indian stock market return. In order to investigate all these issues, the study has used data set related to Net Foreign institutional investment (FII), Net domestic mutual fund investment (DMFI), buying and selling transactions, and nifty index from January 2015 to December 2019. In the present study, bar chart technique, ADF test and granger causality test have been applied to the data set. The findings of the study showed that foreign institutional investors have ensured its dominance in the stock market of India in terms of investment volume in comparison to domestic mutual fund investment but more fluctuation has been found in the FII trading. The trading activities conducted by these institutions do not cause the stock market index.*

**Keywords:** Foreign Institutional Investment, Domestic Mutual Fund Investment, Stock Market, Granger Causality.

**INTRODUCTION**

The performance of the economy is reflected in the status of the capital market of the country. If the capital market performance is earning a good name, it indicates that the country's economy is growing and vice versa. Ultimately, the growth of the economy captures the attention of the financial institutions not only from the domestic but also from the foreign countries.

---

<sup>1</sup> Research Scholar, University School of Management, Kurukshetra University, Kurukshetra  
Email id: [muskuk901806@gmail.com](mailto:muskuk901806@gmail.com)

<sup>2</sup> Professor, University School of Management, Kurukshetra University, Kurukshetra  
Email Id: [mittal\\_anil\\_kuk@yahoo.com](mailto:mittal_anil_kuk@yahoo.com)

If the capital market of the nation is showing a splendid performance, then FII and DMFI move their funds in the securities market of that nation. The speedy changes in the economy due to liberalization and globalization have made the Indian market the focus point for foreign investors (Vishwakarma, 2014). Institutional investors make investment in the financial market to reap the huge profits. There are two most common institutional entities such as foreign institutional investors and Domestic mutual fund investors. Since 1990 the Indian market has gained the status of prominent markets in the entire world and opened its doors for the global investors as well for some untapped private domestic players.

During the last few decades in total foreign fund flows the proportion of FII has been very high. The second form of the institutional flows is from the domestic mutual fund investors. Basically, a mutual fund is a trust that pools the savings of the large group of small investors who share common goals and further reinvest it into the financial market and in return issue units to their investors. In the last few years, the mutual fund has become the most preferred mode of investment for the long term investing among the investors. The growth in the mutual fund products in the market has created several new avenues of investment for the investors in the capital market. The need for mutual funds has increased in the economy due to the persistent rise in the domestic saving rate in the country. That is the reason the mutual fund industry has occupied the status of pacesetter due to their contribution to spreading equity culture in the economy.

In this way, it becomes essential to study the pattern of investment by both the categories of institutions in the country capital market (Bhayani, 2017). These institutional flows affect the Indian economy in both positive as well as negative ways. On the positive side, these capital flows had contributed by enhancing the market capitalization, level of competition, and also enhanced the scope of the financial intermediation in the country. But, on the other side of the picture the entry of these institutional fund flows in the capital has also posed several challenges for the nation in the form of a persistent rise in inflation, devaluation of the domestic currency in the global market, and unmanageable market due to frequent volatile financial system. Keeping all these matters into account the present study on the role of FII and DMFI in the Indian capital market has been undertaken. In this study first of all an attempt has been made to observe the recent investment pattern of the institutional investors separately. Then further by using the causality approach, the interaction of the Indian stock market index Nifty has been analyzed with the foreign institutional trading flows as well as domestic mutual fund trading flows.

## **REVIEW OF LITERATURE**

Sharma and Mittal (2019) conducted a causality study between the foreign portfolio investment and Indian stock market collecting the monthly dataset from April 2010 to March 2019. They have employed the Granger causality test on variables associated with the foreign portfolio investment and NSE index Nifty return. The test result

found the unidirectional causality for some variables of FPI such as FPIN, FPIP, and Ratio of FPIS. The outcome revealed no causality of FPIS and Ratio FPIN with the nifty return during the study period. Dey and Mishra (2004) conducted a study to analyze the cause-effect relation between the Indian stock market capitalization and foreign institutional investment. The result showed that market capitalization is related to the selling behavior of foreign institutional investors in a negative way. An increase in sales by FII resulted in a decline in market capitalization. The study also evidenced that the inflow of funds by FII increases the stock trading volume as well as stock prices.

Bhayani (2017) conducted a study titled ‘a study on recent trends in Indian mutual fund industry’ to identify the mutual fund investment pattern after reinvention. As per the findings of the study, the investors’ accounts increased from 3.95 crores in December 2014 to 5.28 crores approximately in December 2016. In an equity-oriented scheme, only 80 percent of the individual investors made the investment. Kadanda and Krishna (2017) made an analysis to investigate the relationship of FII, DII, and the stock market return in India by using the daily data set from January to December 2014 i.e. of one year. They concluded that both FII and DII trading behavior was found opposite and their relationship showed a negative correlation between them. Garg and Chawla (2015) undertook the study regarding the trend of foreign institutional investors and domestic institutional investors in the Indian securities market during April 2007 to March 2015. The study has found that FII and DII investment patterns showed a wider difference. As far as the overall impact is concerned these institutions have put a great influence on the stock market during the period of study.

Nautiyal and kavidayal (2013) analyzed the causality between the Indian stock market and foreign institutional investment by using the monthly data set from January 2000 to July 2012. For the study purpose, they applied correlation and granger pairwise causality and found that both the variables are positively correlated with each other and no causality is found between these two. Shah (2014) made an attempt to analyze the investment trend and relationship of the foreign institutional investors with the stock market in India. For this purpose, daily data from the year 2001 to 2013 has been analyzed with the help of correlation and Regression. The study revealed that investment of FII has increased during the study period and the stock market is positively correlated with the FII investment but has not shown any impact on the NSE market.

Bhatnagar (2011) applied a charting technique to analyze the investment trend of the foreign institutional investors in the stock market. The author used monthly as well as yearly data set and observed that the FII role was not much in influencing the stock market. It is the unexplained variables that have caused the return of the Indian stock market. Akula (2011) undertook a study on “overview of FII in India ”by using five-year data from 2006 to 2010. He has found that foreign institutional investment played a significant role in enhancing the liquidity of the Indian stock market and also

---

the major driving force behind the stock market volatility. Vashishtha (2011) undertook a study on 'FII and Indian stock market a causality investigation' for a period of nineteen years from 1992 to 2010. To study the causality relationship, the granger test of causality has been applied. The causality test result revealed that both the variables FII and stock market return share the bi-directional cause-effect relationship during the period of investigation.

Kumar (2006) found that the direction of the money invested by the foreign institutional investors played a significant role in determining the movement of the Indian stock market. Mohan (2005) in his study has found that foreign institutional investors have maintained their dominance in the Indian capital market due to a large number of funds at their disposal and these funds are further directed towards the Indian stock market. The shareholding pattern of FII has also proved its supremacy in deciding the direction of the market. Bikchandani and Sharma (2001) in their study reported that herding by institutional investors in the emerging market requires a lot of empirical investigation. In this study they found that in the emerging markets the momentum strategy can provide better results to the investors due to the uncertain environment and poor regulations.

## **OBJECTIVES**

1. To study the investment pattern of net investment of foreign institutional investment and domestic mutual fund investment in the Indian stock market.
2. To analyze the causality between the buying and selling activities of the institutional investors and stock market index Nifty in India.

## **NEED AND SCOPE OF THE STUDY**

It has been observed from the previous researches that the investment done by foreign institutional investment and domestic mutual investment in the Indian capital market has played a significant role in deciding the future direction of the market. They invest in a bulk amount in the capital market of India and their trading activities in the form of buying and selling make major changes in the stock index movement and sometimes create volatility shocks as well. Hence, in the present study an effort has been made to re-examine this relationship among the variables in today's scenario by taking the data set from January 2015 to December 2019. As far as the scope of the study is concerned, FIIP, FIIS, FIIN, DMFNI, DMFP, DMFS, and NSE Nifty closing price have been included as the major variables. FII represents that portion of investment made in the Indian stock market which comes from the international market in the form of foreign institutional investment. To represent the domestic investment, the investment in a mutual fund has been considered. To represent the entire Indian stock market NSE index Nifty has been considered.

## **RESEARCH METHOD**

In the present study for the analysis purpose, monthly data set from January 2015 to December 2019 has been collected from the SEBI website in relation to net investment and buying and selling activities of FII and Mutual Fund investment. The data related to the Nifty index has been collected from the NSE website. The study has used descriptive and analytical design and further applied Karl Pearson correlation analysis and Granger causality test to analyze the causality relationship among them. To check the prime property pertaining to stationarity, ADF unit root test has been used. The application of the granger causality test requires the selection of the optimum lag. So, lag has been selected on the basis of the lowest value of the information criteria.

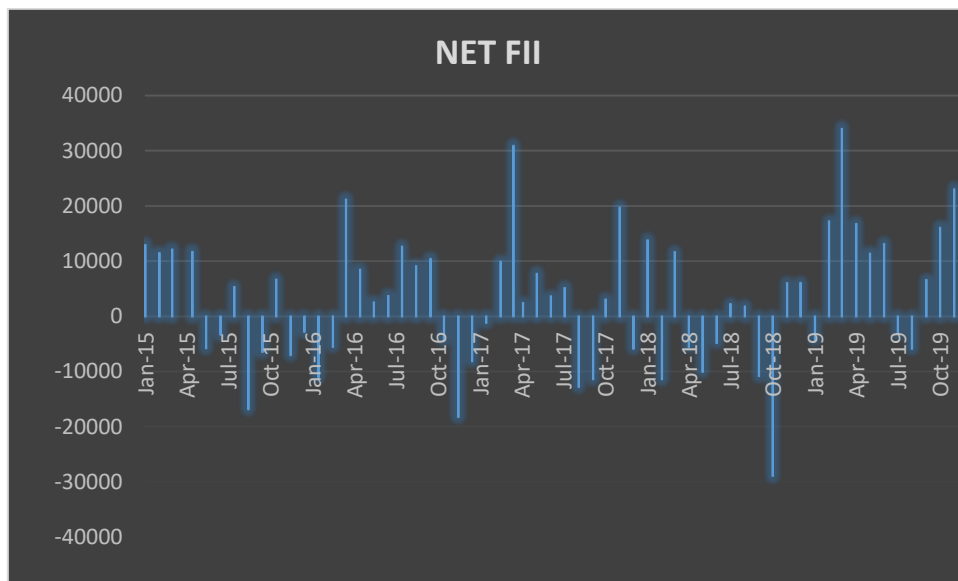
## **DATA ANALYSIS AND FINDINGS**

### **Trend of FII and MF Investment in Indian stock market**

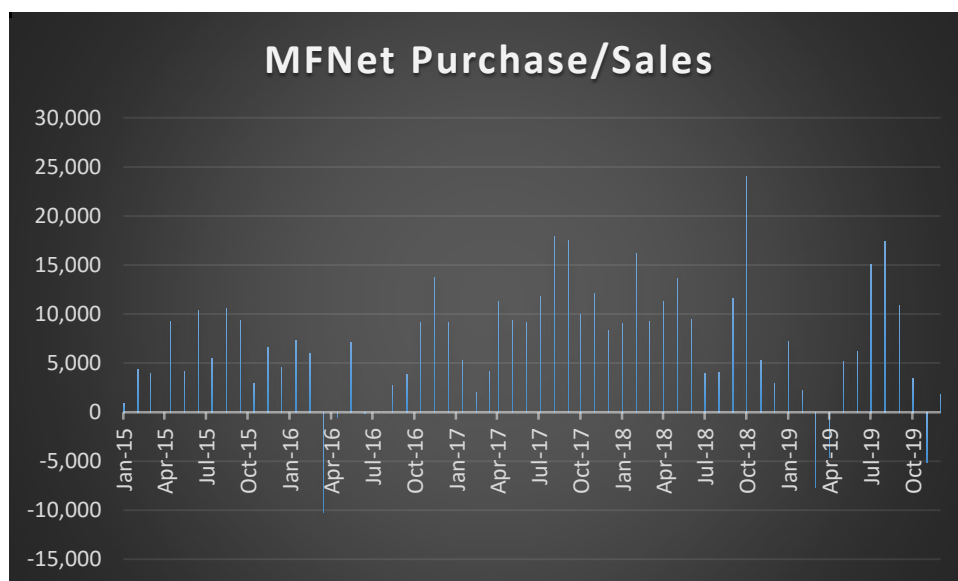
Foreign institutional investment net value is obtained by deduction of the Gross purchase amount from the gross sale. From Graph 1, it can be seen that in the last five-year period i.e., from January 2015 to December 2019 the investment made by FII has depicted wider fluctuation. FII investment trend from January 2015 to April 2015 has shown a positive trend. But suddenly the negative investment pattern comes to notice. Overall, the year 2015 has shown a negative investment of Rs. 14172 in the financial year 2015-16. Later, in 2016 beginning months have shown the negative net amount of investment by FII till Feb 2016 i.e., Rs. – 16647 crores. FII increased investment in the Indian market from March 2016 and showed the favorable attitude in terms of net investment in the Indian stock market till September 2016 with some minor fluctuations. However, in the last phase of the year 2016 they have withdrawn heavy amounts from the Indian market and this trend of investment continued till January 2017.

The year 2017 again showed the interest of foreign institutional investors in the Indian equity market until November except the month of July, August and December which has proven the fund outflows by the FII. From the perspective of the investment trend, the year 2018 was not good but the year 2019 has been good due to greater interest shown in the Indian equity market by foreign institutional investors. As FII flows, in the Indian stock market has shown hit record. As far as the pattern of investment of the domestic mutual fund is concerned, it has also shown a mixed trend. Graph 2 depicts the investment pattern of the domestic mutual fund in the Indian equity market. Mutual fund investment pattern has remained significantly positive in the financial year 2015-16. The net investment by Mutual funds in the first quarter of 2015 was Rs. 9129 crores, then it increased to Rs.23746 crores in the second quarter and this pattern of investment continued till the 3<sup>rd</sup> quarter of 2015 and arrived at Rs. 25295 crores till December.

In March 2016, they withdrew funds from the market and the net investment of mutual funds gets declined. These fluctuations in the investment pattern remained persistent with a negative trend. Gradually mutual funds investment get allured towards the Indian stock market in the financial year 2016-17 leaving the initial months of the year 2016. The year 2017 and 2018 showed a greater increase in investment of mutual funds in the Indian stock market. But in the first quarter of 2019, the net investment aggregate by a mutual fund is Rs. 1669 crores which further increased in 2<sup>nd</sup> and till quarter 3<sup>rd</sup> it reached Rs.43409 crores. But in the last quarter of 2019 mutual investment gets declined and net investment was just Rs. 94 crores in the equity market. After considering the investment pattern of both the types of institutions it revealed that both institutions have shown different investment trends during the period of study.



**Graph 1**



**Graph 2**

### **Stationarity Test of the Time Series Data Set**

First of all time-series data set requires the checking of the unit root properties before applying any econometric tool. For this purpose, augmented dickey fuller test is applied, that provides the information whether there exists any unit root in the time series variables or not. If it does exist then at which order it shows the stationarity of the variables. Table 1 presented the outcome of the ADF unit root test at the level form. This test of unit root is based on the following hypotheses:

$H_0$ : There exists no unit root in series.

$H_a$ : There exists unit root in series.

The test outcome at level forms shows that some variables such as LFIIP and LFIIS are stationary at the level form. As the probability value here comes .0004 and 0.0002 which results in rejection of the null hypothesis because here these values are less than the level of significance which is .05. It is also obvious from the ADF test result that at the level form some variables such as LMFS, LMFP and LNSE are showing unit root, here the probability value and value of t-statistics have not been found stationary. The outcome is showing that there exists unit root as the value of the level of significance i.e. .05 is found less than the p-values of these variables. It shows that Null hypotheses of the existence of the unit root are accepted here.

**Table 1: ADF Test Result at level form**

<b>Variables</b>	<b>Value at level</b>		
	<b>t-Statistic</b>	<b>Prob.</b>	<b>Remarks</b>
LFIIP	-5.156134	.0004	Stationary
LFIIS	-5.353985	.0002	Stationary
LMFP	-1.466061	0.8299	Non-Stationary
LMFS	-2.169090	0.4972	Non-Stationary
LNSE	-3.277992	0.0800	Non-Stationary

Further, the ADF test for unit root is applied to the first difference of MFP, MFS and NSE. The results showed that time series have been found nonstationary at the level form. So to convert it into stationary form its first difference is obtained then again test of unit root is applied on the differenced series which showed that now variables are converted into stationary form after taking its first difference. Table 2 showed the results of the ADF test at the first difference form and the probability value is found less than the level of significance i.e. .05.

**Table 2: ADF results after differencing the Non-Stationary time series**

Variables	Value at 1st difference		
	t-Statistic	Prob.	Remarks
DLMFP	-6.892244	0.0000	Stationary
DLMFS	-12.99427	0.0000	Stationary
DLNSE	-6.892244	0.0000	Stationary

Table 3 showed the results of the lag length criteria. As the selection of the optimal lag has a greater role in ensuring the robustness of any econometric technique, and objective of the study is to find out the causal relationship between the variables of interest such as FIIP, FIIS, MFP, MFS, and NSE, it requires the application of the granger causality test. But before applying the causality test it requires the selection of optimal lag length. The table showed that as per LR, FPE, and AIC the optimal lag is 2. The main reason behind selecting lag 2 is the lowest value of AIC i.e. -9.290338. As per the lowest value criteria lag 2 is found appropriate to further apply the granger test of causality.

**Table 3: Lag Length Criteria**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	210.6851	NA	3.38e-10	-7.617967	-7.433802	-7.546942
1	276.6150	117.2087	7.46e-11	-9.133890	-8.028899*	-8.707738*
2	305.8391	46.54210*	6.54e-11*	-9.290338*	-7.264521	-8.509060
3	328.6108	32.04901	7.56e-11	-9.207807	-6.261164	-8.071403
4	350.3322	26.54841	9.67e-11	-9.086379	-5.218910	-7.594848
5	370.0988	20.49864	1.46e-10	-8.892547	-4.104252	-7.045889

After selecting the optimal lags, next to study the causality relationship among the variables Granger causality test is applied. Table 4 showed the result of the Granger causality test. As per the outcome, it is obvious that there exists a unidirectional relationship between LFIIS and LFIIP, DLMFS and LFIIP, DLMFS and LFIIS, DLNSE and LFIIS, DLMFS and LFIIS, DLMFS and DLMFP, DLNSE and DLMFP.

The causality between LFIIS and LFIIP showed that it is LFIIP that leads and causes the behavior of LFIIS. In the case of DLMFS and LFIIP, the null hypothesis of DLMFS does not cause LFIIP is accepted, whereas the null hypothesis of LFIIP does not cause DLMFS is rejected which shows that causality is directed from purchase



trading of FII towards DMFI sales. It is the FII purchase decision that causes the behavior of the MF sales trade. The causality between DLMFS and FIIS showed the supremacy of the foreign institutions in causing the Sale of mutual funds in the Indian capital market. It shows that the change in foreign institutional investment is the major determinant behind the decision of domestic mutual fund investors concerning their sale.

The null hypothesis ‘DLMFS does not granger cause LFIIS ’ is accepted as the p-value is greater than the .05 percent meaning thereby that the selling decisions of the foreign institutions are not affected by the mutual fund sales. However, the null hypothesis ‘LFIIS does not Granger Cause DLMFS’ is rejected which provides evidence of the dominance of the international institution in determining the domestic institution's decision. The pairwise causality between the Nifty index and foreign institutional sale showed that stock market performance played a major role in causing the movement of foreign institutions’ sales during the period of study. As per the table 4, granger causality between DLMFS and DLMFP showed the unidirectional causality from the Sales side to purchase side decisions of mutual fund investors. The causality direction between the NSE index and Mutual fund purchase showed the significance of the stock market in influencing the domestic investment decision. The table also provides the evidence in favor of the existence of no cause-effect relationship between DLMFP and LFIIP, DLNSE and LFIIP, DLMFP and LFIIS, DLNSE, and DLMFS. The pairwise causality between these time series showed that there exists no causality among them. They take their independent decision and are not affected by the decision of their pair group member. Such as stock market performance does not cause mutual sales and foreign institutions to purchase trade. Similarly, sales by mutual fund and purchase activity by FII do not cause the stock market movement. The results also revealed that purchase by both institutions does not have any causality between them. And the changes in mutual fund purchase trade and sale by FII are independent and no causality is found between these two.

**Table 4: Pair Wise Granger Causality Test (lags=2)**

<b>Null Hypotheses</b>	<b>F-Statistic</b>	<b>Prob.</b>	<b>Accepted /Rejected</b>
LFIIS does not Granger Cause LFIIP	0.33169	0.7192	Accepted
LFIIP does not Granger Cause LFIIS	5.70928	0.0057	Rejected
DLMFP does not Granger Cause LFIIP	0.24168	0.7862	Accepted
LFIIP does not Granger Cause DLMFP	2.98504	0.0593	Accepted
DLMFS does not Granger Cause LFIIP	0.30618	0.7376	Accepted
LFIIP does not Granger Cause DLMFS	3.73088	0.0306	Rejected
DLNSE does not Granger Cause LFIIP	0.67555	0.5133	Accepted

LFIIIP does not Granger Cause DLNSE	0.66079	0.5207	Accepted
DLMFP does not Granger Cause LFIIS	0.58100	0.5629	Accepted
LFIIS does not Granger Cause DLMFP	1.19432	0.3111	Accepted
DLMFS does not Granger Cause LFIIS	0.07001	0.9325	Accepted
LFIIS does not Granger Cause DLMFS	3.56928	0.0353	Rejected
DLNSE does not Granger Cause LFIIS	4.57273	0.0148	Rejected
LFIIS does not Granger Cause DLNSE	0.17525	0.8397	Accepted
DLMFS does not Granger Cause DLMFP	3.26993	0.0460	Rejected
DLMFP does not Granger Cause DLMFS	1.19073	0.3122	Accepted
DLNSE does not Granger Cause DLMFP	5.25917	0.0083	Rejected
DLMFP does not Granger Cause DLNSE	0.43203	0.6515	Accepted
DLNSE does not Granger Cause DLMFS	0.88865	0.4174	Accepted
DLMFS does not Granger Cause DLNSE	1.86525	0.1651	Accepted

## CONCLUSION

This study has examined the investment pattern of the foreign institutional investors and domestic mutual investors in the recent five year period and has also examined the causality between these institutional fund flows and the Indian stock market NSE index Nifty. The study has revealed that foreign institutional investors' pattern of investment was not consistent. Their investment showed wider fluctuations as the fund investments are also known as the hot money which moves out when the market is now showing a favorable position and gets entry when growth is being observed in the capital market. On the other side, the pattern of the domestic mutual fund has also shown fluctuations but this rate was comparatively low. Throughout the sample, the domestic funds have shown a persistent rise in their net investment in the market. The application of Granger causality also provided some eye-opening results. The study observed that it is the position of the stock market that decides the future course of action of the institutional investors in most of the time. And similarly most of the time during these five years, FII has dominated the trading transaction decision of the

domestic mutual funds. But sometimes as in the case of FIIP and DMFP, both these trading decisions are taken independently without causing each other's decisions.

## **LIMITATIONS**

As every coin has two aspects, one is good and another is bad. Similarly, although this study has provided a valuable direction to the policymakers as well to the existing and prospective investors, it is also true that the existing study has some limitations. These are as follows:

1. First of all, the study has not covered the longer period. The inclusion of the longer duration data set might give more robust results.
2. Second, the study has restricted itself only to the causality approach.
3. Third, the inclusion of the high-frequency data might provide more reliable results.

## **FUTURE DIRECTION FOR RESEARCH**

The greater validity of the results can be attained by covering the other forms of the institutional flows. It is also mandatory to re-examine this study for an additional period of time and by replicating it for the other emerging economies to verify whether the results obtained in the present study also hold true in the case of other markets or not. The article has not approached the other causal factors of the Indian stock market, which also provides a scope for further conducting the research in this area.

## **IMPLICATIONS OF THE STUDY**

This study has discussed the investment pattern of the institutional investors and the causal study in the Indian stock market and observed the supremacy of the foreign institutional investment in the stock market in India. As per the results, foreign institutional trading does cause the movement of domestic mutual fund trading. The trading activities conducted by both institutions do not cause the stock market index. The movement in the Nifty index influences the purchase of Mutual fund investors but not the sale transaction. In the case of FII, it does affect the sale trading decision of the investors not their purchase trade. The study has two major implications: first is concerned with the appropriate management of the foreign institutional investors as it is a more dominant form of investment and also has more fluctuating trading behavior in comparison to mutual fund investment. The fluctuating behavior of the FII influences the stock price movement and creates a volatile structure in the domestic market in comparison to domestic institutional investment that further raises the cost of capital. Secondly, domestic institutional investment in the form of DMFI also requires major consideration on the part of the Indian government due to its significant place in the Indian stock market.

## REFERENCES

1. Sharma, M., & Mittal, A. (2019). Role of Foreign Portfolio Investment in Dynamism of Indian Capital Market: A Causality Study. *Ramanujan International Journal of Business and Research*, 4, 249-267.
2. Bhayani, M. (2017). A Study of Recent Trends in Indian Mutual Fund Industry. *International Research Journal of Engineering and Technology*, 4(4).
3. Kadanda, D., & Krishna, R. (2017). Relationship between Foreign Portfolio Investments (FPI), Domestic Institutional Investors, and Stock Market Returns in India. *International Journal of Financial Management*, 7(4), 1.
4. Garg, A., & Chawla, K. K. (2015). A Study of Trend Analysis and Relationship Between Foreign Institutional Investors (FII) & Domestic Institutional Investors (DIIs). Available at SSRN 2623465.
5. Nautiyal, N., & Kavidayal, P. (2013). Study of Causality Analysis between Indian Stock Market Index and FII Net Inflow. *Madras University Journal of Business and Finance*, 12-22
6. Bhatnagar, S. (2011). Foreign Institutional Investors (FIIs) Investment in India: A Trend Analysis of Monthly Flows during January 2004 - August 2010. *International Journal of Research in Commerce & Management*, 131-137.
7. Akula, R. (2011). An Overview of FII in India. *Indian Journal of Commerce & Management*, 100-104.
8. Vashishtha, M.P. (2011). FII and Indian Stock Market: A Causality Investigation. *VERSITA Journal*, 5-24.
9. Shah (2014). Flows of FIIs and Indian Stock Market Perspective. *Ahmedabad Shri Chimanbhai Patel Institute of Management and Research*, 1-9.
10. Kumar (2006). Role of Institutional Investors in Indian Stock Market. 76-80.
11. Mohan, R. T. T. (2005). Taking Stock of Foreign Institutional Investors. *Economic and Political Weekly*, 40(24), 2395- 2399.
12. Dey, S., & Mishra, B. (2004). Causal Relationship between Foreign Institutional Investment and Indian Stock Market. *The IUP Journal of Applied Finance*, 61-80.
13. Bikhchandani, S., & Sharma, S. (2001). Herd Behavior in Financial Markets. *IMF Staff Papers*, 47(3), 279-310. [https://www.imf.org/ External/ Pubs/FT/ staffp/2001/01/ pdf/ Bikhchan.pdf](https://www.imf.org/External/Pubs/FT/staffp/2001/01/pdf/Bikhchan.pdf).
14. Websites :

[www.nseindia.com](http://www.nseindia.com), [www.sebi.gov.in](http://www.sebi.gov.in)

---