

**“A COMPREHENSIVE STUDY OF THE IMPACT OF  
FOREIGN PORTFOLIO INVESTMENTS ON INDIAN STOCK  
MARKET”**

**A THESIS**

**SUBMITTED BY**

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**MASTER OF COMMERCE**

**UNDER THE GUIDANCE OF**

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**SUBMITTED TO**

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**DECLARATION BY THE**  
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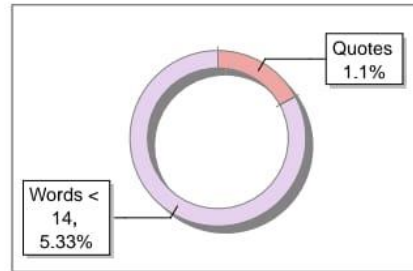
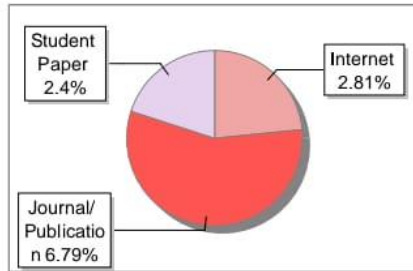
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**Date:**

**Place: Rajkot**

**VASDANI GAUTAM KISHORBHAI**

## **PREFACE**

As I embark on the journey of presenting my thesis titled "FPI Impact on the Indian Stock Market," I am filled with both excitement and gratitude. This thesis represents the culmination of months, if not years, of dedicated research, analysis, and reflection on the intricate relationship between Foreign Portfolio Investment (FPI) and the dynamics of the Indian stock market. My fascination with the world of finance, coupled with a deep-rooted curiosity about the workings of the Indian stock market, served as the impetus for undertaking this study. Throughout my academic journey, I have been captivated by the complexities of international finance and the profound impact it can have on economies, markets, and individuals. It is this passion that has driven me to delve deeper into the realm of FPI and its implications for one of the world's most vibrant and dynamic stock markets – India. I am also grateful to my academic advisors, mentors, and professors, whose unwavering support, encouragement, and guidance have been instrumental in every step of this journey. Their expertise, wisdom, and feedback have challenged me to think critically, analyse rigorously, and communicate effectively – skills that I will carry with me far beyond the completion of this thesis. Lastly, I extend my heartfelt thanks to my family, friends, and loved ones, whose unwavering belief in me has been a constant source of strength and inspiration. Their patience, understanding, and encouragement have sustained me through the inevitable challenges and setbacks that come with academic pursuits.

This Research Work has been divided into five chapters. First chapter deals with the theoretical background of the study which covers the introduction of the Indian stock market of BSE and NSE. The second chapter covers the literature review, research methodology is covered in the third chapter and fourth chapter shows the data analysis and interpretation and in the last chapter there is summary, findings and suggestions based on the data.

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<b>ABBREVIATIONS</b>	<b>FULL FORM</b>
<b>HDI</b>	Human Development Index
<b>UK</b>	United kingdom
<b>CCI</b>	Competition Commission of India
<b>LIC</b>	Life Insurance Corporation
<b>UTI</b>	Urinary tract infection
<b>SEBI</b>	Security & Exchange Board of India
<b>NSE</b>	National Stock Exchange
<b>BSE</b>	Bombay Stock Exchange
<b>NSDL</b>	National Security Depository Limited
<b>CDSL</b>	Central Depository Services Limited
<b>FIT</b>	Foreign Institutional Trading
<b>FII</b>	Foreign Institutional Investor
<b>IPO</b>	Initial Public Offer
<b>FPO</b>	Further Public Offer
<b>HNI</b>	High Noteworth Individual
<b>QIB</b>	Qualified Institutional Buyer
<b>GIC</b>	General Insurance Corporation
<b>FDI</b>	Foreign Direct Investment
<b>FPI</b>	Foreign Portfolio Investment
<b>DDP</b>	Designated Depository Participant

# CHAPTER-1

## INTRODUCTION



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## **1.1 The Indian Capital Market's History**

This chapter provides a concise synopsis of the Indian Capital Market's history and development trajectory. The East India Company began trading securities in India in the eighteenth century, marking the beginning of the country's capital market history. The primary and most powerful organization was the East India Company. Today's world is globalized. Globalized economy needs global integration and the flow of money takes place between different economies. A developing country i.e. lower developed country is a nation with an underdeveloped industrial base, infrastructure, and low Human Development Index (HDI) comparative to other countries. Developing countries like Bangladesh, Nepal, and India, generally experience lower income and capital accumulation. These countries are in severe need of money as there is a strong urge for industrialization, development and growth of the economy. Either on the domestic or on foreign front, they need to fulfill the scarcity of finance. Since, domestic front cannot fulfill all the needs of the country, these countries have to take help from the external sources.

Countries like India have experienced a shortage of capital many times and had scarcity of funds for the development of the country. For instance, while starting the steel plants established in Bhilai, Rourkela, and Durgapur, foreign aid was taken from Russia, Britain, and Germany. Factories like Ford and General Motors also have investment in dozens of countries all over the world. These two giants have opened up factories and invested in machinery to produce vehicles in countries like Brazil, Mexico, Vietnam, South Korea, and India. Thus investment by foreign investors leads to prosperity in developing countries like India. The list of a few large foreign companies that invested in India are as follows- TMI Ltd (Mauritius), Cairn UK Holding, Oracle Global Ltd (Mauritius), Mauritius Debt Management Ltd, Vodafone Mauritius Ltd and CMP Asia Ltd.

India got its independence in the year 1947. At that time, the main concern was to develop the public sector and less focus was on the private sector because there was a fear of monopoly & profit objective by the private organizations. In 1991, the financial situation of India was not good. The country was not even able to pay for two weeks imports. The fiscal deficit, adverse BOP, the crisis of gulf nations, and fall in reserves of foreign exchange inflation and horrific performance of public segments led to such a bad situation that the serving government of Shri Chandrashekhar had to mortgage the gold reserves and discharge its foreign debt obligation.

The situation was bad and the Indian Government had no other option to introduce New Economic Policy in 1991. The policy of liberalization was introduced and the country got its exposure on the global platform. In the year 1992, G.V. Ramakrishna, then Chairman to the Finance Minister Dr. Manmohan Singh insisted for permission of FIIs and later, a full procedure was formulated and SEBI was notified. Now, investors are not bound by the boundaries of one country.

After liberalization investors can invest easily in different economies of the world. Before the 1990s, India had not opened its gates for foreign private investors. During the 1990s, various emerging economies started opening their markets for foreign private investment under the influence of the World Bank and IMF. In September 1992, India opened its ways for investment through capital market for the foreign investors. From 1991 till now, the Indian Stock Market has gone through various experiences and has become stronger day by day. There are three primary periods in the history of the Indian stock market and capital markets:

### **1.1.1 Pre Independence Phase (1830-1947)**

Until the late 19th century, securities trading was unorganized and confined to Bombay (now Mumbai) and Calcutta (now Kolkata). Mumbai is the main trading hub for both, and stocks are bought and sold only by banks. From 1840



to 1850, there were only six brokers who could trade bank shares. During the American Civil War (1860–1861), Bombay became an important source of cotton. As a result, both trading activity and stock prices increased during this period. This was the first explosion in the history of the Indian stock market. The bubble ended in July 1865 when stock prices collapsed. A broker discovered a location to purchase and sell shares in 1874, following the conclusion of the American Civil War. It was on a Mumbai street. Following that, stock dealers established the Native Shares and Stock dealers Association, Bombay, an unofficial organization that is today known as the Bombay Stock Exchange (BSE), in 1875. BSE secures its own property in 1899. Calcutta was the next place to set up a stock market after Bombay. The "Calcutta Stock Exchange Association" was established in 1908 by a group of stock dealers working together. Following Bombay and Calcutta, Madras (now Chennai) also developed stock exchanges with 100 participants in 1920. The Bombay Securities Contract Act was introduced in 1925.

### **1.1.2. Post-Independence Phase (1947-1991)**

After independence, the pace of reserve injection into India's capital markets has accelerated and efforts to inject vitality into various industries have intensified. The Control of Capital Issue Act (CCI) was passed in 1947 to regulate the capital market in India at the time of independence. Before the implementation of economic planning in the 1950s, the leading companies for investors and speculators were Century Textiles, Tata Steel, Bombay Dyeing Company, National Rayon Corporation and Kohinoor Mills. In 1956, to promote the development of stock exchanges and financial institutions in India, the government passed the Securities Contracts (Regulation) Act. During this period, the Indian capital market was given a boost by the establishment of financial organizations like the General Insurance

Corporation of India (GIC) and the Life Insurance Corporation (LIC). In order to arrange the reserve funds from small financial supporters, the Unit Trust of India (UTI) was established as the primary mutual fund in 1964. The year 1980 demonstrates the enormous growth of the Indian financial sector, as many investors began investing in the country's market for the first time in a long time. The Bombay Stock Exchange (BSE) introduced the "Sensex," a stock market index, for the first time in January 1986, using 1978–1979 as the base year. 1988 saw the Securities Exchange Board of India (SEBI) Act take the place of the Capital Control Issue. Prior to economic reforms, there were 21 alleged stock exchanges in India.

### **1.1.3. Economic Reforms Phase (1991 to till now)**

Since the economic reforms, there have been significant changes in the Indian capital market in terms of technology, stock prices, stock market frauds, etc. Various institutional reforms have also been undertaken including the establishment of SEBI, NSE, OTCEI, NSDL etc. Due to the Ketan Parekh scam, the Indian stock exchange stopped accepting Bhadra trades in July 2001 and implemented rolling settlement of all shares as the market entered the 21st century. The Indian capital market has witnessed important historical turning points in the economic changes.

## **1.2 Meaning and Definition of Capital Market**

The words “capital” and “market” together form “capital market”. Capital refers to the total amount of money required by an organization to operate its business. Market is the place where exchange of goods takes place. Therefore, the capital market is a place where long-term securities like bonds, stocks and bonds are borrowed and purchased on a long-term basis. Capital markets deal with both equity and debt.

**According to F. Livingston** “In a developing economy, it is the business of the capital market to facilitate the main stream of command over capital to the point of the highest yield. By doing so it enables control over resources to pass into hands of those who can employ them most effectively thereby increasing productive capacity and spelling the national dividend”.

**According to Arun K. Datta**, “The capital market is a complex of foundations speculation and practices which lay out links between the demand for and supply of different types of capital gains”.

Hence, capital market might be characterized too coordinated framework for the smooth and viable exchange of monetary assets from the financial backers to the business association.

### **1.2.1 Qualities of the Capital Market**

According to the aforementioned definitions, the main features of the Indian capital market are as follows:

- Facilitates long-term investments
- Links savers and borrowers
- Government controls and regulates the capital markets financial intermediaries are used
- Liquidity is provided
- Institutions and individuals dominate the capital market

### **1.2.2 Principal Components of the Capital Market**

The following individuals comprise the majority of the Indian capital market:

- Individuals.
- Corporate.

- Governments
- Foreign Institutional Investors (FIT)
- Banks.
- Provident Funds.
- Non-Banking Financial Institutions
- Mutual Funds
- Post Office Saving Bank

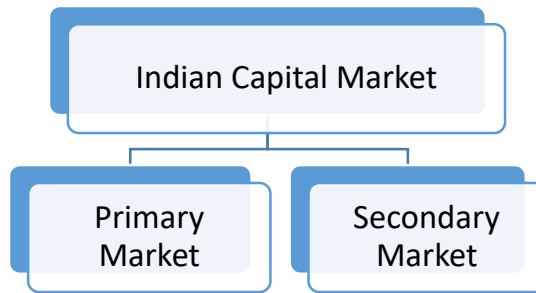
### **1.2.3 Capabilities of the Capital Market**

The following are the capital market's primary purposes:

- Provide long-term savings to support long-term investments;
- Provide equity investments as a type of risk capital. It offers investors a high degree of liquidity to sell their holdings.
- The capital market integrates debt and financial sector, long-term and short-term funds, equity and debt instruments, and lowers transaction costs for financial assets. It also helps to shorten settlement times. Finally, it facilitates speedy evaluation of both debt and equity instruments.

### **1.2.4 Structure of Capital Market**

Structure of Indian capital market can be classified as follows:



**Figure 1.1**

### **1.3 Primary market**

This is a market with a new problem. It is also called the "new stock market". Securities that are offered to the public for the first time or that have additional securities that were not previously available to investors are managed by the new issues market. Therefore, the primary market consists of companies that raise new funds for cash or non-monetary purposes.

#### **1.3.1 Characteristics**

- This is where new long-term funding is being offered. The market where securities are initially sold is known as the primary market. As a result, it sometimes goes by the name New Issue Market (NIM).
- In a primary offering, the business issues the securities to investors directly.
- Companies use primary concerns to launch new ventures, grow existing businesses, or modernize already established ones.
- The primary market plays a crucial function in the economy by facilitating the organization of capital.

#### **1.3.2 Functions**

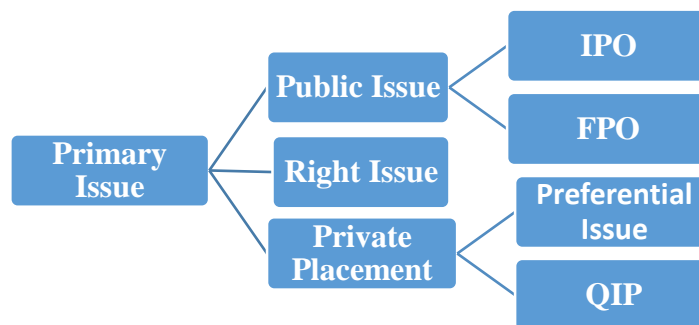
Transferring assets from savers to borrowers or clients is one of the primary market's primary activities. Individuals, banks, insurance firms, and so on are the savers. Public

limited corporations and the government make up the borrowers. The growth of the capital market is significantly influenced by the primary market. There are three basic categories into which the primary market's functions can be divided:

- I. **Origin:-**Describes the process of researching, analyzing, and working on new projects. Merchant bankers may work for commercial banks, other financial institutions, or private companies that perform core functions. It is divided into two parts.
  1. **Preliminary investigation:** is a deep study of the technical, economical and financial aspects to find out soundness of the project.
  2. **Consultancy services:** These services consist of:
    - Issue magnitude
    - Issue timing
    - Issue pricing
    - Issue procedures
    - Securities sale procedures
- II. **Underwriting:** - A contract in which an underwriter promises to subscribe for a certain number of stocks or bonds if the public does not subscribe to the issue. The underwriters are not responsible if the offering is fully underwritten. If any part of the offering remains unsold, the underwriters will purchase the remaining shares.
- III. **Distribution:** - It is the act of selling securities to investors. This service is provided by brokers and agents who maintain regular and direct contact with investors.

### 1.3.3 Methods of Raising Funds in Primary Market

Various methods are used for issue of securities or raising funds in the primary market which are as follows:



**Figure 1.2**

#### 1.3.3.1 Public Issue

A company wishing to issue securities must satisfy the issuance requirements stated in the Companies Act, 2013 and must comply with SEBI regulations regarding issuance requirements. This approach is common for companies looking to raise new financing. Initial public offerings can be classified into initial public offerings (IPOs) and supplementary public offerings (FPOs). The main features of each public issue are:

- Initial public offering (IPO) – A company's first sale of stock or securities to the public in the primary market. In case of IPO, information about the past performance and track record of the company is available. For this purpose, SEBI has set some strict entry criteria for companies. Similarly, IPOs can be classified into two categories.
  - I. Public Offering by Prospectus: This method is commonly used by most of the Indian companies. In this method, securities are issued to investors through a

statement (called an “offer document”) containing the terms and conditions of the issue of securities. It is a notice, circular, advertisement or other document inviting the public to purchase shares or debentures in a company or corporation.

II. Book Building Process: It is the process by which a company sells its shares on the basis of bids received.

- Public Offering (FPO):- Also known as seasoned public offering, an existing public company raises additional funds through an offering.

### **1.3.3.2 Rights Issue**

Rights issue is the issue of capital through a letter of offer to the existing shareholders of a company under Section 81(1) of the Companies Act, 1956. Rights issue is a new offer issued on a proportionate basis to the existing investors of an organization. Typically, promoters issue stock acquisition rights at a discount to the market price to fully subscribe the shares.

### **Offer for Sale**

This method is used when a company wants to issue new shares without issuing a prospectus. A company sells or agrees to sell stock to a financial institution at a fixed price. The financial institution then publishes a statement called an "Offer for Sale" in the newspaper, inviting applications from the public, usually at a price higher than the purchase price. This method is also called a "purchase transaction".

### **1.3.3.3 Private Placement**

A method in which an issuing institution issues new securities directly through a commercial bank. These investors are clients such as financial institutions, corporations, banks and high net worth individuals (HNIs).



- **Priority issue:** This is where a company issues shares to a group of people. Shares are allotted to various groups such as promoters, technical partners and private equity funds. As per SEBI (ICDR) regulations, a preferential issue is defined as the issuance of securities by a listed issuer to a specified group or individual on a private placement basis.
- **Qualified Institutional Offering (QIP):** A private placement issued by a listed company in the form of shares or securities convertible to qualified institutional buyers (QIBs).

## 1.4 Secondary Market

Put simply, it's a marketplace for the purchase and sale of bonds and shares. The transaction of securities that are currently sold and registered in the auxiliary market is included in the secondary market, also known as the share market. The recognized stock exchanges in India that operate in accordance with SEBI regulations and legislation that have been duly approved by the government make up the secondary market.

**According to K. L. Gare** “A stock market is a place for buying and selling of industrial and financial securities such as shares and debentures of joint stock companies, government securities, Municipal Bonds etc.”

**According to S. K. Sinha** “A Stock Market provides a continuous market for the securities where during fixed business hours securities can be sold and purchased on a comparative basis within some changes in the prices quoted last in the market”.

**According to Hastings** “Stock Market or securities Market comprises the places where buyers and sellers of stock and bonds or their representatives undertake transactions involving the sale of securities”.

## 1.5 Rolling Settlement

In January 2000, rolling settlement was initially introduced on a T+5 basis, which means that deals completed on the first day must be settled five days following the trade day. This system was on a T+3 basis starting in April 2002, but it has been on a T+2 basis since April 2003. This means that share transactions are settled two days after the date of trade.

**Table 1.1**

S. No.	Day	Time	Schedule of activity
1	T	By 1:00 pm	Trade day Completion of custodial confirmation of trades to CC/CH
2	T+1	By 2:30 pm  Until 10:30 am	Completion of process and download obligation files to brokers by the CC/CH  Accept pay in instruction from investors into pool account
3	T+2	By 10:30 pm  By 1:30 pm	Submit final pay-in-files to the depository and the clearing bank  Pay-out of securities and funds

## **1.6 Importance of Stock Market in Indian Economy**

A major factor in any nation's monetary development is financial exchange. By encouraging investors to mobilize their savings and investments, it aids in the formation of new industries. The importance of the stock market is as follows:

### **1.6.1 From the perspective of society**

Stock exchange activities can benefit society in the following ways:

- They highlight the role that modern economic advancement plays in the economy. It shows how the nation's finances are reflected.
- The welfare state is crucial to the growth of commercial firms in developing nations like India. Additionally, it aids in government fund-raising for projects in the public sector. People are influenced by stock exchanges to sell their money and transfer them into other securities.

### **1.6.2 From Companies point of view**

- The least variation in offer fees is provided by stock trading.
- Since the stock market has complete control on a company's management, the companies' credit altruism has also increased.
- A business can raise enormous sums of money through different kinds of securities.

### **1.6.3 From investor point of view**

- It safeguards investor interests by enforcing stringent laws and guidelines issued by the government and SEBI. By selling the securities, it gives investors access to liquidity. It also helps to reduce the risk associated with investing in securities. When prices start to drop, an investor can sell his shares with ease.

- It periodically provides investors with guidelines in the form of reports, data, research papers, periodicals, and technical expert studies, enabling them to make informed decisions about their investments.

## **1.7 Drawbacks of Indian Stock Market**

After economic reforms different steps have been taken by the government and market regulator for the development of stock exchange, however it suffers from some drawbacks which are the main obstacle in the growth of stock market. Some of the obstacle are as follows:

- **Presence of Price-Rigging:** - in recent time some of the companies suffer from trend of price rigging in which prices of securities tends to increase artificially. This is finished by some gathering of people when the market development is bullish.
- **Poor Liquidity:** Various securities are given liquidity through the stock exchange. Although there are many companies listed on stock exchanges, only a small number of them appear appealing to investors in terms of liquidity.
- **Dominance of Insider Trading:** Insider trading is widespread in India. Insiders are people who take use of their position to obtain unpublished price-related information about a firm for their personal gain. But SEBI has already begun taking action to stop this practise. However, there is still little prospect of totally avoiding insider trading.
- **Financial Institution Dominance:** For a number of years, financial organizations including LIC, SBI, GIC, UTI, and ICICI have dominated the Indian stock market. As a result, these institutions have significant control over the stock market, which lowers the amount of competition among financial organizations.

- **Extremely Volatile Market:** The Indian stock exchange has been remarkably volatile for the past 1.5 years. Both the NSE Nifty and the BSE index, Sensex, move significantly. The Central Government authorized the growing number of Foreign Institutional Investors (FII) in 1991, which is essentially the reason for the alterations in these records. An additional noteworthy factor contributing to market volatility is the emergence of speculation in intraday transactions.
- **Lack of Professionalism:** - Another important drawback of stock market is lack of professionalism in stock brokers. Brokers with deficient financial support and absence of ability or skill enter in to enormous agreements which cause default in stock market.
- **Speculative Trading:** - Stock market trading in present time is speculative in nature. The operator tries to get benefit from short term price fluctuations. The brokers try to create a sentiment in the market which will be beneficial to them.
- **Unethical acts:** - Insider trading and price rigging are two unethical acts that stock market participants, including brokers, entrepreneurs, financial intermediaries, and companies, occasionally engage in. These practices artificially raise the price of shares. Though market regulator SEBI works hard to regulate these practices, additional oversight is still necessary in this domain.

## 1.8 Major Stock Exchanges in India

Stock exchange plays an important role in the development of financial market of any country. Stock exchanges in India hold a place of eminence not only in Asia but also at the worldwide stage. Thus, stock exchanges constitute of a market where securities issued by the central and state, governments, public bodies and joint stock companies are traded. Following 7 types of Stock Exchange in India.

- Bombay Stock Exchange (BSE) Ltd.
- National Stock Exchange (NSE) of India Ltd.
- Calcutta Stock Exchange Ltd.
- Indian Commodity Exchange Ltd.
- Metropolitan Stock Exchange of India Ltd.
- Multi Commodity Exchange of India Ltd.
- National Commodity & Derivatives Exchange Ltd.

## **1.9 Foreign Institutional Investors (FIIs) in India**

FIIs are foreign entities that have set up shop in India with the goal of investing in the Indian securities market by managing investors' savings collectively in order to generate a quick profit. Simply put, a foreign institutional investment is an investment made in the equity and debt instruments of a business that is based in another nation by a resident entity of one nation with the intention of making an instant monetary gain rather than a long-term stake in the business.

Foreign Institutional Investors are defined as "an institution established or incorporated outside India which proposes to make investment in India in securities" by the Securities Exchange Board of India under the Foreign Institutional Investors Regulations Act of 1995.

All securities traded on the primary and secondary markets are available for purchase by foreign institutional investors, including warrants, debentures, and shares of companies listed or scheduled to list on Indian stock exchanges; schemes offered by mutual funds; government securities; derivatives traded on stock exchanges; commercial papers; and security receipts.

## **1.10 Entities Which Can Register as FIIs in India**

The following organizations are eligible to register as FIIs in India if they were founded or incorporated overseas and intend to invest their "broad based" money there.

- a) Pension Funds
- b) Mutual Funds
- c) Investment Trusts
- d) Asset Management Companies
- e) Nominee Companies
- f) Banks
- g) Institutional Portfolio Managers
- h) Trustees
- i) Power of Attorney Holders
- j) University funds, endowments, foundations or charitable trusts or charitable societies.

Sub-accounts may also be invested for by the FIIs. The ensuing organizations are qualified to register as sub-accounts:

- I) an institution or fund or portfolio established or incorporated outside India,
- ii) A foreign corporate or a foreign individual.

A sub-account is defined as "any person residing outside of India who is registered under these regulations as a sub-account and on whose behalf investments are proposed to be made in India by a foreign institutional investor."

## **1.11 Foreign Portfolio Investors**

Three categories of investors, including Foreign Institutional Investors (FIIs), Qualified Foreign Investors (QFIs), and Sub-Accounts, are able to invest in foreign portfolios. The Securities Exchange Board of India combined all three existing investor classifications as Foreign Portfolio Investors (FPIs) in order to streamline the foreign portfolio investment process overall in India and to align with the several avenues for foreign portfolio investment. All FIIs, QFIs, and Sub Accounts that have registered and expressed interest in continuing have turned into Foreign Portfolio Investors.

"A person who satisfies the eligibility criteria prescribed under regulation four and has been registered under Chapter II of these regulations, which shall be deemed to be an intermediary in terms of the provisions of the Act," is the definition of a foreign portfolio investor as given by the Foreign Portfolio Investor Regulation of 2014. However, foreign institutional investors and qualified foreign investors who hold a valid certificate of registration will be considered foreign portfolio investors until the end of the block of three years for which fees have been paid in accordance with the Securities and Exchange Board of India (Foreign Institutional Investors) Regulations, 1995.

A person who has created a dematerialized account with a qualified depository participant as a qualified foreign investor is referred to as a qualified foreign investor (QFI).

### **1.11.1 Registration of Foreign Portfolio Investors**

If an individual meets the requirements outlined in the regulation, they will be able to receive a certificate from the designated depository participant acting on behalf of the Securities and Exchange Board of India. However, they will need to submit an application in the approved form and pay the board-specified fee.



### 1.11.2 Categories of Foreign Portfolio Investors

Under FPI Regulation, the FPIs are classified into three categories on the basis of risk involved.

**Category I Foreign Portfolio Investor** - It comprises investors who are connected to the government, such as central banks, sovereign wealth funds, government agencies, and international or multilateral organizations.

**Category II Foreign Portfolio Investor** - Mutual funds, investment trusts, banks, asset management firms, insurance and reinsurance providers, investment managers and advisors, portfolio managers, broad-based funds that are not properly regulated but whose investment manager is, university funds, pension funds, and university-affiliated endowments that have already registered as foreign institutional investors or sub-accounts with the Board are all included.

**Category III Foreign Portfolio Investor** - It includes all other entities—endowments, charitable societies, charitable trusts, foundations, corporate entities, trusts, people, and family offices—that are not qualified under Categories I and II.

#### Top 20 FPIs who have invested in Indian Security Market

Table1.2

S. NO.	Countries of FPI	No. of FPI	Category 1	Category 2	Category 3
1	Us	3211	13	2795	403
2	Luxembourg	1081	0	984	97
3	Canada	634	24	568	43
4	Ireland	592	0	537	55
5	Mauritius	578	15	416	147

6	United Kingdom	502	3	467	0
7	Japan	421	1	413	7
8	Singapore	372	33	212	127
9	Australia	329	19	283	27
10	Cayman Islands	302	0	219	83
11	South Korea	131	27	96	8
12	Taiwan	131	0	130	1
13	Netherlands	120	1	80	39
14	Denmark	114	1	105	8
15	Hong Kong	112	1	99	12
16	Germany	96	0	89	7
17	United Arab	87	44	6	37
18	Malaysia	69	4	62	3
19	Sweden	59	2	57	0
20	Switzerland	47	0	45	2

The countries from which Institutional Investors fund belongs are given in Table no.1.5. There are a total of 9390 FPI registered with the Depository, who have broad-based funds. The country that topped the list is the United States of America, followed by Luxembourg and Canada and the names of the few FPIs are as follows:

- a) Alaska Permanent Fund, Category I, Us.
- b) 1199 Seiu Greater New York Pension Fund, Registered as Category IT, Us.
- c) 238 Plan Associates LLC, Category III, Us.
- d) AB FCP I - Dynamic Diversified Portfolio, Category II, Luxembourg.
- e) AB FCP I - Emerging Markets Debt Portfolio, Category II, Luxembourg.

- f) Active Asian Equity Fund, Category I, Canada.
- g) 1832 Global Value Strategy, Category II, Canada.
- h) Acadian Emerging Markets Alpha Plus Fund Trust, Category III, Canada.

## **Parties Associated with FPI**

### **a) Designated Depository Participant (DDP)**

Designated depository participants have to act as per the conventions and policies specified by the board.

- The depository participant should be registered with the Security Board of India.
- DDP should act as a custodian of securities and should register itself as a custodian.
- The contender should be authorized by Reserve Bank as an authorized dealer category-1 bank.
- The contender should be well and appropriate individual as per the schedule 2 of SEBI Regulations, 2008.
- The contender should fall under home jurisdiction if its work is expanded outside the home country through its branches or its agency relationship with mediators.
- If the contender is working like a global bank then he must be registered as a participant as well as custodian of securities, with the board. He should make a tie-up with the authorized dealer of category 1 bank.
- The contender should act as per the requisite of FATF standards as well as the Prevention of Money Laundry Act, 2002 rules prescribed by the board with the medium of circulars provided from time to time by the board.

- The board should be provided with all the obligatory information and explanation demanded [for the issuance of a certificate as DDP and if required the board can call the contender for personal representation and clarifications as needed by the board.
- The FPI contender also needs to take up DDP for the services related to registration as Foreign Portfolio Investors. FPI has to contact DDP for further communications and procedures given by the board.

**b) Appointment of Custodian of Securities**

There is an agreement between Custodian of securities and DDP, to act as custodian of securities. Custodian has to report to the DDP and board regularly and keep an eye on the investment of the FPIs.

The custodian needs to check the transaction made by FPIs according to the prescribed manners and forms. The custodian should supervise the investment of foreign portfolio investors and maintain the factual and accurate records, credentials, books of accounts and documents including the records relating to transactions of foreign portfolio investors.

**c) Appointment of Designated Bank**

FPI should appoint a bank or its branch, which should be authorized by RBI for opening of overseas money denominated account and particular non-resident rupee account before making any investment in India.

**d) Appointment of Compliance Officer**

FPI should employ a compliance officer who makes certain that whether there is compliance of acts, norms, regulations, notifications, rules, guidelines, and procedures issued by DDP and the board and the

Central Government. He should make a check and ensure the acquiescence accordingly. The Compliance officer can report immediately and independently to DDP and SEBI and provide them the details concerning any non-conformity found by him.

- Thus these are few parties that are engaged in the investment done by Foreign Portfolio investors. There are obligations and responsibilities assigned to an authorized bank that has to meet the terms within the stipulated time frame.

### **Foreign Regulatory Authority**

- Foreign central bank that regulates, supervises, licenses and registers any person is known as Foreign Regulatory Authority.
- Any person that is registered and regulated by a securities or futures regulator in any foreign country or state.
- Any broad-based fund or a portfolio incorporated outside India or proprietary fund of a registered FII or university funds, endowment, foundation, charitable trust, or society.

### **1.12 Stock Market Index in India**

An important factor in the examination of securities and effective portfolio management is the stock market index. By observing the daily fluctuations in stock prices, it gauges the movement and direction of the market. This is used by certain economists to analyze business cycles, determine patterns of economic growth, and establish relationships between stock market indices and economic activity. An indicator of the state of the market is a figure called an index of stocks. Based on Market Capitalization, the NSE Index: - There are thirteen different sorts of indices based on market capitalization.

The study is based on the Indian stock market; therefore, it becomes necessary to provide some overview of the Indian Capital market. The Indian stock markets are one of the oldest in Asia. Its history goes back to nearly 200 years ago. The history of the Indian securities market dates back to the 18<sup>th</sup> century when the shares of the East India Company were traded in Mumbai and Kolkata. By the 1830s businesses, corporate, joint stocks and shares were started. However, the era of the corporate securities in real sense began in 1850 with the introduction of joint-stock companies. These companies were formed with limited companies. In 1860, the American Civil War broke out and the supply of cotton to the USA was stopped. That caused surplus stock in the domestic market, and trading in securities began aggressively, and the brokers indulged in excessive speculation. It resulted in a slump in the market and share prices fell very badly. It also resulted in mass-scale defaulters and losses to the traders and investors. Therefore, there emerged a need for some organized sector, so that the trading could take place in a controlled and protective environment. The need for the organized sector brought the Mumbai brokers together at a commonplace. Hence, in 1875, the first stock exchange in the country under the name of "The Stock Exchange" came into existence.

The decade of the 1980s witnessed exponential growth and development of the capital market in India. The government started taking positive steps for the development of the capital market and took several steps in terms of policy matters to boost the capital market of the country. The nation also witnessed the era of liberalization and decontrol. By the end of the 1980s, the ownership and the firm control was given to the securities holders and the corporate sector started relying more and more on the equity market as a long term source of finance for its needs. Today, India has 24 recognized stock exchanges in the country. This has changed the atmosphere in the capital market of the country and brought notable changes in the capital structure of

the corporate and caused the emergence of new intermediaries and other institutions in the fray. Following are the two major stock exchanges in India.

### **1.13 Stock Exchanges in India**

#### **Bombay Stock Exchange (BSE):**

The Stock Exchange, Mumbai (BSE) came out with a stock index in 1986, which is known as BSE Sensex. The base year of BSE Sensex is 1978-79 and the base value is 100. The exchange is the largest (in terms of market capitalization) in South Asia. In terms of the number of companies traded on the exchange, it is the oldest in the world. The main index, which tracks the performance of the exchange, is the BSE Sensex and other indices of BSE are BSE100, BSE 200 & BSE 500. The indices taken in the study are as follows:

##### **A) Bombay Stock Exchange Sensitive Index (BSE SENSEX):**

The S&P BSE SENSEX (S&P Bombay Stock Exchange Sensitive Index), also called the BSE 30 or simply the SENSEX, is a free- float market-weighted stock market index of 30 well established and financially sound companies listed on Bombay Stock Exchange.

##### **B) S&P BSE-100 Index:**

S&P BSE 100 Index is a broad-based index. This Index has 1983-84 as the base year and was launched in 1989. In line with the shift of the S&P BSE Indices to the globally accepted Free-Float methodology, S&P BSE 100 was shifted to Free-Float methodology effective from April 5, 2004. BSE SENSEX reflects the market sensitivity in a very effective manner. The addition of new broad-based index series reflects the rapid growth of the market, as well as market trends in a more efficient way. It provides a better representation of the

increased equity stocks, market capitalization and also the new industry groups.

### **National Stock Exchange of India (NSE)**

NSE was set up as a demutualized body and not like other Stock Exchanges of the country, which was either association of persons or mutualized bodies. NSE was set up by institutions and is managed by independent professionals and trading rights are in the hands of brokers. This has resulted in the elimination of conflicts of interest among three groups i.e. owners, managers, and traders. Because of this, NSE has been able to pursue its policies and practices of public interest in an aggressive manner and has been able to achieve top position in the country in terms of volumes, market products, and innovations. NSE was instrumental in shifting the trading platform from the trading hall located in the premises of stock exchanges to the personal computers at the premises of the trading members located across the country and subsequently to the personal computers of the investors in their homes and even to handheld portable devices of the individuals. The main index that tracks the performance of the exchange is Nifty and other indices of NSE are CNX 100, CNX 200 & CNX 500. The indices taken in the study are as follows:

#### **A) CNX Nifty:**

CNX Nifty is a well-diversified 50 stock index accounting for 23 sectors of the economy. It is used for a variety of purposes such as benchmarking fund portfolios, index-based derivatives and index funds. CNX Nifty is owned and managed by India Index Services and Products Ltd (ISL). ISL is India's first specialized company that focuses upon the index as a core product.



## **B) Nifty Next 50:**

Nifty next represents the 50 companies from Nifty 100 excluding the Nifty 50 companies. It was introduced on January 1, 1997. The indices of BSE- Sensex and BSE100 and NSE- NIFTY and CNX next 50. It shows an upward trend with some fluctuations in few years. The market responds to various tangible, non-tangible and national factors that show the upward and downward trends of the market. The macro and micro variables of the market can also impact the growth of the country. As the Figure 1.2 shows a downward pattern has been seen in the year 2008-09. It was due to the international crisis that impacted almost all the developed and emerging economies of the world. So apart from national factors; international factors also play a major role. The types of indices of stock exchanges that include stocks of different sectors or companies were discussed in the above section. Returns of these indices are affected by different factors such as political stability, interest rates, inflation, and various other global factors, in which Foreign Institutional Investors is one of the main factors.

### **1.14 India's Depository System**

Similar to a bank that accepts public deposits, a depository also does so. It's an entity that, at the request of the shareholders, uses a depository participant to hold shares in electronic form. Securities are held in the interest of investors by a depository. In this structure, a depository serves as a custodian position. As someone wishes to open a bank current account or savings account. In a similar vein, a stock market trader must open a demat account with a depository.

"Depository means a company formed and registered under the Companies Act, 1956 and which has been granted a certificate of registration under Section 12(1A) of the Depositories Act, 1996," states section 2(e) of the Depositories Act, 1996.

### **1.14.1 Need for setting up Depository System in India**

- There are numerous anomalies in securities market scams, necessitating the establishment of an Indian depository system.
- The allocation, transfer, or refund of funds took a long period, which contributed to the capital market's sluggish growth.
- The government realized that foreign investment was essential for the growth of the capital market and economy as a result of the rising fiscal imbalance.
- The need for a depository was also brought about by the issue of physical share theft or fraud. Occasionally, investor signatures do not match, which causes share transfers to be delayed.

### **1.14.2 Process of Depository System**

Following procedure is adopted to open a depository account:

- Account opening: A depositor wishing to use the services must open an account with the depository participant (DP), who may be on the list mentioned above. A client ID number is provided to the investor, and a Permanent Account Number (PAN) is required in order to use a demat account.
- Dematerialization is the process of transferring securities from physical to electronic form. Filling out a Dematerialization Request Form (DRF) with DP is required of investors who wish to dematerialize their shares. After that, the DP sends this document to the transfer agent and registrar, who confirms the securities certificate.
- Rematerialization is the opposite of dematerialization, which is the conversion of electronic securities into physical form. The investor must complete and submit the Rematerialization Request Form (RRF) to DP.

- **Dividend Distribution:** - A business may occasionally give the depository information about corporate actions, such as dates of book closure, security redemption, and call money. A list of the client's holdings as of the deadline is provided by the DP. Dividends, interest, and other advantages may be immediately credited to client accounts by the business.
- **Closing an account:** A client must submit an application in the required form to the DP in order to close his account. If there are no remaining amounts on his credit in the account, the client may close his account.

### **1.14.3 National Securities Depository Ltd. (NSDL)**

In August 1996, NSDL became the first depository in India to register with the Securities Exchange Board of India (SEBI). It began operating in November 1996. The National Stock Exchange (NSE), State Bank of India (SBI), Unit Trust of India (UTD), and Industrial Development Bank of India (DBI) all supported it. It is a public limited company with a paid-up capital of Rs. 105 crore that was established under the Companies Act of 1956.

### **1.14.4 Central Depository Service Ltd. (CDSL)**

CDSL was established as the second depository member in India with the intention of providing cost-effective, secure vault management. The Bombay Stock Exchange (BSE) was the primary promoter, and Bank of India, Bank of Baroda, HDFC Bank, State Bank of India, Union Bank of India, and Centurion Bank were co-sponsors. Launching its maiden Initial Public Offer (IPO) in June 2017, CDSL was the first depository to start its procedure on March 22, 1999.

## 1.15 Framework of Stock Exchange (SEBI)

Capital Market of India mainly has been divided in to four legislations or regulatory framework:

- **The 1947 Capital Issues & Control Act:** In 1943, during the war, this statute was created. The primary aim of this legislation was to allocate funds to sustain the war effort. A company wishing to issue securities must first receive approval from the central government under this statute. The quantity, kind, and cost of the issue are then also determined by the Central Government. 1992 saw the abolition of this act due to economic improvements.
- **The Securities Contracts Regulations Act (SCRA), enacted in 1956,** establishes guidelines for stock exchange management and securities trading. Additionally, it gives the Central Government the regulatory authority to keep an eye on stock exchanges, recognize them, and allow securities to be listed on them.
- **The Companies Act of 1956** primarily addresses public offerings, the transfer and allocation of securities, the disclosure requirements for first public offerings, and other matters. In addition to this, offers are guaranteed, the proper offer is issued, interest is paid, profits are made, and premium and markdown on issue are used.
- **Act of 1992 establishing the Securities Exchange Board of India (SEBI):** Trade volume in the primary and secondary markets expanded during the period of economic changes announced in 1991, and the capital market was also severely damaged by a surge in stock market frauds. The 1947 Capital Control Issue Act was insufficient at the time of reform, and the stock market required a statutory body with independent operations to ensure smooth operation. In order to meet this demand, the CCI Act of 1947 was repealed, and on April 30, 1992, SEBI was given formal authority.

## **1.16 Purpose and Aims of SEBI**

- To safeguard the interests of securities traders.
- The outlawing of unethical stock market trade methods.
- Outlawing insider trading
- Fostering the growth of stock market intermediaries and investor education.

## **1.17 Function of SEBI**

- Controlling the activities of the stock and other securities markets.
- The registration and regulation of underwriters, stock brokers, sub brokers, share transfer agents, bankers to the issue, registrar to the issue, merchant bankers, and other securities market intermediaries.
- Outlawing insider trading
- Controlling and registering how mutual funds and VCF operate
- Encouraging and overseeing self-regulatory groups.
- Conducting stock exchange audits, investigations, and inspections
- Gathering data and conducting research that will benefit all market players

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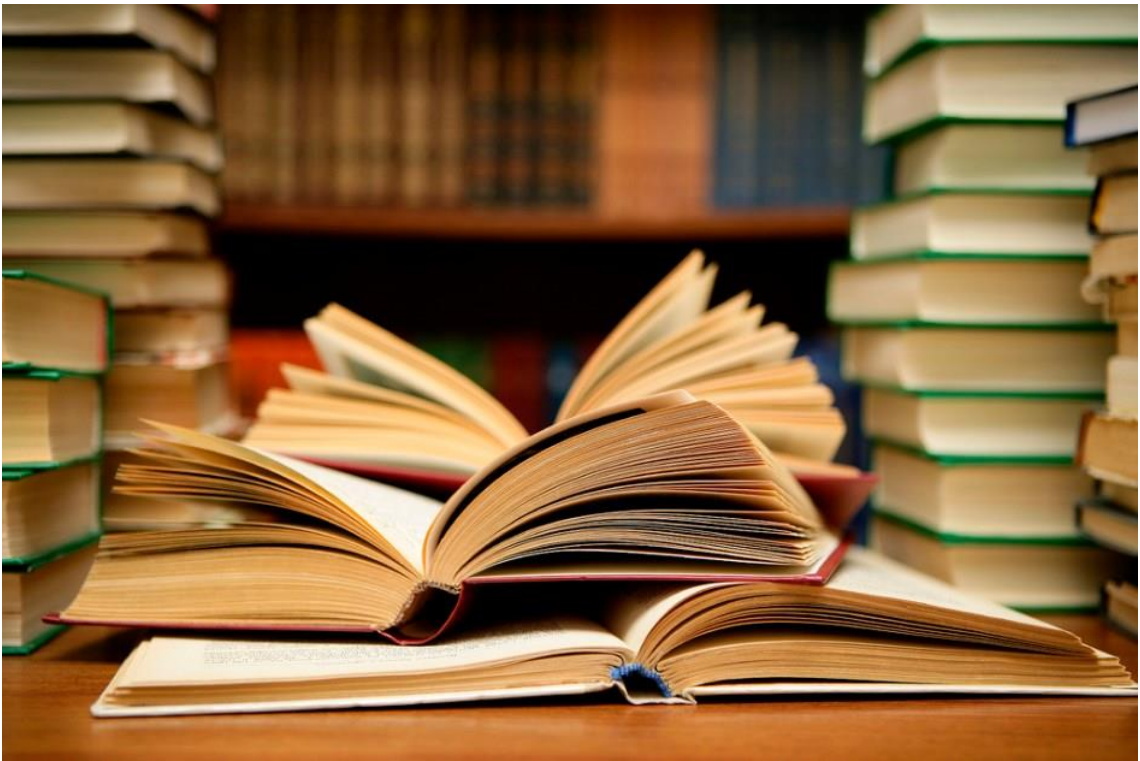
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# CHAPTER-2

## LITERATURE REVIEW



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## 2.1 Introduction

This chapter summarizes the key research on foreign institutional investments and the stock market. Foreign direct investment, or FPI, is a widespread occurrence worldwide and is playing an increasingly important role in emerging nations' financial markets. The increased involvement has prompted a number of inquiries from scholars, investors, and policy leaders, including:

Does the market return get significantly affected by FIIs?

Does the market return affect FIIs' decisions to invest in India?

Do FIIs have a destabilizing effect on the volatility of the market?

Why do the FIIs choose to make investments in India?

Based on these research questions, the review of literature is presented in reverse chronological order in four heads such as:

1. Foreign Institutional Investment and stock market return
2. Foreign Institutional Investment and market volatility
3. Determinants of Foreign Institutional Investments
4. FII and market liquidity and other relevant studies

## 2.2 Literature Review

**Pal P. (2010)** This study aims to investigate the effects of foreign portfolio investment on the industry and economy of India. The impact of the stock market on the nation's economic development will also be looked at, since the stock market is essentially how FPI interacts with the real economy. The results of this study demonstrate that India has not benefited from the alleged advantages of foreign portfolio investment. Based on the study's findings, it may be concluded that India does not appear to be a

good candidate for the widely held belief that the admission of foreign portfolio investors will strengthen a nation's stock market and, in turn, its economy. The Indian stock market's secondary market segment has been impacted by the inflow of FIIs. <sup>1</sup>

**Goel and Gupta (2011)** investigated how the Indian stock market's numerous trends were impacted by globalization. The study found that the post-1990s capital market reforms had a significant role in the growth of the Indian stock markets. The results of this study also showed that, following liberalization, the economy had significantly improved in terms of increased economic development. In addition, the expansion of the Indian stock market has been greatly aided by the introduction of new technology, such as online trading, depository systems, financial derivatives, and the National Securities Clearing Corporation (NSCC). As a result, most of the key metrics, including turnover ratios, value traded ratios, and stock market capitalization ratios, increased. The analysis indicated that while there had been a notable increase in the key ratios, there had also been a decrease in volatility. According to the report, there was more convincing evidence that the economy could take these advances and continued to exhibit promising indicators. The analysis came to the conclusion that, rather than having a direct impact on stock return volatility, FII participation into India following liberalization reduced yearly stock price volatility. However, the size and liquidity of the stock market were significantly and favorably impacted by the foreign institutional investments. <sup>2</sup>

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<sup>1</sup> Pal, Parthapratim. (2010). Foreign Portfolio Investment Stock Market and Economic Development: A Case Study of India. 10.7135/UPO9780857289575.007.

<sup>2</sup> Goel, Kavita & Gupta, Rakesh. (2011). Impact of Globalization on Stock Market: Development in India. Global Business Review. 12. 69-84. 10.51768/dbr.v12i1.121201106.

**Tayde and Rao (2011)** investigated the use of positive feedback trading and herding by foreign institutional investors (FIIs) in the Indian stock markets. Utilizing information from January 2003 to December 2009, the research discovered that FIIs use positive feedback and herding as trading strategies in the Indian market. The herding tendency in large-cap equities was greater than in small-cap stocks due to the disparity in liquidity.<sup>3</sup>

**Makan et al. (2012)** Using data from April 2005 to March 2012, investigated the effects of seven macroeconomic variables on the return on the Indian stock market. The analysis discovered a negative correlation between Sensex and exchange rate and a positive correlation with FII and call rate. With the exception of the FMCG sector, there is no cause and effect link between FII and Sensex across all BSE sectors. The analysis came to the conclusion that, over time, indigenous macroeconomic forces rather than those from abroad drove the Indian stock market. Regression analysis and correlation were the study's foundations.<sup>4</sup>

**Anayochukwu (2012)** attempted to determine the correlation between foreign portfolio investments in Nigeria and stock market return. Based on data from 1990 to 2009, the study employed regression analysis and the Granger causality test to find evidence of a positive and significant influence of FPI on stock market return. Foreign

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<sup>3</sup> Tayde, Mangesh & Rao, S.V.D.. (2011). Do Foreign Institutional Investors (FIIs) Exhibit Herding and Positive Feedback Trading in Indian Stock Markets?. *International Finance Review*. 12. 169-185. 10.1108/S1569-3767(2011)0000012009.

<sup>4</sup> Ahuja, Avneet & Makan, Chandni & Chauhan, Saakshi. (2012). A Study of the Effect of Macroeconomic Variables on Stock Market: Indian Perspective. *SSRN Electronic Journal*. 10.2139/ssrn.2178481.

portfolio investments in the economy were brought about by stock market results, not the other way around.<sup>5</sup>

**Kumar and Tavishi (2012)** Using data covering a ten-year period from 2000 to 2010, examined the dynamic and static link between the FII and the returns on the Indian stock market. For this, a number of econometrics methods had been employed, including VAR, the Granger causality test, and the Impulse Response Function (IRF). The study's empirical findings revealed a stronger correlation between the flows of foreign institutional investment and both their historical lagged values and the lagged returns of the Indian stock market. It was discovered that FII had a stronger reaction to both the stock market returns and the standard shock. Additionally, it was discovered that the association was quite significant—but only for a brief period of time. The FII flows and the returns on the Indian stock market were found to be causally related in both directions.<sup>6</sup>

**Siddiqui and Azad (2012)** conducted a study titled "FII Flows and Indian Financial Market: Relationship and Way Forward." In order to analyze the dynamic relationship between the Indian stock market's indices and the FII flows into India, The study's ten-year timeframe was from 2000 to 2010. According to the survey, FII has grown in popularity over time when compared to other external financing sources that are both non-volatile and non-debt in nature. The analysis of the FII flows by sector made it abundantly evident that the FIIs had concentrated their investments over the years

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<sup>5</sup> ANAYOCHUKWU, Dr. O. B. (2012). The Impact of Stock Market Returns on Foreign Portfolio Investment in Nigeria. *IOSR Journal of Business and Management*, 2(4), 10–19. <https://doi.org/10.9790/487x-0241019>

<sup>6</sup> Kumar, Santosh & Tavishi, Tavu & Dr, Raju & Khatua, Ashish. (2012). Behavioral Modeling of Foreign Institutional Investor's in Indian Equity Market.

in India on a small number of carefully chosen sectors, such as the banking, IT, automotive, and metal industries.<sup>7</sup>

**Banerjee (2013)** conducts research in order to determine the effect of FDI and FII on equity investment in the Indian stock market. The study's data was gathered over an 18-month period, from January 2008 to June 2009, during which the BSE Sensex and Nifty experienced a recession. Data analysis techniques include multiple regression analysis and correlation. It was discovered that during the recession, FDI had a major impact on the Indian stock market. But the FII had a detrimental impact on the Indian stock market.<sup>8</sup>

**Pavabutr and Yan (2013)** used monthly time series data from January 1995 to December 2012 to assess the correlation between foreign investment flow and market performance. According to the study, lower necessary rates of return are linked to equities that FII prefers, and vice versa. Unexpected flows had a relatively larger pricing impact than anticipated flows. Greater size stocks showed a stronger positive correlation between FII flow and market return than smaller stocks did.<sup>9</sup>

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<sup>7</sup> Siddiqui, Areej & Azad, N.A.. (2012). Foreign Institutional Investment Flows and Indian Financial Market: Relationship and Way Forward. *Vision: The Journal of Business Perspective*. 16. 175-185. 10.1177/0972262912460154.

<sup>8</sup> Banerjee, Arindam. (2013). Impact of FDI and FII on the Indian Stock Market during Recent Recession Period: An Empirical Study. *Journal of Management and Science*. 1. 475-482. 10.26524/jms.2013.53.

<sup>9</sup> Pavabutr, Pantisa & Yan, Hong. (2007). The Impact of Foreign Portfolio Flows on Emerging Market Volatility: Evidence from Thailand. *Australian Journal of Management - AUST J MANAGE*. 32. 345-368. 10.1177/031289620703200209.

**Gupta (2013)** attempts to determine the effects of FDI, FII, and FPI (Foreign Portfolio Investment) inflows on the movement of the NSE Nifty and the BSE Sensex over the study period. The entire basis of the study is secondary data, which were examined using various methods such as regression (OLS Model), analysis of variance, and Karl Pearson's correlation. It was discovered that FDI had an impact on the Sensex and Nifty by up to 61% and 86%, respectively. The FPIs did, however, indicate a very significant impact on the NSE and a very modest impact on the Sensex. FIIs was the least significant factor during the study period having the lowest impact on senex and nifty.<sup>10</sup>

**Naik and Padhi (2014)** Using data from January 2002 to July 2012, looked into institutional investments and the return on the Indian stock market. The study discovered that although mutual funds use a negative feedback trading approach, FIIs in the Indian market were positive feedback traders. The study also found that while FIIs have a little impact on market performance, mutual funds have a considerable one. Nonetheless, their combined effect affects the market return.<sup>11</sup>

**Dadhich et al. (2015)** An attempt is made to investigate the volatility patterns in Indian markets by This study evaluated the effect of foreign institutional investment on the volatility of the Indian stock market and looked at FII flows in the Indian securities market. The ARCH-GARCH process was used to the study's purpose, with data spanning from 2004 to 2014. The analysis's findings validate the leverage effect

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<sup>10</sup> Gupta, Honey. (2013). An Analysis of Impact of FDI on Indian Stock Market: with special reference to BSE-SENSEX and NSE-CNX NIFTY. 4. 13-17.

<sup>11</sup> Naik, Pramod & Padhi, Puja. (2014). The Dynamics of Institutional Investments and Stock Market Volatility: Evidence from FIIs and Domestic Mutual Funds Equity Investment in India. SSRN Electronic Journal. 10.2139/ssrn.2388182.

and show that volatility is still present in the Indian securities market. It notes that the volatility of the Indian stock market is largely caused by FIIs. The statistical analysis revealed a significant coefficient of gross purchase volatility, indicating that higher fluctuations in FIIs' gross purchases could potentially impact stock index volatility more than FIIs' gross sales during the 2004-2014 period.<sup>12</sup>

**Kotishwar, A. (2015)** conducted research in order to ascertain the impact of FII and mutual fund flows on the Indian capital market. For this investigation, the data period was from 2006 to 2014. Granger causality test was applied. According to the report, there was a negative association between the nifty and inflows into mutual funds. However, throughout the research period, nifty was unaffected by the FII flows.<sup>13</sup>

**Natchimuthu. N (2016)** was the causal connections between stock market returns and FII and DII net investments. It was found that there is a one-dimensional causal relationship between DIL and FII net investments and stock market returns. There were discovered to be two-dimensional causal linkages between FII and DII net investments. This research also demonstrates how the Indian stock market responds

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<sup>12</sup> Dadhich, Gaurav & Chotia, Varun & Chaudhry, Omvir. (2015). Impact of Foreign Institutional Investments on Stock Market Volatility in India. Indian Journal of Finance. 9. 22. 10.17010//2015/v9i10/79561.

<sup>13</sup> A., Kotishwar. (2015). FII & DII FUND FLOW IMPACT OF MUTUAL FUNDS INFLOWS AND OUTFLOWS – A STUDY. Madras University Journal of Business and Finance. 3. 87-93.

to FIJ/FPI. FIT and DII had no discernible impact on stock market returns over the research period (2007 - 2015).<sup>14</sup>

**Dhingra Vaishali S, Gandhi Shailesh (2016)** study is to determine the daily links between financial institutions (FIs), stock market returns, and volatility—one of the most significant aspects of developing countries such as India. The analysis reveals significant positive correlations between FIIs and market returns as well as between FIIs and the volatility of market returns. The analysis unequivocally demonstrates the need for a deeper understanding of the factors influencing stock market returns, volatility, FPI, and their shifting composition.<sup>15</sup>

**Satendra Yadav and Yogesh Kumar (2016)** the analysis reveals that FIIs are the key component responsible for the increases in the positive returns of the majority of macroeconomic variables. It was discovered that the combined impact of stock market factors and macroeconomic variables outweighs each of their separate effects. There was a lot of volatility in the FII's flows in India. Large-scale financial variables

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<sup>14</sup> Natchimuthu, Natchimuthu. (2016). FOREIGN & DOMESTIC INSTITUTIONAL INVESTMENT AND STOCK MARKET RETURNS IN INDIA – A CAUSAL STUDY. *Global Journal of arts and management* 2249-2658 2249-264X. 6. 1-6.

<sup>15</sup> Dhingra, Sahil & Gandhi, Shailesh & Bulsara, Hemantkumar. (2016). Foreign institutional investments in India: An empirical analysis of dynamic interactions with stock market return and volatility. *IIMB Management Review*. 28. 10.1016/j.iimb.2016.10.001.



influence far too unfamiliar money streams, such as loan fees, conversion standards, expansion rates, and market position.<sup>16</sup>

**Shrinivas V. Aditya (2016)**, FII has a big influence on the Indian stock market. In 2014, they invested \$16.5 billion, and the index yielded a 32% return. When the FI withdrew Rs. 52000 crores in 2008, the sensdex produced a negative return of 52%, while the FIT produced a negative return of 26% during the 2011 European crisis. When the US Fed announced in June 2013 that it would be ending its bond-purchasing program for the first time on June 20, 2013, FII sold shares worth Rs. 2100 crore in two hours. As a result, the Indian markets fell 575 points and the rupee lost 1.5% of its value in a single trading session.<sup>17</sup>

**Solomon & Aggarwal (2017)** The future for the Indian economy is now more bleak due to the global fiscal crisis, yet peculiar liberalization and globalization gave rise to the phenomenon of foreign investments, or FDI and FII, in India. The country's economic progress is significantly influenced by international economic integration. One of the key tools for the nation's economic development is foreign finance. The two major capital investments in the world are FDI and FII. The relationship and effects of FDI, FII, and BSE Sensdex are examined using the Karl Pearson Correlation and multiple regressions. Strongly positive correlations are seen between FDI and

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<sup>16</sup> Yadav, A., & Kumar, P. (2022). The Role of FDI in the Development of the Indian Stock Market. *International Journal for Research in Applied Science and Engineering Technology*, 10(3), 1187–1192. <https://doi.org/10.22214/ijraset.2022.40738>

<sup>17</sup> Srinivas, V.. (2016). Indian Capital Market - Impact of FII on Indian Stock Market. *Indian Journal of Science and Technology*. 9. 10.17485/ijst/2016/v9i15/92104.

Sensex, while modest negative correlations are found between FII and Sensex, according to the correlation.<sup>18</sup>

**Neelam and Saba (2017)** Researchers have discovered that a significant portion of the Indian financial exchange, known as FII/FPI, has been growing significantly since 1994 and is still growing now. This exploratory work sought to determine the extent to which financial intermediaries (FIs) impact the Indian capital market. For the ten chosen investment years, secondary sources provided the data. The analysis section was predicated on the relationship between the Indian stock market and the FII/FPI. According to the report, the perception of capital market potential among local and foreign investors has shifted as a result of FII's involvement. The analysis demonstrates that a decline in investor volume is occurring as a result of FIIs' increasing significance in overall investment volume.<sup>19</sup>

**S. Raghavan & Dr. M. Selvam (2017)** The facts in the financial series of Foreign Portfolio Investment (FPI) and its determinants are the main topic of this article. Exchange rates, consumer price indexes, industrial production indexes, SENSEX, NIFTY, and foreign exchange reserve are all taken into account as determinants in this study. Commencing on June 1st, 2014, the Foreign Portfolio Investor (FPI)

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<sup>18</sup> Aggarwal, M. T., & Solomon, P. (2017). Trends and Patterns of FDI and FII in India-Implications for the Future (foreign direct investment), FII (foreign institutional investment) and sensex. GJMBR-B Classification: JEL Code: F20, F21 Trends and Patterns of FDI and FII in India-Implications for the Future. Type: Double Blind Peer Reviewed International Research Journal Publisher: Global Journals Inc, 17. [www.bseIndia.com](http://www.bseIndia.com)

<sup>19</sup> SabaAbid, S., & Jhawar, N. (2017). Impact of Foreign Institutional Investors (FIIs) on Indian Capital Market. *IOSR Journal of Business and Management*, 19, 42-46.

regime aims to standardize several pathways for foreign portfolio investments, such as Foreign Institutional Investors (FIIs), Qualified Foreign Investors, Sub Accounts, and uniform entrance requirements. It also adopts risk-based know your customer (KYC) norms. For the period of June 2014 to December 2016, monthly data on variables were gathered from the following websites: bseindia.com, stats.oecd.org, SEBI, <https://in.investing.com/indices/s-p-cnx-nifty-historical-data>, and www.rbiindia.com. Correlation, co-integration, and casual linkages are examined together with the impact of foreign portfolio investment (FPI) and their determinants.

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**Monica Singhania Neha Saini (2016)** The study is related to a group of 19 nations, of which 8 are developing and 11 are developed, and it used a variety of modeling techniques to simulate FII inflows. The fixed effect model is applied after the pooled OLS estimation method, and the Hausman (1978) tests' findings indicate whether the fixed effect or random effect model is applicable. Finally, in order to overcome the problems caused by disguised heterogeneity, we employ the GMM suggested by Arellano and Bond (1991). The focus of the examination study was the debate over whether pull or push factors determine capital inflows. It was observed that in both industrialized and developing countries, push and draw variables determine the influx of foreign money. The study found that FPI continuously monitors interest rate differentials, a nation's trade-openness policy framework, the success of its own stock market, and the returns of the US stock market, all of which are important factors. The

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<sup>20</sup> Raghavan, S., & Selvam, M. (n.d.). Article ID: IJM\_08\_03\_011 Investment and Their Effects on The Indian Stock Market. *International Journal of Management (IJM)*, 8(3), 105–115.

<http://www.iaeme.com/ijm/issues.asp?JType=IJM&VType=8&IType=3JournalImpactFactor>

study's final analytical step attempted to determine the economic significance of dynamic panel details with different determinants associated with push and pull factors in order to make sense of unexpected capital inflows. The conclusion reached was that FPI are unpredictable because they are always looking for temporary additions to their venture and are not fully set in stone.<sup>21</sup>

**Srinivasan and Kalsivani (2015)** use the autoregressive distributed lag (ARDL) bounds testing technique to examine the factors that influence foreign institutional investments (FIIs) in India. Quarterly time series data covering the period from January 2004 to December 2011 is the basis of the study. The analysis suggests that currency depreciation has a negative impact on foreign direct investment (FII) flows into India, since it has a considerable negative impact on FII inflows both in the short and long term. It also demonstrates that FII inflows to India are positively impacted in the long run by the results on the Indian equity market, but negatively in the short term. In the short run, this supports the positive feedback trading hypothesis; in the long run, it supports the negative feedback trading hypothesis. Long-term FII flows are observed to be positively and significantly impacted by US equities market returns, while short-term FII flows are positively and marginally impacted. The report also reveals that foreign institutional investors are drawn to the Indian equities markets by the dangers connected with the US equity market. On FII flows, domestic inflation has a major impact that is both favorable and negative over the long and short terms, respectively. The study found that currency rates, local inflation, returns from

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<sup>21</sup> Singhanian, M., & Saini, N. (2018). Determinants of FPI in Developed and Developing Countries. *Global Business Review*, 19(1), 187-213.

<https://doi.org/10.1177/0972150917713280>

the domestic equities market, returns from the US equity market, and risk are the main factors influencing foreign direct investment (FII) inflows into India.<sup>22</sup>

**Dr. R Siva Rama Prasad and Guntupalli Lakshmi Vishali (2017)**, growing economies like India cannot be estimated using a single metric, such as GDP. The Reserve Bank of India (RBI) recently implemented changes that let domestic pension funds to invest in mutual funds, which increase the instruments' liquidity and return. This will also intensify competition between institutional overseas investors and domestic investors.<sup>23</sup>

**Queensly Jeyanthi (2017)** this paper's analysis shows that FII flow has a significant effect on the NSE, albeit not to the same extent on NSE Sectoral Indices. The analysis demonstrates that when foreign investments rise, the stock market rises, and when foreign trade investors are net sellers, the stock market falls. The findings indicate that different NSE stock indices and FIIs have a positive association, albeit the strength of the relationship isn't very strong during the January 2008–June 2014 timeframe. It demonstrates that there is a weak correlation between the FII and other sectoral indicators.<sup>24</sup>

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<sup>22</sup> Srinivasan, P., & Kalaivani, M. (2015). Determinants of Foreign Institutional Investment in India: An Empirical Analysis. *Global Business Review*, 16(3), 364-376. <https://doi.org/10.1177/0972150915569925>

<sup>23</sup> Rama, S., Research, P., Lakshmi, G., Research, V., Siva, R., Prasad, R., & Vishali, G. L. (2017). *Impact Factor: 5.2 IJAR*. 3(12), 362–367.  
[www.allresearchjournal.com](http://www.allresearchjournal.com)

<sup>24</sup> Jeyanthi, Queensly. (2016). *IMPACT OF FIIS ON NATIONAL STOCK EXCHANGE OF INDIA. SOCIO ECONOMIC VOICES*.

**Das Lipsa and Mahapatra R. P. (2017)**, FPI has a favorable effect on the movement of the Indian stock market. As a result, the hypothesis—that is, that FIIs positively affect the BSE sensitivity index—is accepted. In addition, there are other factors that influence stock market indexes, but FPI is unquestionably one of them..<sup>25</sup>

**Kalifa and Vijaya Srinivasa (2018)** carried out research on the "Impact of FIIs on Sensex movements..." Examining the effect of FIIs on the Indian capital market was the main goal. The analysis also provides FIT patterns in India, and an attempt was made to determine the variables influencing FIT movement in India using the data..<sup>26</sup>

**Dr. R. Human Chalapathy and Kavya V. (2018)**, focused on the key factors that influence FIT investment inflows into the Indian capital market. Finding out the factors, trends, and patterns that international investors consider when making decisions about investments in the Indian capital market was the aim of this study. According to the analysis, FII investments helped the stock market create an increasing pattern overall. FU/FPI speculation increased by almost 25% annually, and FII were more committed to investing in particular investment sectors where significant returns could be obtained. The analysis reveals that FII/FPI projects have helped the market function and grow over a longer period of time..<sup>27</sup>

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<sup>25</sup> Das, Lipsa & Mahapatra, RP. (2017). FOREIGN INSTITUTIONAL INVESTORS AND INDIA'S STOCK MARKET BEHAVIOUR.. International Journal of Advanced Research. 5. 1203-1217. 10.21474/IJAR01/5639.

<sup>26</sup> Nalini, R., & Shyamala, M. (2019). IMPACT OF FII ON INDIAN STOCK MARKET (Issue 6). [www.eprawisdom.com](http://www.eprawisdom.com)

<sup>27</sup> Macroeconomic Dynamics of Foreign Institutional Investment: An Indian Perspective. (n.d.). [www.iiste.org](http://www.iiste.org)

**Shah, Dr. Mayur (2018)** This study looked at stock market movement over a given investment period and the net investment of FII. The review's objectives were to identify trends in FI investment, provide examples of the entrance of foreign capital, and monitor changes in the stock market's behavior, especially with regard to the Nifty index. Regression analysis tools and association coefficients were used in this system to analyze net FII/FPI venture and CNX Nifty for the selected timeframe. Researchers discovered that during the chosen years, PII flows were increasing. The CNX Nifty discovered a generally upward pattern in the quantity of investments. FII investments have a very slight impact on the Nifty market. The performance of the Nifty CNX for its securities swaps was excellent. Changes were observed in the Nifty CNX stock market and FI investment directly contributed to the Nifty CNX's improved growth.<sup>28</sup>

**Nalini R and G Shyamala (2019)** The study, "Impact of FIL on Indian Stock Market Related to Market Capitalization, Demat Trading, Trading Value, Average Daily Turnover, and Internet Trading in the NSE," was carried out between 2000 and 2018. The review's conclusions show that FIT has a significant impact on certain NSE markets. Thus, it can be said that FII has a favorable effect on the Indian stock market.<sup>29</sup>

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<sup>28</sup> Garg, Atin and Chawla, KK, A Study of Trend Analysis and Relationship between Foreign Institutional Investors (FIIs) & Domestic Institutional Investors (DIIs) (May 22, 2015). Available at SSRN: <https://ssrn.com/abstract=2623465> or <http://dx.doi.org/10.2139/ssrn.2623465>

<sup>29</sup> IMPACT OF FOREIGN INSTITUTIONAL INVESTMENT'S ON SENSEX MOVEMENTS. (n.d.). <http://iaeme.com/Home/journal/IJMET1010editor@iaeme.com><http://iaeme.com/Home/issue/IJMET?Volume=9&Issue=1><http://iaeme.com>

**Mohit Jain (2020)** the growth of the economy is impacted, either directly or indirectly, by FDI and FII investments made in the Indian stock market or economy. The contributions of FII have changed how the Indian stock market has developed, and it is important to take into account how FII has affected the SENSEX and NIFTY stocks. Massive FII money inflows into the nation generate a lot of demand for rupees, which prompts the RBI to inject more of the currency into the market. Investing in developing financial stock markets generates profits for FIIs. Stocks rise as a result of FII purchases, while the stock market's downward trajectory is indicated by their sales. For the average small-scale investor, this poses challenges.<sup>30</sup>

**Aminul Islam Mollah, (2021)** In this study, we examine the literature to determine how financial development draws FDI in support of a nation's real sector development that is sustainable. Literature is not the area's primary concentration. Consequently, we do not restrict our evaluation and search to any particular period, database, or journal category. The literature contains the theoretical reasoning and current empirical data. According to our research, one of the key factors luring foreign direct investments (FDIs) to a nation is the growth of its banking sector. The development of the financial industry is supposed to serve as both a good channel for allocating resources for current investors and a sign of trust and kindness to new potential investors. Few scholars, however, discovered that foreign direct investments (FDIs) are more likely to occur in nations with underdeveloped financial systems. This

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<sup>30</sup> Gupta, L., Singh, K. J., & Jain, S. (2022). Interrelation between the Institutional Investors and the Union Budget in the Indian Stock Market. *Ramanujan International Journal of Business and Research*, 7(1), 10–20. <https://doi.org/10.51245/rijbr.v7i1.2022.439>



phenomenon may be caused by the coexistence of risk-averse domestic entrepreneurs and risk-taking foreign investors.<sup>31</sup>

**P.C. Biswal and Anshul Jain, (2022)** numerous asset classes have been the subject of research establishing the impact of trading volume on volatility. Research on the impact of trader type has produced contradictory results. One significant group of traders in Indian equities is made up of Foreign Institutional Investors (FII). This study investigates the impact of FII trade volume on the volatility of particular equities using data on trade volume. Trade volume has been found to have a significant impact in a wide range of equities when it is utilized as an exogenous regressor in the EGARCH specification of daily volatility. According to our research, FII purchases and sales of particular stocks have the effect of lessening or enhancing volatility.<sup>32</sup>

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<sup>31</sup>Islam, M. A., Liu, H., Khan, M. A., Islam, M. T., & Sultanuzzaman, M. R. (2021). Does foreign direct investment deepen the financial system in Southeast Asian economies?. *Journal of Multinational Financial Management*, 61, 100682.

<sup>32</sup> nshul Jain & P. C. Biswal, 2022. "[FII Trading Pressure and Stock Volatility in India](#)," [India Studies in Business and Economics](#), in: Naoyuki Yoshino & Rajendra N. Paramanik & Anoop S. Kumar (ed.), [Studies in International Economics and Finance](#), pages 633-646, Springer.

### **2.3 Research Gap**

The research gap in the context of the thesis "FPI Impact on the Indian Stock Market" concerning the BSE Sensex and Nifty 50 indices lies in the limited examination of the comprehensive and long-term effects of Foreign Portfolio Investment (FPI) on these key market indicators. While existing literature has explored the relationship between FPI and the Indian stock market, there remains a notable gap in analysing the sustained impact of FPI on the BSE Sensex and Nifty 50 indices over extended periods. Current studies often focus on short-term fluctuations in stock prices or trading volumes in response to FPI activities, without delving into the broader market dynamics influenced by FPI inflows and outflows.

### **2.4 Conclusion**

In conclusion, the literature review on the impact of Foreign Portfolio Investment (FPI) on the Indian stock market has provided a comprehensive understanding of the various factors, mechanisms, and dynamics at play in this relationship. Through an exploration of diverse scholarly works, empirical studies, and theoretical frameworks, several key insights have included. In summary, the literature review has provided a comprehensive overview of the existing research on the impact of FPI on the Indian stock market. While significant progress has been made in understanding this complex relationship, there remain gaps, inconsistencies, and unanswered questions that warrant further investigation. By building upon the insights gleaned from the literature, this study seeks to contribute to a deeper understanding of the dynamics of FPI and its implications for the Indian financial markets.

# CHAPTER-3

## RESEARCH METHODOLOGY

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# RESEARCH METHODOLOGY



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### **3.1 Introduction**

FII's are referred to as "fair weather friends" since they enter an investment with the hope of earning a large short-term return and go as soon as there is any indication that the market may be unstable. FII's may remove their money to take advantage of profitable chances in other markets, even though the financial conditions in the Indian market are steady. The extremely speculative nature of FII's investing could make the market more volatile. According to Raju and Ghosh (2004), the SEBI Annual Report, and other sources, The Indian stock market is considered to be one of the most volatile markets in the world. The main reason for this volatility is attributed to the presence of Foreign Institutional Investors (FII's). Therefore, we expect that the FII Inflows will increase market volatility.

#### **Foreign Institutional Investors (FII's)**

Entities incorporated outside India, registered with SEBI and intending to invest in Indian securities are known as Foreign Institutional Investors (FII's) in India. These include foundations, endowments, university endowments, mutual funds, mutual funds, asset management companies, and charitable trusts.

#### **Foreign Institutional Investments (FII)**

Investment made via a nation's stock exchanges by foreign institutional investors. They buy and sell securities on the market as part of their investment activities.

#### **Stock Market Return**

It is a measure of the long-term performance of the stock market. Calculated using changes in stock index prices. The value of a stock index depends on changes in the underlying stocks that make up the index. These returns can be positive or negative and are not constant.

Report on FII's and Corporate Governance (2016), FII's invest in securities with strong corporate performance, and their presence would boost those securities' performance (Huang and Zhu 2012). Therefore, it is expected that the FII's' preferences may likewise persuade private investors to trade the securities that the FII's prefer. Increased trading volume, market turnover, and maybe higher market liquidity would result from the additional funding influx in the form of FII.

FII create several strategies that range from market to market from the industry. The various strategies used by FIIs include herding behavior in the Indian market (Tayde and Rao 2011), price pressure behavior of FIIs identified by Froot et al (2001), positive feedback trading in the Korean market (Choe, et al. 1998), negative feedback trading in the Turkish market (Adabag and Ornelas 2005), and no feedback trading (Lakonishok, et al. 1992) in the US market. By analyzing the existence of the feedback trader hypothesis, the price pressure hypothesis, and herding behavior in the Indian market in relation to FII flow, this study aims to investigate the strategies of FIIs.

It has been observed that FIIs contributed to the 1997 Asian financial crisis (Bonser-Neal et al., 2002) as well as numerous other stock market collapses in developing nations (Bandyopadhyay, 2006). The largest investor group in India, foreign institutional investors, makes significant financial investments in the Indian stock market. As a result, the market can move in lockstep with FII activity. During the post-liberalization era, particularly starting in 2001, there has been a noticeable rise and downward tendency in market movements. Depending on the stages of market movements, FIIs' actions and tactics may vary.

The objective of the present study is to determine how FII flows affect market returns and volatility at different stages of market volatility. The institutes founded outside of India are known as FIIs. Thus, both domestic and foreign variables may influence their investing operations.

Foreign investors invest in India due to high expected returns, low market risk, benefit from exchange rate fluctuations, low expected returns and domestic market growth potential. The objective of this study is to identify the factors affecting the flow of FIIs in the Indian market.

### **3.2 Title of the study**

Title of the study is:

“A Comprehensive Study of the Impact of Foreign Portfolio Investments on Indian Stock Market (BSE-NSE)”

### 3.3 Objectives of the Study

- The overall objective of this study is to determine the impact of foreign institutional investment on the Indian stock market. The specific objectives of the research are:
- To examine the impact of foreign institutional investment on stock prices and market returns in the Indian stock market.
- Evaluate the trading strategies of FIIs in the Indian stock market.
- To examine the determinants of investment in India by foreign entities.

### 3.4 Hypothesis of the study

- **Null hypothesis (H0):** There is no significant correlation between Foreign Portfolio Investments on the stock prices in the Indian stock market.  
**Alternate hypothesis (H1):** There is significant correlation between Foreign Portfolio Investments on the stock prices in the Indian stock market.
- **Null hypothesis (H0):** There is no significant relationship between Foreign Portfolio Investments on the stock prices in the Indian stock market.  
**Alternate hypothesis (H1):** There is significant relationship between Foreign Portfolio Investments on the stock prices in the Indian stock market.

### 3.5 Types of research

Although quantitative research is the main research approach, descriptive research design uses a range of qualitative and quantitative data to gather information in order to create precise predictions about a given problem or hypothesis. Descriptive research designs, as a survey tool, assist researchers in identifying traits within their target market or specific demographic. To help in decision-making, these traits in the population sample can be found, noted, and assessed. The present study represent descriptive research design. Descriptive research was conducted to describe the impact of FPI on Indian stock market.

### 3.6 Population of the study

This study refers to impact of foreign portfolio investment on Indian stock market (BSE-NSE). As of Jan. 30, 2024, the BSE had 5,315 listed firms, whereas the rival NSE had 2,266 as of Dec. 31, 2023. Almost all the significant firms of India are listed on both exchanges. The BSE is the older stock market, and the NSE is the largest in volume.

### 3.7 Sampling design

For proposed research convenient sampling design is use to select the stock from BSE and NSE. There are more stocks in BSE and NSE but researcher select only two stocks BSE SENSEX & NIFTY 50. FPI net investments are compared to BSE and NSE stock prices.

Population	Indian Stock Market
Sampling unit	BSE - NSE
Sampling techniques	Convenience Sampling
Sample size	BSE SENSEX NIFTY 50

### 3.8 Methods of data collection

In the present study secondary records or data have been used. These data will collect from different majors such as research papers, referred journal, various business and economic news paper, literature review connected to the topic, books and the publication and review bulletins of regulatory bodies and institutions such as NSDL, CDSL,BSE,NSE.

### 3.9 Tools & techniques of data collection

Data analysis Research methods are simple descriptive statistical tools that are appropriate and necessary for survey research. The following statistical tools are used for data analysis:

1. Trend analysis will be used for FII investment and stock market prices of BSE NSE stocks for April 2011 to March 2023 on the basis of descriptive statistical analysis.
2. Correlation study will help to assess the relationship between two factors/variables.
3. A regression analysis model is used to assess the significant results of independent variable FII investment on the dependent variable market value of public and private banks.
4. The F-test is used to test the overall significance of the regression model.
5. T-test is used to test the relationship between FII investment and bank stock prices.



The yearly data of FII/FPI net equity investments and NSE BSE index has been classified and summarized. Results of data can be interpreted on the basis of trend analysis and application of Regression analysis model. These tools are as follows:

- **Mean:** It is the most commonly used and easily understood measure of central tendency. Another name is "average". The total number of observations is calculated by dividing the total number of observations. In this study the average quarterly FII/FPI is determined using net investment data. It is represented by  $\bar{x}$ .
- **Median:** It speaks of the middle value of any series or set of observations. Stated otherwise, it refers to the item's value inside a set of observations, grouped either in ascending or descending order, with an equal number of items above or below.  $M$  is used to indicate it.
- **Standard Deviation:** The positive square root of the average of the squared deviations subtracted from the mean is its definition. It gauges the degree of volatility or the deviation of the data from the true mean. In this study, the quarterly volatility of FII investments is measured.  $\sigma$  displays it.
- **Range:** It is the variation between any observation's highest and lowest value. Here, the range is determined by comparing the monthly average of FII/FPI investments with the NSE BSE index's biggest and smallest values.
- **Karl Pearson's Coefficient of Correlation:** It asserts that changes in FII/FPI Investments, the other variable, are correlated with changes in NIFTY Bank Index, the first variable, either positively or negatively. It can be shown as the covariance ratio multiplied by the product of the two variable series' individual standard deviations.
- **Coefficient of Determination ( $r^2$ ):** Calculates how much change in one variable explains the change in another variable. Range is 0 to 1. Range is 0 to 1. If the value of  $r^2$  is equal to 1, then all changes in one variable can be explained by changes in the other variable. If  $r^2$  is equal to 0, it indicates that the independent variable (FII investment) has no effect on the dependent variable (i.e. stock price of NSE BSE corporate index).
- **Regression Analysis Model:** It's a statistical instrument meant to be utilized in estimation processes. It is a collection of presumptions and mathematical formulas used to explain a situation in the actual world. A mathematical technique called regression analysis is used to determine the value of the dependent variable (a variable that is related to another independent variable) based on the values of the dependent and

independent variables. The NIFTY Bank Index firms are the dependent variable in this research study, while FII/FPI investments are the independent variable. The following is the equation of the regression line that fits the current data:  $Y = a + Px$

- **Testing the Significance of Regression Coefficient (t-test):** One of the most important statistical tests in regression analysis is to determine whether the regression coefficient is zero. The regression coefficient is 0, which represents the null hypothesis for this analysis. This shows that there is no correlation between FII/FPI investments and Nifty Bank Index.
- **Testing overall Significance of Regression Model (F-test):** It gauges the regression model's overall significance. A single regression coefficient test and a single predictor are provided by regression analysis. To determine if a linear regression model fits the data better than a model without any independent variables, apply the F-test. It investigated whether the FI/FPIs' investment activity, as indicated by the regression model, could significantly predict the volatility of the NIFTY Bank Index or other stock indexes. R-squared does not equal zero and there is statistically significant connection between these two variables if the overall F-test is significant.

### 3.10 Scope of the study

- Analyse how FPI inflows or outflows influence stock prices of individual securities or market indices.
- Examine the overall market returns concerning FPI activities.
- To see whether the activities of FPIs increase or decrease the volatility of the Indian stock market.
- Assess the impact of FPIs on the market risk profile.
- To examine the relationship between FPI activities and market returns.
- Analyze how the activities of FPIs affect the behavior of domestic and foreign investors in the Indian stock market.
- Understand investor sentiments and reactions to FPI trends.
- Investigate whether the impact of FPI is more pronounced in the short term or if it has lasting effects on the Indian stock market.

## **3.11 Chapters plan**

### **Chapter 1 Introduction**

Introduction to the importance of Foreign Portfolio Investment (FPI) in shaping the Indian stock market landscape. We briefly outline the objectives and scope of the study and highlight the important role of FPIs in driving market dynamics.

### **Chapter 2 Literature Review**

Review existing literature on FPI's impact, highlighting key findings, methodologies, and gaps in research. Provide a theoretical framework to guide the empirical investigation.

### **Chapter 3 Research Methodology**

Detail the research design, data sources, and statistical tools employed for analysis. Discuss the rationale behind selecting specific variables and timeframes, ensuring a robust and comprehensive investigation.

### **Chapter 4 Data Analysis & Interpretation**

- Detail the sources of data, including FPI inflows, stock market indices (BSE and NSE), sectoral data, and relevant macroeconomic indicators. Discuss the time frame and rationale for selecting specific variables.
- Descriptive Statistics: Provide a snapshot of the data through descriptive statistics. Highlight key trends, central tendencies, and variations in FPI inflows, stock prices, and sectoral performances.
- Correlation Analysis: Explore the relationship between FPI inflows and market indices using correlation coefficients. Examine the strength and direction of correlation, shedding light on potential associations.
- Volatility Analysis: Investigate the impact of FPI on market volatility. Utilize statistical measures to assess how FPI inflows contribute to fluctuations in stock prices and overall market stability.
- Conclusion: Summarize the main outcomes of the data analysis, emphasizing key insights into how FPI impacts the Indian stock market. Discuss the implications for investors, policymakers, and future research directions.

## **Chapter 5 Conclusion, Findings & Suggestions**

Key findings are summarized and the overall impact of FPI on the Indian stock market is highlighted. We focus on the implications for investors, policy makers and market participants. Avenues for future research in this dynamic area are suggested.

### **3.12 Limitations of the study**

- The present study analyses the impact of FII flow on Indian stock market.
- The result of the study is applicable to the period selected for the study, but here the study covers relatively long period. Hence, the study may have significance in the future period also.
- The analysis based on daily data is made only from 2011 April to 2023 March.
- The impact of FII flow on debt market is not taken for analysis.
- The researcher considered only other BSE and NSE indicators for the study.
- Since the information required for this study is based on secondary data, which is a mixture of journals, books, magazines, websites and links, any flaws, mistakes or irrelevant points in it will also affect the study.
- Due to time constraints, this study is based on FII/FPI investments and foreign portfolio investment which has a direct impact on the Indian economy, has not been used in this study.

**CHAPTER 4**  
**DATA ANNALYSIS & INTERPRETATION**



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## **4.1 Introduction**

The financial markets are intricate ecosystems that are influenced by many different factors, such as economic policies, geopolitical events, and investor sentiment. In regard to the Indian stock market, the performance of the two primary stock market indices, the BSE Sensex and NSE Nifty 50, as well as Foreign Portfolio Investments (FPI), which are represented by net investments by foreign investors, have been constantly watched and examined. This paper conducts a comprehensive assessment of the dynamic relationship between FPI net investments and the movements of these benchmark indices, spanning a sizable time period from the financial year 2011–12 to 2023–24.

### **FPI Net Investments**

Capital flows from overseas investors into the debt and stock markets of a host nation are represented by overseas Portfolio Investments (FPI), which are an essential part of the global financial scene. FPI is essential in determining the stock market's overall dynamics, valuation, and liquidity in India. Foreign investor confidence (or lack thereof) is reflected in the net investments made by foreign investors, which makes the FPI an important indicator of global sentiment.

### **BSE Sensex and NSE Nifty 50 Indices**

The Sensex on the Bombay Stock Exchange (BSE) and the Nifty 50 on the National Stock Exchange (NSE) are significant indicators of the state and performance of the Indian stock market. The BSE Sensex is the weighted average of thirty stocks that are carefully selected and listed on the Bombay Stock Exchange. These stocks cover a range of industries. The NSE Nifty 50 index simultaneously displays the performance of fifty large-cap companies that are listed on the National Stock Exchange. Both indexes provide information on market movements, investor confidence, and overall

economic conditions, making them crucial benchmarks for investors, decision-makers, and market analysts.

One of the most well-known stock market indicators in India is the BSE Sensex, sometimes just called the Sensex. The performance of the top 30 companies listed on the Bombay Stock Exchange (BSE), which represent different sectors of the Indian economy, is tracked by this benchmark index. The Sensex was created in 1986 and is used as a gauge for the general health and mood of the Indian stock market. Variations in the Sensex, which are closely monitored by analysts, policymakers, and investors, are a reflection of shifts in the total market value of the stocks that make up the index and offer perceptions into general market patterns and investor mood.

The National Stock Exchange (NSE) of India's top 50 firms' performance is represented by the benchmark stock market index known as the NSE Nifty 50, or simply Nifty 50. These businesses, which cover a range of Indian economic sectors, were chosen on the basis of variables like market capitalization, liquidity, and sector representation. The Nifty 50 index is a widely used tool by investors, analysts, and policymakers to assess the overall performance of the Indian equities market as well as the nation's investment trends and economic well-being.

This section examines the impact of FII flow on stock market return. It is examined by developing a multiple regression model based on market return as dependent and FII flow as independent variable.

FPI net investment in equity debt and hybrid is from 2011-12 to 2023-24 is as below shown in table 4.1

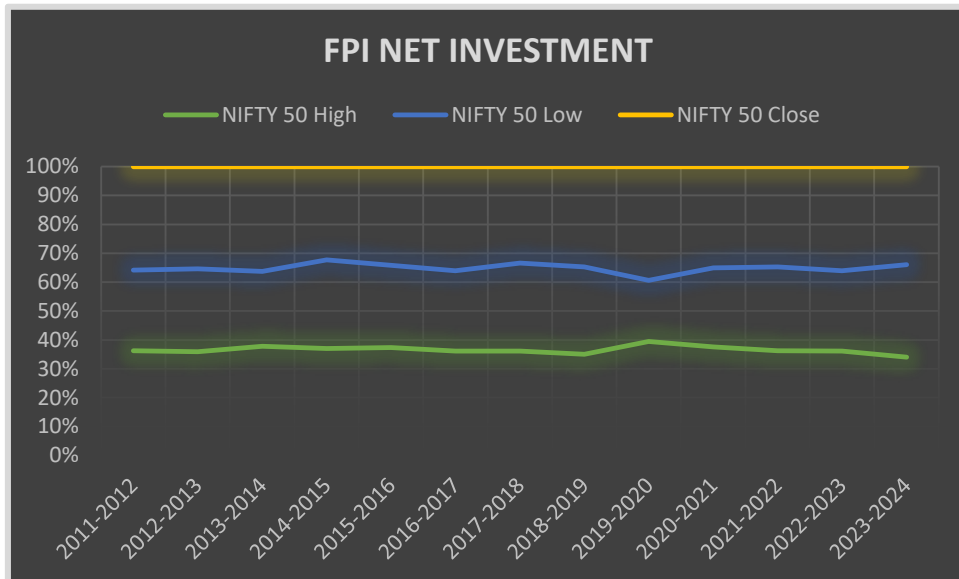


## 4.2 FPI NET INVESTMENT

Table 4.1

FPI NET INVESTMENT				
Year	Equity	Debt	Hybrid	Total
2011-2012	43737.6	49987.9	0	93725.5
2012-2013	140032.6	28334.4	0	168367
2013-2014	79708.68	-28059.89	0	51648.79
2014-2015	111332.59	166127.09	0	277459.68
2015-2016	-14171.57	-4003.76	0	-18175.33
2016-2017	55702.67	-7291.64	0	48411.03
2017-2018	25634.19	119035.74	10.29	144680.22
2018-2019	-87.73	-42355.97	3514.24	-38929.46
2019-2020	6152.26	-48710.23	7697.63	-34860.34
2020-2021	274031.96	-50443.62	10247.09	233835.43
2021-2022	-140009.6	1628.53	3498.41	-134882.66
2022-2023	-37631.57	-8937.74	-181.71	-46751.02
2023-2024	179251.99	108481.58	12039.98	299773.55

**Figure 4.1**



### **1. Trend Analysis:**

- Overall, there's been significant variation in FPI net investment over the years.
- From 2011-2012 to 2015-2016, there's a mix of positive and negative values indicating fluctuations.
- From 2016-2017 onwards, there's a trend of predominantly positive FPI net investment, with some exceptions.

### **2. Segment Analysis:**

- Equity: Shows considerable variation, with large positive values in some years (e.g., 2012-2013, 2014-2015, 2020-2021, 2023-2024) and negative values in others (e.g., 2015-2016, 2018-2019, 2021-2022).

- Debt: Displays a mix of positive and negative values throughout the period, with substantial investments in certain years (e.g., 2014-2015, 2017-2018, 2023-2024) and disinvestments in others (e.g., 2013-2014, 2018-2019, 2019-2020, 2021-2022).
- Hybrid: Historically negligible, with minimal values except in recent years (2020-2021, 2021-2022, 2022-2023, 2023-2024).

### **3. Yearly Performance Analysis:**

- 2011-2012 to 2013-2014: The period shows a mixed bag of investments across equity and debt, with no hybrid investments recorded.
- 2014-2015 to 2015-2016: Witnessed a decline in overall investments, primarily due to negative values in equity.
- 2016-2017 to 2017-2018: Notable increase in overall investments, particularly in equity and debt.
- 2018-2019 to 2019-2020: Overall decrease mainly attributed to negative values in equity and debt.
- 2020-2021 to 2023-2024: Remarkable surge in overall investments, particularly in equity, with hybrid investments gaining significance in recent years.

### **4. Factors Influencing Trends:**

- Economic Conditions: FPI is greatly impacted by national and international economic policies as well as market sentiment.
- Regulatory Changes: Alterations in regulations governing FPI, tax policies, and market entry barriers influence investment decisions.

- **Market Performance:** Performance of equity and debt markets, as well as currency exchange rates, affect investment choices.
- **Political Stability:** Political stability and geopolitical developments play a role in determining investor confidence.

## **5. Forecast and Recommendations:**

- Continued monitoring of economic indicators, market trends, and regulatory changes is crucial.
- Diversification strategies to attract FPI across various segments could be beneficial.
- Enhancing transparency, stability, and investor-friendly policies can bolster FPI inflows.
- Addressing concerns regarding taxation, compliance, and ease of doing business can attract long-term investments.

## **6. Conclusion:**

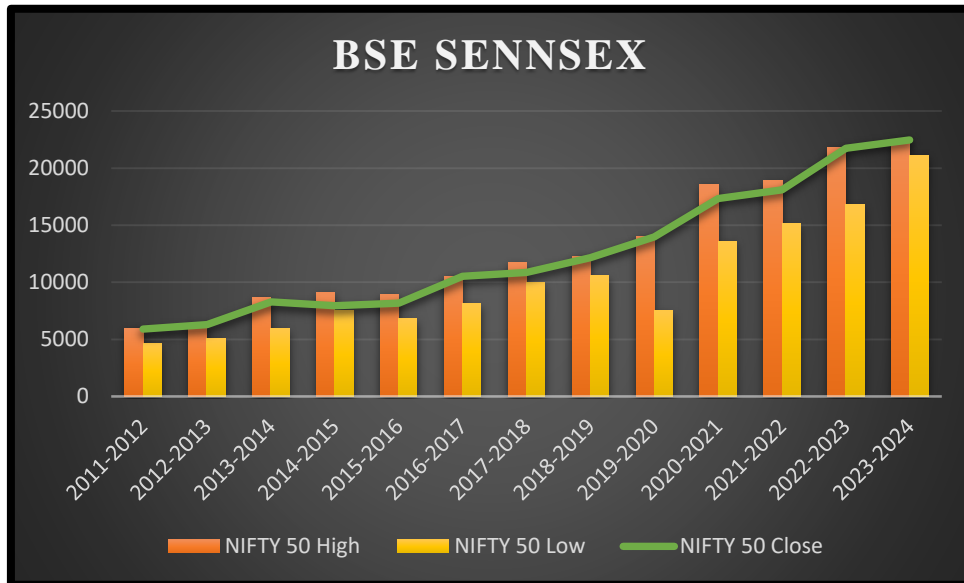
- FPI net investment exhibits volatility but demonstrates resilience and growth potential.
- Understanding the underlying factors and implementing strategic measures can capitalize on opportunities and mitigate risks in FPI inflows.

### 4.3 BSE SENSEX STOCK INDEX

**Table 4.2**

<b>BSE SENSEX</b>			
<b>Year</b>	<b>High</b>	<b>Low</b>	<b>Close</b>
2011-2012	19811.14	15135.86	17404.2
2012-2013	20203.66	15748.98	18835.77
2013-2014	22467.21	17448.71	22386.27
2014-2015	30024.74	22197.51	27957.49
2015-2016	29094.61	22494.61	25341.86
2016-2017	29824.62	24523.2	29620.5
2017-2018	36443.98	29241.48	32968.68
2018-2019	38989.65	32972.56	38672.91
2019-2020	42273.87	25638.9	29468.49
2020-2021	52516.76	27500.79	49509.15
2021-2022	62245.43	47204.5	58568.51
2022-2023	63583.07	50921.22	58991.52
2023-2024	74151.27	58793.08	74085.99

**Figure 4.2**



### 1. Trend Analysis:

- The BSE Sensex shows an overall upward trend over the years, with occasional fluctuations.
- From 2011-2012 to 2014-2015, there's a gradual increase in the index, reaching a peak in 2014-2015.
- A slight decline is observed from 2015-2016 to 2019-2020, followed by a significant rebound in 2020-2021 and continued growth thereafter.

### 2. Yearly Performance Analysis:

- **2011-2012 to 2014-2015:** Witnessed steady growth in the index, reflecting positive market sentiment and economic stability.

- **2015-2016 to 2019-2020:** Experienced some volatility, with the index showing fluctuations amidst global economic uncertainties, domestic policy changes, and geopolitical tensions.
- **2020-2021:** Notable surge in the index, likely fueled by liquidity infusion, recovery optimism, and favorable monetary policies amidst the COVID-19 pandemic.
- **2021-2022 to 2023-2024:** Continued growth, albeit at a slower pace, reflecting sustained investor confidence, economic recovery, and positive corporate earnings.

### 3. **High, Low, and Close Analysis:**

- **High:** Represents the maximum value of the index during the respective years, indicating peak market performance.
- **Low:** Reflects the minimum value of the index, highlighting periods of market correction or downturn.
- **Close:** Indicates the final value of the index at the end of the trading period, providing insights into overall market sentiment.
- Analyzing these values provides a comprehensive understanding of market behavior, investor sentiment, and volatility levels throughout the years.

### 4. **Factors Influencing Trends:**

- **Economic Indicators:** Investor confidence and market performance are influenced by factors such as industrial production, GDP growth, inflation rates, and interest rates.

- **Monetary Policies:** Central bank policies, such as interest rate decisions and liquidity measures, impact market liquidity and investor behavior.
- **Global Market Dynamics:** International economic trends, geopolitical events, and trade relations affect market sentiments and capital flows.
- **Domestic Policy Environment:** Government policies related to taxation, regulation, and reforms shape market expectations and investment decisions.

## 5. Forecast and Recommendations:

- Making educated investing selections requires constant observation of corporate results, worldwide events, and economic indicators.
- Diversification among industries and asset types can reduce the risks brought on by market volatility.
- Long-term investment strategies aligned with financial goals can capitalize on the potential of equity markets while minimizing short-term fluctuations.
- It is necessary to regularly assess risk management plans and portfolio allocations in order to adjust to shifting market conditions.

## 6. Conclusion:

- Over time, the BSE Sensex has demonstrated growth potential and resilience, which is indicative of both investor confidence and India's changing economic situation.



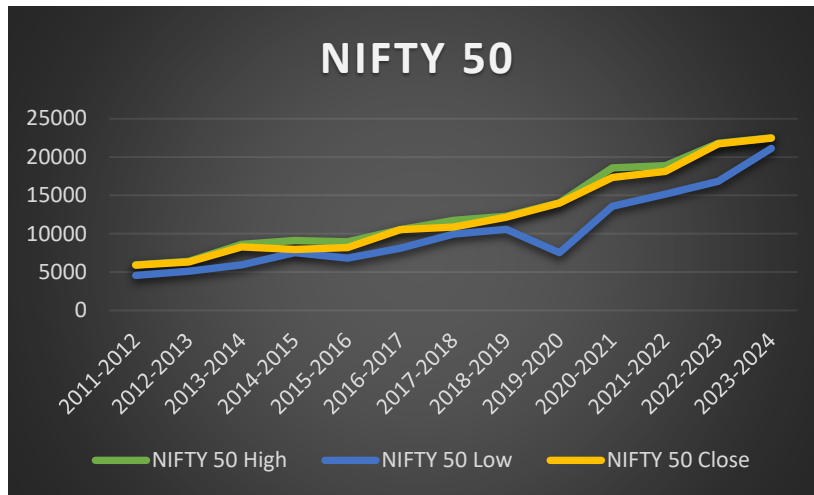
- Investors in the Indian equity market can reduce risks and seize opportunities by comprehending the fundamental causes of market patterns and putting safe investment techniques into practice.

#### 4.4 NSE NIFTY 50 STOCK INDEX

**Table 4.3**

<b>NIFTY 50</b>			
<b>Year</b>	<b>High</b>	<b>Low</b>	<b>Close</b>
2011-2012	5965	4588	5905.1
2012-2013	6415	5118	6304
2013-2014	8626	5933	8282.7
2014-2015	9119	7539	7946.35
2015-2016	8968	6825	8185.8
2016-2017	10552	8133	10530.7
2017-2018	11760	9951	10862.55
2018-2019	12293	10583	12168.45
2019-2020	14024	7511	13981.75
2020-2021	18604	13596	17354.05
2021-2022	18887	15183	18105.3
2022-2023	21801	16828	21731.4
2023-2024	22497	21137	22474.05

**Figure 4.3**



### 1. Trend Analysis:

- The NIFTY 50 index demonstrates an overall upward trajectory over the years, with intermittent periods of volatility.
- From 2011-2012 to 2014-2015, the index shows steady growth, reaching new highs.
- Periods of volatility are observed from 2015-2016 to 2019-2020, influenced by domestic and global economic factors.
- Subsequent years show a recovery and continued upward trend, with record highs achieved in 2023-2024.

### 2. Yearly Performance Analysis:

- **2011-2012 to 2014-2015:** Witnessed consistent growth, reflecting positive investor sentiment, economic expansion, and corporate earnings.

- **2015-2016 to 2019-2020:** Experienced fluctuations due to factors such as global economic slowdown, domestic policy reforms, and geopolitical tensions.
- **2020-2021:** Notable rebound from pandemic-induced lows, driven by stimulus measures, liquidity infusion, and recovery optimism.
- **2021-2022 to 2023-2024:** Continued growth, supported by improving economic fundamentals, favorable policy environment, and robust corporate performance.

### 3. **High, Low, and Close Analysis:**

- **High:** Represents the peak value of the index during the respective years, indicating periods of strong market performance.
- **Low:** Reflects the minimum value of the index, highlighting phases of market correction or downturn.
- **Close:** Indicates the final value of the index at the end of the trading period, offering insights into overall market sentiment and investor behavior.
- Analyzing these values provides a comprehensive picture of market dynamics, volatility levels, and investor sentiment throughout the years.

### 4. **Factors Influencing Trends:**

- **Economic Indicators:** GDP growth, inflation rates, industrial production, and monetary policies impact market sentiment and investment decisions.

- **Corporate Earnings:** Performance of companies listed in the NIFTY 50 index influences investor confidence and stock valuations.
- **Global Market Trends:** International economic developments, trade relations, and geopolitical events affect capital flows and market sentiments.
- **Policy Environment:** Government policies related to taxation, regulation, and economic reforms shape market expectations and investment behavior.

## 5. Forecast and Recommendations:

- Continuous monitoring of economic indicators, corporate earnings, and global developments is crucial for informed investment decisions.
- Diversification among industries and asset types can reduce the risks brought on by market volatility.
- Long-term investment strategies aligned with financial goals can capitalize on the growth potential of the NIFTY 50 index while navigating short-term fluctuations.
- It is necessary to regularly assess risk management plans and portfolio allocations in order to adjust to shifting market conditions.

## 6. Conclusion:

- The NIFTY 50 index reflects the resilience and growth potential of the Indian equity market, driven by improving economic fundamentals and investor confidence.

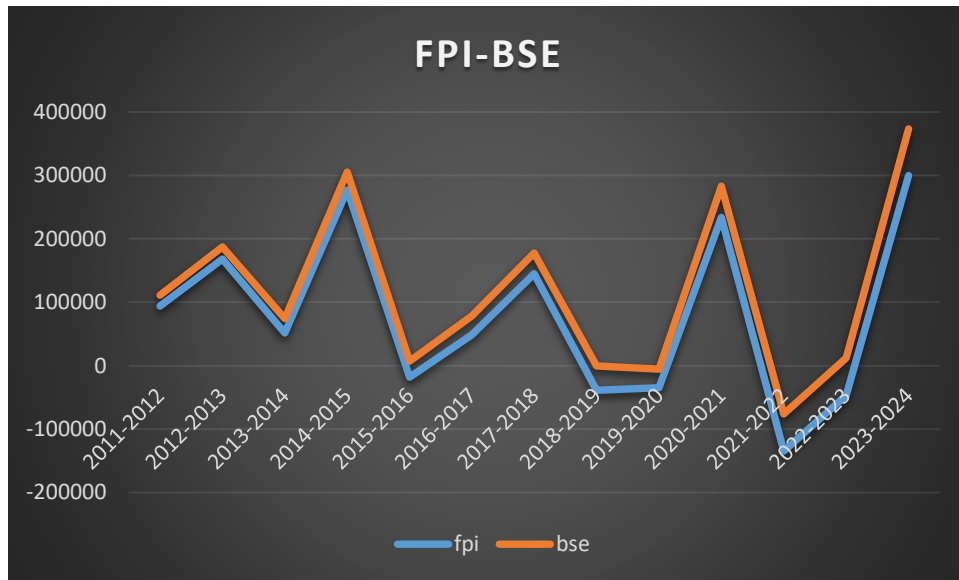
- Understanding the underlying factors influencing market trends and implementing prudent investment strategies can help investors harness opportunities and manage risks effectively in the NIFTY 50 segment.

#### 4.5 FPI net investment as compare to BSE SENSEX

**Table 4.4**

<b>Year</b>	<b>FPI</b>	<b>BSE</b>
2011-2012	93725.5	17404.2
2012-2013	168367	18835.77
2013-2014	51648.79	22386.27
2014-2015	277459.68	27957.49
2015-2016	-18175.33	25341.86
2016-2017	48411.03	29620.5
2017-2018	144680.22	32968.68
2018-2019	-38929.46	38672.91
2019-2020	-34860.34	29468.49
2020-2021	233835.43	49509.15
2021-2022	-134882.66	58568.51
2022-2023	-46751.02	58991.52
2023-2024	299773.55	74085.99

**Figure 4.4**



### 1. FPI (Foreign Portfolio Investment):

- Represents the net investment made by foreign investors in the Indian financial markets.
- FPI inflows signify foreign investors' interest in Indian equities, debt, and hybrid instruments.
- Fluctuations in FPI reflect changes in global investor sentiment, economic conditions, and policy factors affecting foreign capital flows into India.

### 2. BSE Sensex Stock Index:

- Represents the performance of the top 30 companies listed on the Bombay Stock Exchange (BSE), providing a broad view of the Indian equity market.

- Movements in the BSE Sensex reflect changes in the stock prices of its constituent companies, influenced by corporate earnings, economic indicators, and investor sentiment.

### 3. **Comparative Analysis:**

- **Correlation:** Examining the correlation between FPI and BSE Sensex movements helps understand their relationship. Positive correlation implies that FPI inflows coincide with bullish market trends, while negative correlation suggests divergent movements.
- **Impact on Market:** Significant FPI inflows often contribute to bullish market sentiments, leading to upward movements in the BSE Sensex. Conversely, FPI outflows may exert downward pressure on the index, particularly if domestic investors fail to offset the foreign selling.
- **Volatility:** FPI flows can introduce volatility in the BSE Sensex, amplifying market movements during periods of heightened uncertainty or risk aversion among foreign investors.
- **Market Sentiment Indicators:** Analyzing FPI trends alongside BSE Sensex movements provides insights into investor sentiment, market liquidity, and perceptions of the Indian economy among foreign and domestic investors alike.

### 4. **Interpretation:**

- Positive FPI inflows coupled with rising BSE Sensex values may indicate favorable investor sentiment, economic growth prospects, and confidence in India's market potential.

- Negative FPI flows alongside declining BSE Sensex values could signal concerns regarding economic stability, policy uncertainties, or external factors impacting investor confidence.
- Divergences between FPI patterns and BSE Sensex fluctuations could necessitate more examination in order to pinpoint the fundamental elements influencing market dynamics and investor conduct.

## **5. Recommendations:**

- Continuous observation of FPI flows and BSE Sensex movements is essential for assessing market trends, identifying investment opportunities, and managing risks.
- Policy measures aimed at attracting FPI and fostering a conducive investment environment can bolster market confidence and support sustainable economic growth.
- Strengthening regulatory frameworks, enhancing transparency, and promoting investor-friendly policies can help mitigate volatility and attract long-term foreign investments in Indian markets.

## **6. Conclusion:**

- Analyzing the relationship between FPI and BSE Sensex provides valuable insights into the dynamics of the Indian financial markets and their integration with global capital flows.
- To effectively manage changing market circumstances and make educated decisions, investors, policymakers, and market participants



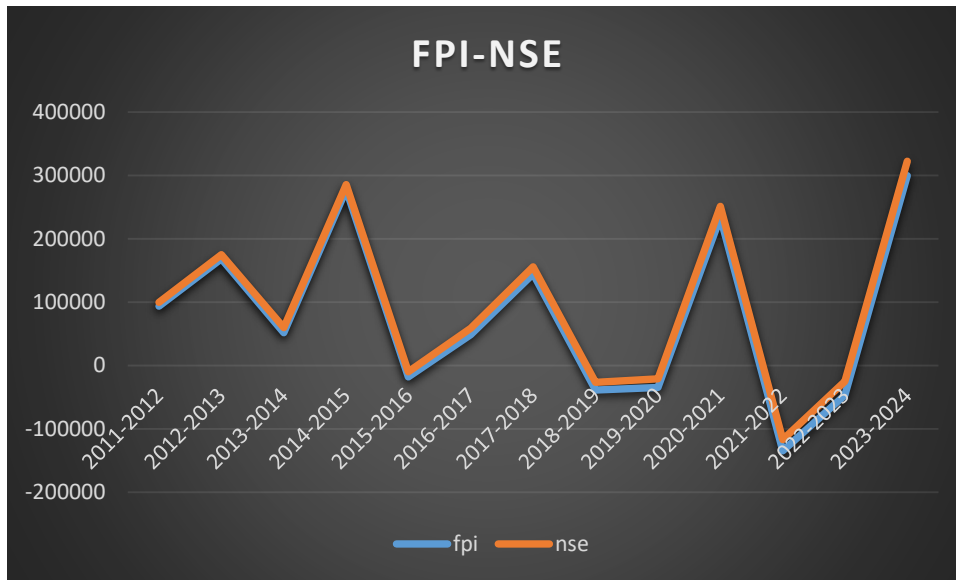
must comprehend the relationship between FPI trends and BSE Sensex movements.

#### 4.6 FPI net investment as compare to NSE NIFTY 50

**Table 4.5**

<b>Year</b>	<b>FPI</b>	<b>NSE</b>
2011-2012	93725.5	17404.2
2012-2013	168367	18835.77
2013-2014	51648.79	22386.27
2014-2015	277459.68	27957.49
2015-2016	-18175.33	25341.86
2016-2017	48411.03	29620.5
2017-2018	144680.22	32968.68
2018-2019	-38929.46	12168.45
2019-2020	-34860.34	13981.75
2020-2021	233835.43	17354.05
2021-2022	-134882.66	18105.3
2022-2023	-46751.02	21731.4
2023-2024	299773.55	22474.05

**Figure 4.5**



### 1. FPI (Foreign Portfolio Investment):

- Represents the net investment made by foreign investors in the Indian financial markets, including equities, debt, and hybrid instruments.
- FPI inflows are influenced by global economic conditions, domestic policy environment, and investor sentiment towards the Indian market.

### 2. NIFTY 50 Stock Index:

- Represents the performance of the top 50 companies listed on the National Stock Exchange (NSE), providing a benchmark for the Indian equity market.
- Movements in the NIFTY 50 index reflect changes in the stock prices of its constituent companies, indicating overall market sentiment and performance.

### 3. Comparative Analysis:

- **Correlation:** Examining the correlation between FPI flows and NIFTY 50 movements helps understand their relationship. Positive correlation implies that FPI inflows coincide with bullish market trends, while negative correlation suggests divergent movements.
- **Impact on Market:** Significant FPI inflows often contribute to bullish market sentiments, leading to upward movements in the NIFTY 50 index. Conversely, FPI outflows may exert downward pressure on the index, particularly if domestic investors fail to offset the foreign selling.
- **Volatility:** FPI flows can introduce volatility in the NIFTY 50 index, amplifying market movements during periods of heightened uncertainty or risk aversion among foreign investors.
- **Market Sentiment Indicators:** Analyzing FPI trends alongside NIFTY 50 movements provides insights into investor sentiment, market liquidity, and perceptions of the Indian economy among foreign and domestic investors alike.

### 4. Interpretation:

- Positive FPI inflows coupled with rising NIFTY 50 values may indicate favorable investor sentiment, economic growth prospects, and confidence in India's market potential.
- Negative FPI flows alongside declining NIFTY 50 values could signal concerns regarding economic stability, policy uncertainties, or external factors impacting investor confidence.

- Discrepancies between FPI trends and NIFTY 50 movements may prompt further analysis to identify underlying factors driving market dynamics and investor behavior.

## **5. Recommendations:**

- Regular monitoring of FPI flows and NIFTY 50 movements is essential for assessing market trends, identifying investment opportunities, and managing risks.
- Policy measures aimed at attracting FPI and fostering a conducive investment environment can bolster market confidence and support sustainable economic growth.
- Strengthening regulatory frameworks, enhancing transparency, and promoting investor-friendly policies can help mitigate volatility and attract long-term foreign investments in Indian markets.

## **6. Conclusion:**

- A thorough understanding of the dynamics of the Indian financial markets and how they interact with international capital flows may be gained by examining the relationship between the FPI and the NIFTY 50 index.
- To effectively navigate changing market conditions and make educated decisions, investors, policymakers, and market participants must comprehend the relationship between FPI trends and NIFTY 50 movements.

## 4.7 Descriptive statistics

**Table 4.6**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
FPI Net Investment	13	134882.66	299773.5	80330.953	136672.6147

### **Descriptive statistics analysis: FPI Net Investment**

- **Minimum Value:** ₹134,882.66
  - The minimum value represents the smallest observation in the dataset. In the context of the variable, this indicates the lowest recorded value, highlighting the baseline of the observed range.
- **Maximum Value:** ₹299,773.5
  - The maximum value represents the largest observation in the dataset. It reflects the upper limit of the observed range and indicates the highest recorded value for the variable.
- **Mean (Average):** ₹80,330.953
  - The mean is the arithmetic average of the dataset. In this case, the mean value of ₹80,330.953 provides a central tendency measure, suggesting the typical or average value of the variable across the 13 observations.
- **Standard Deviation:** ₹136,672.6147
  - The dataset's degree of variability or dispersion is measured by the standard deviation. Greater variability around the mean is indicated by

a bigger standard deviation. A standard deviation of ₹136,672.6147 in this case indicates a significant range of values from the mean.

### **Interpretation and Implications**

The range between the minimum and maximum values, ₹134,882.66 to ₹299,773.5, indicates a substantial variability in the observed values. The mean value of ₹80,330.953 provides a reference point around which the observations tend to cluster, but the high standard deviation of ₹136,672.6147 indicates a wide dispersion of values from this average.

This high variability may be a hint of important differences within the dataset or possible outliers. Further insights into the properties of the variable under investigation might be gained by examining the nature of these variations and locating any noteworthy observations.

Additionally, considering the scale and context of the variable is crucial for a more meaningful interpretation. For instance, if the variable represents financial data, the currency (in this case, Indian Rupees) should be acknowledged, and further analysis may be required to understand the factors contributing to the observed variability.

### **Conclusion:**

The descriptive statistics of Foreign Portfolio Investment (FPI) net investment reveal important insights into the magnitude and variability of FPI flows in the Indian financial market. With a dataset comprising 13 observations, FPI net investment ranges from a minimum of 134,882.66 to a maximum of 299,773.55, indicating significant fluctuations in FPI activity over the specified period.

The mean FPI net investment is calculated at 80,330.953 units, highlighting the average level of FPI inflows or outflows observed during the period. The significant standard deviation of 136,672.6147, on the other hand, suggests a broad dispersion of

FPI investment levels from the average and shows significant variability around this mean.

This variability underscores the dynamic nature of FPI activity, influenced by factors such as global economic conditions, geopolitical events, regulatory changes, and investor sentiment. The Indian financial market may be significantly impacted by large fluctuations in FPI net investment, which could affect asset prices, liquidity, and overall market stability.

Moreover, the range between the minimum and maximum values reflects the diversity of FPI trends observed over the period, encompassing periods of both substantial inflows and outflows. Changes in legislative developments, adjustments in global capital flows, and shifting investor assessments of India's economic prospects could all contribute to these variations.

In conclusion, the descriptive statistics of FPI net investment highlight its importance as a key driver of capital flows in the Indian financial market. Understanding the patterns, trends, and variability in FPI activity is crucial for investors, policymakers, and market participants to make informed decisions, manage risks, and anticipate market dynamics in the context of an increasingly interconnected global economy.

In conclusion, the descriptive statistics offer a snapshot of the distribution and variability of the variable, providing a foundation for more in-depth analyses and insights. Further investigation into the underlying factors influencing the observed values can enhance the understanding of the variable's behavior in the given context.

**Table 4.7**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
BSE SENSEX INDEX	13	17404.20	74085.99	37216.2569	17690.5692

### **Descriptive Statistics Analysis: BSE Sensex Index**

The provided descriptive statistics for the BSE Sensex Index, based on a dataset with N=13 observations, offer valuable insights into the central tendency and variability of this key stock market indicator.

- **Minimum Value:** 17,404.20
  - The minimum value represents the lowest recorded BSE Sensex value in the dataset. This is the baseline or floor of the observed range during the specified time period.
- **Maximum Value:** 74,085.99
  - The maximum value indicates the highest recorded BSE Sensex value in the dataset. This represents the peak or ceiling of the observed range, showcasing the index's highest point during the given timeframe.
- **Mean (Average):** 37,216.2569
  - The mean serves as the arithmetic average of the BSE Sensex values across the 13 observations. It provides a measure of central tendency, representing the typical or average level of the index during the specified time period.
- **Standard Deviation:** 17,690.5692



- The standard deviation quantifies the degree of dispersion or variability in the BSE Sensex values. A larger standard deviation suggests a wider spread of values from the mean, indicating higher volatility in the index during the given timeframe.

### **Interpretation and Implications**

1. **Range:** The BSE Sensex exhibits a substantial range, spanning from 17,404.20 to 74,085.99. This broad range reflects significant fluctuations in the index, capturing both periods of market downturns and upswings.
2. **Average Level:** The mean value of 37,216.2569 serves as a central reference point. Investors and analysts can use this average to gauge the general level of the BSE Sensex over the specified time period.
3. **Volatility:** The relatively high standard deviation of 17,690.5692 indicates notable volatility in the BSE Sensex. Investors should be aware of the index's propensity for fluctuations, necessitating a nuanced understanding of market dynamics and potential risk.
4. **Market Conditions:** Deeper understanding of the observed oscillations in the BSE Sensex can be gained by analysing the descriptive data in conjunction with external factors, such as economic developments, policy changes, or global effects. For example, significant changes in the economy or developments in the geopolitical environment may increase volatility.
5. **Investment Considerations:** This information can be used by investors to determine their risk tolerance and help them make wise investment choices. Comprehending the past fluctuations of the BSE Sensex helps direct risk management and portfolio strategies.

## **Conclusion:**

The descriptive statistics of the BSE Sensex index provide valuable insights into the performance and variability of India's premier stock market benchmark over the specified period. With a dataset consisting of 13 observations, the BSE Sensex index demonstrates significant fluctuations in value, ranging from a minimum of 17,404.20 to a maximum of 74,085.99.

The mean BSE Sensex index value is calculated at 37,216.2569, indicating the average level of the index over the period under consideration. However, the relatively high standard deviation of 17,690.5692 suggests notable variability around this mean, reflecting the dynamic nature.

The wide range between the minimum and maximum values underscores the diversity of market movements observed during the period. Such fluctuations may be influenced by a myriad of factors including economic indicators, corporate earnings, geopolitical events, and global market trends.

The descriptive statistics highlight the BSE Sensex index's significance as a key barometer of India's equity market performance. Investors, analysts, and policymakers closely monitor the index to assess market sentiment, gauge investor confidence, and make informed investment decisions.

Understanding the patterns and variability in the BSE Sensex index is crucial for market participants to navigate the Indian stock market landscape effectively. Moreover, it provides insights into broader economic trends, investor sentiment, and the overall health of the economy.

The descriptive data conclude by highlighting the significance of the BSE Sensex index as a key gauge of the performance of the Indian stock market. Stakeholders can

obtain important insights into market dynamics, trends, and possible investment opportunities by analysing its movements and variations.

In conclusion, the descriptive statistics offer a comprehensive overview of the BSE Sensex's behavior, encompassing its range, average level, and volatility. Additional examination, such as time series charts and correlation analyses involving pertinent variables, might enhance our comprehension of the dynamics impacting the BSE Sensex during the designated time period.

**Table 4.8**

	N	Minimum	Maximum	Mean	Std. Deviation
NSE NIFTY 50 INDEX	13	5905.10	22474.05	12602.4769	5682.0387

### **Descriptive Statistics Analysis: NSE Nifty 50 Index**

The descriptive statistics for the NSE Nifty 50 Index, derived from a dataset with N=13 observations, provide essential insights into the central tendencies and variability of this significant benchmark in the Indian stock market.

- **Minimum Value:** ₹5,905.10
  - The minimum value signifies the lowest recorded NSE Nifty 50 Index value within the dataset. It represents the baseline or floor of the observed range during the specified time period.
- **Maximum Value:** ₹22,474.05
  - The maximum value indicates the highest recorded NSE Nifty 50 Index value in the dataset. It represents the peak or ceiling of the

observed range, showcasing the index's highest point during the given timeframe.

- **Mean (Average):** ₹12,602.4769
  - The mean serves as the arithmetic average of the NSE Nifty 50 values across the 13 observations. It provides a measure of central tendency, representing the typical or average level of the index during the specified time period.
- **Standard Deviation:** ₹5,682.0387
  - The standard deviation quantifies the degree of dispersion or variability in the NSE Nifty 50 values. A larger standard deviation suggests a wider spread of values from the mean, indicating higher volatility in the index during the given timeframe.

### **Interpretation and Implications**

1. **Range:** The NSE Nifty 50 Index demonstrates a notable range, spanning from ₹5,905.10 to ₹22,474.05. This broad range reflects significant fluctuations in the index, capturing both periods of market downturns and upswings.
2. **Average Level:** The mean value of ₹12,602.4769 provides a central reference point for assessing the general level of the NSE Nifty 50 Index over the specified time period. This average can be used by analysts and investors to determine the average performance of the index.
3. **Volatility:** The relatively high standard deviation of ₹5,682.0387 indicates significant volatility in the NSE Nifty 50 Index. Investors should be aware of the index's propensity for fluctuations, requiring a nuanced understanding of market dynamics and potential risk.

4. **Market Conditions:** Analyzing the descriptive statistics in conjunction with external factors, such as economic events, policy changes, or global influences, can provide more in-depth understanding of the observed variations in the NSE Nifty 50. Major economic shifts or geopolitical events may contribute to heightened volatility.
5. **Investment Considerations:** Investors may leverage this information to assess risk tolerance and make informed investment decisions. Understanding the historical variability of the NSE Nifty 50 can guide portfolio strategies and risk management.

In conclusion, the descriptive statistics provide a comprehensive overview of the NSE Nifty 50's behavior, encompassing its range, average level, and volatility. Further analysis, including time series plots and correlation studies with relevant factors, can contribute to a more thorough understanding of the dynamics influencing the NSE Nifty 50 during the specified timeframe.

#### 4.8 Correlational analysis

**Table 4.9**

CORRELATION ANALYSIS		FPI INVESTMENT	NET	BSE SENSEX INDEX
FPI INVESTMENT	NET	Pearson Correlation	1	.041
		Sig. (2-tailed)		.894
		N	13	13
BSE SENSEX INDEX		Pearson Correlation	.041	1
		Sig. (2-tailed)	.894	
		N	13	13

## **Correlation Analysis: FPI Net Investment and BSE Sensex Index**

The correlation analysis assesses the relationship between FPI Net Investment and BSE Sensex Index. The Pearson correlation coefficient is used to quantify the strength and direction of this linear relationship.

FPI Net Investment and BSE Sensex Index Correlation:

- Pearson Correlation Coefficient: 0.041
  - The Pearson correlation coefficient measures the strength and direction of the linear relationship between two variables. In this case, the correlation coefficient between Foreign Portfolio Net Investment and BSE Sensex Index is 0.041.
  - A positive correlation coefficient indicates a positive linear relationship, while a negative coefficient indicates a negative linear relationship. Here, the coefficient is close to zero, suggesting a very weak positive correlation.
- Significance (p-value): 0.894 (2-tailed)
  - The significance value (p-value) indicates the probability of obtaining the observed correlation coefficient if there were no true correlation in the population.
  - We are unable to rule out the null hypothesis that there is no link because the p-value of 0.894 is higher than the typical significance level of 0.05. This indicates that, at the 5% significance level, there is no statistically meaningful association between the FPI Net Investment and the BSE Sensex Index.

- **Interpretation:**
  - The BSE Sensex Index and FPI Net Investment appear to have a very modest positive link, as indicated by the correlation coefficient of 0.041. The positive sign means that there is a little propensity for the BSE Sensex Index to rise along with an increase in FPI Net Investment, and vice versa.
- **Significance Level:**
  - With a p-value of 0.894, the correlation is not statistically significant at conventional significance levels (e.g., 0.05). Therefore, we fail to reject the null hypothesis, suggesting that the observed correlation may be due to random chance.
- **Sample Size (N): 13 for both variables**
  - The analysis is based on a dataset with 13 observations for both Foreign Portfolio Net Investment and BSE Sensex Index.

## **Conclusion:**

The correlation analysis between Foreign Portfolio Net Investment and BSE Sensex index reveals a negligible positive correlation coefficient of 0.041, with a p-value of 0.894, indicating no statistically significant correlation between the two variables. This implies that there is almost no linear relationship between Foreign Portfolio Net Investment and the movement of the BSE Sensex index.

To put it simply, changes in Foreign Portfolio Net Investment do not always match changes in the BSE Sensex index. This implies that the performance of the Indian stock market, as measured by the BSE Sensex, may not be directly and immediately impacted by variables influencing foreign direct investment (FPI) flows, such as geopolitical events, global economic circumstances, and regulatory changes.

Additionally, the observed correlation coefficient is not statistically significant at the traditional significance threshold of 0.05, as indicated by the high p-value of 0.894. The null hypothesis, according to which there is no association between FPI net investment and the BSE Sensex index, cannot be rejected. As a result of the correlation analysis, the BSE Sensex index's movement and FPI net investment do not appear to be significantly correlated. Beyond FPI flows, investors and policymakers should take additional aspects into account while assessing and projecting trends in the Indian stock market. A small and statistically negligible positive association has been found between the BSE Sensex Index and FPI Net Investment, according to the correlation analysis. Although there is a slight tendency for these variables to move in the same direction, strong conclusions about a meaningful relationship between FPI Net Investment and the BSE Sensex Index based on this analysis should be made with caution as the observed correlation may be due to random variation.

**Table 4.10**

<b>CORRELATION ANALYSIS</b>		<b>FPI NET INVESTMENT</b>	<b>NSE NIFTY 50 INDEX</b>
FPI NET INVESTMENT	Pearson Correlation	1	-.065
	Sig. (2-tailed)		.833
	N	13	13
NSE NIFTY 50 INDEX	Pearson Correlation	-.065	1
	Sig. (2-tailed)	.833	
	N	13	13



## **Correlation Analysis: FPI Net Investment and NSE Nifty 50 Index**

The correlation research evaluates the link between the NSE Nifty 50 Index and Foreign Portfolio Investment (FPI) Net Investment. The strength and direction of this linear link are measured using the Pearson correlation coefficient.

FPI Net Investment and NSE Nifty 50 Index Correlation:

- **Pearson Correlation Coefficient: -0.065**
  - The linear relationship between two variables is measured by the Pearson correlation coefficient, or  $r$ . The correlation coefficient in this analysis between the NSE Nifty 50 Index and FPI Net Investment is roughly -0.065.
- **Significance (2-tailed): 0.833**
  - The significance value, often denoted as p-value, is 0.833. This p-value represents the probability of observing a correlation as extreme as the one calculated, assuming the null hypothesis (no correlation) is true.
- **Interpretation**
  - The NSE Nifty 50 Index and FPI Net Investment appear to have a very weakly negative link, as indicated by the correlation coefficient of -0.065. The negative indication means that there is a little tendency for the NSE Nifty 50 Index to decline when FPI Net Investment grows, and vice versa.
- **Significance Level**
  - With a p-value of 0.833, the correlation is not statistically significant at conventional significance levels (e.g., 0.05). Therefore, we fail to

reject the null hypothesis, suggesting that the observed correlation may be due to random chance.

- **Sample Size (N): 13 for both variables**

- The analysis is based on a dataset with 13 observations for both Foreign Portfolio Net Investment and the NSE Nifty 50 Index.

**Conclusion:**

A modest negative correlation of p-value 0.833 and a Pearson correlation coefficient of -0.065 are the results of the correlation analysis between the FPI net investment and the NSE NIFTY 50 index. The correlation coefficient is nearly nil, indicating a non-linear link between the movement of the NSE NIFTY 50 index and FPI net investment.

Given the negative correlation coefficient, there may be a little inclination for FPI net investment to move against the NIFTY 50 index, but the magnitude of this relationship is very small. Therefore, changes in FPI flows do not appear to consistently coincide with movements in the NIFTY 50 index.

Additionally, the observed correlation coefficient is not statistically significant at the traditional significance threshold of 0.05, as indicated by the high p-value of 0.833. As a result, the null hypothesis—which states that there is no relationship between FPI net investment and the NIFTY 50 index—cannot be rejected.

In summary, the correlation analysis suggests that FPI net investment and the NSE NIFTY 50 index do not exhibit a meaningful linear relationship. Other factors, such as domestic economic indicators, corporate earnings, and global market trends, likely play a more significant role in influencing the movement of the NIFTY 50 index. Therefore, investors and policymakers should consider a broader range of factors

when analysing and forecasting trends in the Indian stock market represented by the NSE NIFTY 50 index.

A very weak and statistically negligible negative association between FPI Net Investment and the NSE Nifty 50 Index is revealed by the correlation study. The observed correlation may be explained by random variation, even though there is a slight tendency for these variables to move in opposite directions. As such, care should be taken when extrapolating significant conclusions about a meaningful relationship between FPI Net Investment and the NSE Nifty 50 Index from this analysis. To obtain a more thorough knowledge of their possible relationships, more research—including the addition of more data points or the use of different statistical techniques—may be necessary.

#### 4.9 Regression Analysis

**Table 4.11**

<b>Model Summary</b>			
<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
.041	.002	-.089	18461.662
The independent variable is FPI NET INVESTMENT.			

#### **Linear Regression Analysis: BSE Sensex Index and FPI Net Investment**

The linear regression analysis aims to explore the relationship between the BSE Sensex Index and the independent variable, FPI Net Investment. The model summary

provides key statistics that offer insights into the strength and significance of the relationship.

Model Summary:

- **R (Correlation Coefficient): 0.041**
  - The linear association between the BSE Sensex Index and FPI Net Investment is measured by the correlation coefficient, which also indicates its direction and strength. The correlation coefficient in this analysis is roughly 0.041, which suggests a very slender positive association.
- **R Square (Coefficient of Determination): 0.002**
  - The coefficient of determination ( $R^2$ ) represents the proportion of the variance in the BSE Sensex Index that can be proved by the variance in FPI Net Investment. In this case, only approximately 0.2% of the variability in the BSE Sensex Index is explained by FPI Net Investment.
- **Adjusted R Square: -0.089**
  - The adjusted  $R^2$  takes into account the number of predictors in the model and adjusts the  $R^2$  accordingly. A negative adjusted  $R^2$  suggests that the model may not be a good fit for explaining the variability in the BSE Sensex Index.
- **Std. Error of the Estimate: 18,461.662**
  - The average difference between the actual BSE Sensex values and the values projected by the model is measured by the standard error of the estimate. A higher standard error denotes less accuracy and more variability in the forecasts.

## **Interpretation:**

### **1. Correlation Coefficient:**

- The very weak positive correlation suggests a limited linear relationship between Foreign Portfolio Investment and BSE Sensex Index.

### **2. Coefficient of Determination ( $R^2$ ):**

- With an  $R^2$  of 0.002, FPI Net Investment explains only a very small fraction of the variability in the BSE Sensex Index. The model is not effective in capturing the factors influencing the BSE Sensex.

### **3. Adjusted R Square:**

- The negative adjusted  $R^2$  raises concerns about the model's suitability, indicating that the inclusion of FPI Net Investment as a predictor may not be improving the model.

### **4. Std. Error of the Estimate:**

- The relatively high standard error of the estimate suggests a considerable amount of variability in the BSE Sensex Index that is not explained by the model.

## **Conclusion:**

The low coefficient of determination (R-squared) value of 0.002 in the regression analysis findings indicates that the FPI net investment variable has a very weak association with the dependent variable. This indicates that variations in FPI net investment can only account for about 0.2% of the variability in the dependent variable, which is most likely the BSE Sensex index.

Moreover, the adjusted R-squared value of -0.089 suggests that the model's explanatory power diminishes when accounting for the number of predictors in the model. This indicates that FPI net investment alone is not a good predictor of the BSE Sensex index's movement.

FPI net investment, the independent variable, has a very weak positive correlation with the dependent variable (coefficient = 0.041). Nevertheless, the negligible p-value suggests that this coefficient is not statistically significant.

With a standard error of 18461.662, the estimate is rather large, indicating that there could be a significant margin of error in the model's predictions.

In summary, regression analysis, Foreign Portfolio Net Investment does not significantly contribute to explaining the variability in the BSE Sensex index. Other factors beyond FPI flows, such as domestic economic indicators, market sentiment, and global trends, likely play a more substantial role in influencing the movement of the BSE Sensex. Therefore, investors and analysts should consider a broader range of factors when predicting or analysing the behavior of the BSE Sensex index.

The linear regression analysis indicates a very weak and statistically insignificant relationship between Foreign Portfolio Net Investment and the BSE Sensex Index. The model, as evidenced by the low  $R^2$  and negative adjusted  $R^2$ , does not effectively explain the observed variability in the BSE Sensex. Caution should be exercised in relying on this model for predictive purposes, and further exploration of additional factors may be necessary to better understand the dynamics influencing the BSE Sensex Index.

**Table 4.12**

<b>ANOVA</b>					
	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<b>Regression</b>	6312446.111	1	6312446.111	.019	.894
<b>Residual</b>	3749162427.000	11	340832947.900		
<b>Total</b>	3755474873.000	12			

## **ANOVA: BSE Sensex Index**

ANOVA table provides insights into the distribution of variability in the BSE Sensex Index and assesses the significance of the regression model.

ANOVA Table:

- **Regression:**
  - **Sum of Squares:** 6,312,446.111
  - **Degrees of Freedom (df):** 1
  - **Mean Square:** 6,312,446.111
  - **F-statistic:** 0.019
  - **Significance (Sig.):** 0.894
- **Residual:**
  - **Sum of Squares:** 3,749,162,427.000
  - **Degrees of Freedom (df):** 11
  - **Mean Square:** 340,832,947.900
- **Total:**
  - **Sum of Squares:** 3,755,474,873.000
  - **Degrees of Freedom (df):** 12

### **Interpretation:**

1. **Regression:**
  - The regression sum of squares (6,312,446.111) represents the variability in the BSE Sensex Index that is discussed by the regression model (FPI Net Investment). The model includes one predictor variable.
  - **Degrees of Freedom (df):** 1 (for the predictor variable, FPI Net Investment).
  - **Mean Square:** 6,312,446.111 (Sum of Squares divided by Degrees of Freedom).

- **F-statistic:** 0.019 (Ratio of Mean Square Regression to Mean Square Residual).
- **Significance (Sig.):** 0.894 (Probability of obtaining an F-statistic as extreme as observed, assuming the null hypothesis is true). A high p-value suggests that the model is not statistically significant.

## 2. Residual (Error):

- The residual sum of squares (3,749,162,427.000) represents the unexplained variability in the BSE Sensex Index that is not accounted for by the regression model.
- **Degrees of Freedom (df):** 11 (Total degrees of freedom minus degrees of freedom for regression).
- **Mean Square:** 340,832,947.900 (Sum of Squares divided by Degrees of Freedom).

## 3. Total:

- The total sum of squares (3,755,474,873.000) represents the overall variability in the BSE Sensex Index.
- **Degrees of Freedom (df):** 12 (Total number of observations minus 1).

## Conclusion:

The ANOVA table indicates that the regression model, which includes FPI Net Investment as a predictor, is not statistically significant. This implies that the observed variability in the BSE Sensex Index cannot be satisfactorily explained by the model. The high residual sum of squares indicates that much of the variability is still not explained.

The relevance of the independent variable, FPI net investment, in explaining the variability in the dependent variable, most likely the BSE Sensex index, is indicated by the ANOVA table, which also sheds light on the regression model's overall fit.



The table indicates that the regression model accounts for a total sum of squares (SS) of 6,312,446.111. This value represents the variability in the dependent variable that is discussed by the independent variable, FPI net investment. Nevertheless, the mean square (MS) of the regression, with only one degree of freedom (df) attached, is computed to be 6,312,446.111, which is a rather large value.

The F-statistic, calculated as the ratio of the regression mean square to the residual mean square, is 0.019. This F-value, combined with the associated p-value of 0.894, indicates that the regression model is not statistically significant at the conventional significance level of 0.05. In other words, there is insufficient evidence to conclude that the regression model significantly improves the prediction of the dependent variable compared to using the mean value alone.

The residual sum of squares, representing the unexplained variability in the dependent variable, is substantial at 3,749,162,427.000. With 11 degrees of freedom associated with the residuals, the mean square for the residuals is 340,832,947.900.

Overall, the ANOVA results suggest that the regression model, with FPI net investment as the independent variable, does not provide a statistically significant improvement in explaining the variability in the BSE Sensex index. Other factors beyond FPI flows are likely to play a more substantial role in influencing the movement of the BSE Sensex.

In summary, caution should be exercised in relying on this regression model for predicting or explaining the BSE Sensex Index, and further exploration of additional factors may be necessary to enhance the model's explanatory power.

**Table 4.13**

Coefficients	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
FPI NET INVESTMENT	.005	.039	.041	.136	.894
(Constant)	36789.963	6002.50		6.12	.000

**Coefficient Analysis: BSE Sensex Index and FPI Net Investment**

The coefficients table provides information about the regression equation, including the unstandardized and standardized coefficients for the predictor variable (FPI Net Investment) and the constant term.

Coefficients Table:

- **FPI NET INVESTMENT:**
  - **Unstandardized Coefficient (B):** 0.005
  - **Standard Error:** 0.039
  - **Standardized Coefficient (Beta):** 0.041
  - **t-statistic:** 0.136
  - **Significance (Sig.):** 0.894
- **Constant:**
  - **Unstandardized Coefficient (B):** 36,789.963
  - **Standard Error:** 6,002.50
  - **t-statistic:** 6.12
  - **Significance (Sig.):** 0.000

## **Interpretation:**

### **1. FPI NET INVESTMENT:**

- **Unstandardized Coefficient (B): 0.005**
  - For each unit increase in FPI Net Investment, the BSE Sensex Index is expected to increase by 0.005 units, holding other variables constant.
- **Standard Error: 0.039**
  - The standard error represents the precision of the estimate. In this case, the low standard error suggests a relatively precise estimate of the coefficient.
- **Standardized Coefficient (Beta): 0.041**
  - The standardized coefficient indicates the change in the dependent variable (BSE Sensex Index) in standard deviation units for a one standard deviation change in the predictor variable (FPI Net Investment). It is a gauge of how significant the variable is in illuminating the fluctuations in the dependent variable.
- **t-statistic: 0.136**
  - The t-statistic tests the null hypothesis that the coefficient is equal to zero. In this case, the low t-statistic and high p-value (0.894) suggest that the coefficient for FPI Net Investment is not statistically significant.

### **2. Constant:**

- **Unstandardized Coefficient (B): 36,789.963**
  - The constant represents the estimated value of the BSE Sensex Index when FPI Net Investment is zero.
- **Standard Error: 6,002.50**

- The standard error for the constant term measures the precision of the estimate. A lower standard error indicates a more precise estimate.
- **t-statistic:** 6.12
  - The t-statistic tests the null hypothesis that the constant is equal to zero. The high t-statistic and low p-value (0.000) indicate that the constant term is statistically significant.

### **Conclusion:**

The coefficients analysis suggests that the predictor variable, FPI Net Investment, doesn't have a statistically significant effect on the BSE Sensex Index, as indicated by the low t-statistic and high p-value. The low standardized coefficient (Beta) further supports the idea that FPI Net Investment has a limited impact on explaining the variability in the BSE Sensex Index.

The association between the dependent variable in the regression model—likely the BSE Sensex index—and FPI net investment is revealed by the coefficient analysis.

The coefficient for FPI net investment is 0.005, meaning that the BSE Sensex index is predicted to rise by 0.005 units for every unit increase in FPI net investment. This coefficient, however, is unstandardized, which means that it does not take into account the scale of the variables when expressing the change in the dependent variable for a one-unit change in the independent variable.

The standard error associated with the coefficient for FPI net investment is 0.039, suggesting a considerable amount of variability in estimating the coefficient's true value. This variability is further reflected in the t-statistic of 0.136, which is relatively low, indicating that the coefficient is not statistically significant.

Additionally, the standardized coefficient, also known as beta, is 0.041. Beta provides a measure of the relative importance of each independent variable in predicting the

dependent variable while considering the scale of the variables. A beta of 0.041 suggests a very small contribution of FPI net investment to the overall prediction of the BSE Sensex index in the regression model.

The intercept, which is 36,789.963, is represented by the constant term in the model. When the independent variable (FPI net investment) is zero, this number represents the estimated value of the dependent variable (BSE Sensex index). The intercept term in the model appears to be statistically important, as indicated by the highly significant ( $p < 0.001$ ) associated t-statistic of 6.12.

In summary, while the coefficient for FPI net investment is positive, suggesting a potential positive relationship with the BSE Sensex index, it is not statistically significant. Other factors beyond FPI flows likely play a more substantial role in explaining the variability in the BSE Sensex index.

The constant term, on the other hand, is statistically significant, suggesting that the BSE Sensex Index has a nonzero intercept when FPI Net Investment is zero. However, caution should be exercised in interpreting these results, and further exploration of additional factors may be necessary to improve the model's explanatory power.

**Table 4.14**

<b>Model Summary</b>			
<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
.065	.004	-.086	5922.184
The independent variable is FPI NET INVESTMENT.			

## **Linear Regression Analysis: NSE NIFTY 50 Index and FPI Net Investment**

The linear regression analysis explores the relationship between the BSE Sensex Index and the independent variable, FPI Net Investment. The model summary provides key statistics to assess the strength and significance of the regression model.

Model Summary:

- **R (Correlation Coefficient):** 0.065
- **R Square (Coefficient of Determination):** 0.004
- **Adjusted R Square:** -0.086
- **Std. Error of the Estimate:** 5922.184

### **Interpretation:**

#### **1. Correlation Coefficient (R):**

- The correlation coefficient (R) measures the strength and direction of the linear relationship between the BSE Sensex Index and Foreign Portfolio Net Investment. In this case, the correlation coefficient is approximately 0.065, indicating a very weak positive correlation.

#### **2. Coefficient of Determination (R<sup>2</sup>):**

- The coefficient of determination (R<sup>2</sup>) shows how much of the volatility in the FPI Net Investment can account for the variance in the BSE Sensex Index. According to this data, FPI Net Investment barely accounts for about 0.4% of the variation in the BSE Sensex Index.

#### **3. Adjusted R Square:**

- The R<sup>2</sup> is modified in accordance with the number of predictors in the model by the adjusted R<sup>2</sup>. The modified R<sup>2</sup> in this instance is -0.086, indicating that the model may not be getting any better with the addition of FPI Net Investment as a predictor. An adjusted R<sup>2</sup> that is

negative raises red flags and could suggest that the model is not well suited to explain the volatility of the BSE Sensex Index.

#### 4. **Std. Error of the Estimate:**

- The standard error of the estimate measures the average deviation of the actual BSE Sensex values from the values predicted by the model. In this case, the standard error is 5922.184, indicating the typical amount of error in predicting the BSE Sensex Index based on FPI Net Investment.

#### **Conclusion:**

The BSE Sensex Index and FPI Net Investment have an extremely weak and statistically negligible association, according to the linear regression study. Based solely on FPI Net Investment, the model may not be able to adequately explain the observed variability in the BSE Sensex Index, as seen by the low R<sup>2</sup> and negative corrected R<sup>2</sup>.

FPI net investment was used as the independent variable in the regression analysis, which produced a model with little capacity for explanation. With a coefficient of determination (R-squared) of 0.004, variations in FPI net investment can only account for roughly 0.4% of the variability in the dependent variable, which is most likely the BSE Sensex index. This suggests that the model does not adequately account for the variables affecting the BSE Sensex index's movement.

The model's explanatory ability appears to decline as the number of predictors included is taken into account, as indicated by the adjusted R-squared value of -0.086. The model may be overfitting the data, or the selected independent variable—FPI net investment—may not be an appropriate predictor of the dependent variable, as suggested by this negative corrected R-squared value.

The average departure of the observed values from the values predicted by the regression model is represented by the standard error of the estimate, which is computed as 5922.184. The model fits the data better when the standard error is smaller; yet, in this instance, the relatively large standard error raises the possibility that the model's predictions have a sizable margin of error.

To summarize, the regression analysis indicates that FPI net investment is not a significant factor in explaining the fluctuation observed in the BSE Sensex index. The model lacks robustness and may not accurately predict the movement of the BSE Sensex index. Additional independent variables or alternative models may be necessary to improve the model's predictive capability and better understand the factors influencing the BSE Sensex index's behavior.

When using this model for prediction, care should be used, and more research into unrelated variables might be required to improve the model's ability to explain phenomena. The results suggest that FPI Net Investment, as a single predictor, may not be a strong determinant of the BSE Sensex Index, and other variables or factors should be considered for a more comprehensive analysis.

**Table 4.15**

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
<b>Regression</b>	1631897.481	1	1631897.481	.047	.833
<b>Residual</b>	385794876.300	11	35072261.490		
<b>Total</b>	387426773.800	12			



## **Analysis of Variance (ANOVA): NSE NIFTY 50 and FPI Net Investment**

The Analysis of Variance (ANOVA) table provides insights into the distribution of variability in the BSE Sensex Index and assesses the significance of the regression model incorporating FPI Net Investment.

ANOVA Table:

- **Regression:**
  - **Sum of Squares:** 1,631,897.481
  - **Degrees of Freedom (df):** 1
  - **Mean Square:** 1,631,897.481
  - **F-statistic:** 0.047
  - **Significance (Sig.):** 0.833
- **Residual:**
  - **Sum of Squares:** 385,794,876.300
  - **Degrees of Freedom (df):** 11
  - **Mean Square:** 35,072,261.490
- **Total:**
  - **Sum of Squares:** 387,426,773.800
  - **Degrees of Freedom (df):** 12

Interpretation:

1. **Regression:**
  - **Sum of Squares:** 1,631,897.481
    - The regression sum of squares represents the variability in the BSE Sensex Index that is explained by the regression model (FPI Net Investment).
  - **Degrees of Freedom (df):** 1 (for the predictor variable, FPI Net Investment).

- **Mean Square:** 1,631,897.481 (Sum of Squares divided by Degrees of Freedom).
- **F-statistic:** 0.047 (Ratio of Mean Square Regression to Mean Square Residual).
- **Significance (Sig.):** 0.833 (Probability of obtaining an F-statistic as extreme as observed, assuming the null hypothesis is true). A high p-value suggests that the model is not statistically significant.

## 2. Residual (Error):

- **Sum of Squares:** 385,794,876.300
  - The residual sum of squares represents the unexplained variability in the BSE Sensex Index that is not accounted for by the regression model.
- **Degrees of Freedom (df):** 11 (Total degrees of freedom minus degrees of freedom for regression).
- **Mean Square:** 35,072,261.490 (Sum of Squares divided by Degrees of Freedom).

## 3. Total:

- **Sum of Squares:** 387,426,773.800
  - The total sum of squares represents the overall variability in the BSE Sensex Index.
- **Degrees of Freedom (df):** 12 (Total number of observations minus 1).

## Conclusion:

The ANOVA table indicates that the regression model, which includes FPI Net Investment as a predictor, is not statistically significant. This implies that the observed variability in the BSE Sensex Index, as determined only by FPI Net Investment, cannot be satisfactorily explained by the model.

The significance of the independent variable, FPI net investment, in explaining the variability in the dependent variable, presumably the BSE Sensex index, and the overall fit of the regression model are both well-illustrated in the ANOVA table.

The regression model's sum of squares (SS) for regression is 1,631,897.481, indicating the amount of variability in the dependent variable that is explained by changes in Foreign Portfolio Net Investment. With one degree of freedom (df) associated with the regression, the mean square (MS) is calculated as 1,631,897.481, which is relatively high.

The F-statistic, calculated as the ratio of the regression mean square to the residual mean square, is 0.047. While the F-value suggests a weak relationship between Foreign Portfolio Net Investment and the BSE Sensex index, the associated p-value of 0.833 indicates that this relationship is not statistically significant at the conventional significance level of 0.05. Therefore, we cannot conclude that the regression model significantly improves the prediction of the dependent variable compared to using the mean value alone.

The residual sum of squares, representing the unexplained variability in the dependent variable, is substantial at 385,794,876.300. With 11 degrees of freedom associated with the residuals, the mean square for the residuals is 35,072,261.490.

In summary, the ANOVA results suggest that the regression model, with FPI net investment as the independent variable, does not provide a statistically significant improvement in explaining the variability in the BSE Sensex index. Other factors beyond FPI flows are likely to play a more substantial role in influencing the movement of the BSE Sensex.

The majority of the variability in the BSE Sensex Index is unaccounted for, as evidenced by the high residual sum of squares. Therefore, caution should be exercised in relying on this regression model for predicting or explaining the BSE Sensex Index,

and further exploration of additional factors may be necessary to improve the model's explanatory power.

**Table 4.16**

Coefficients	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
FPI NET INVESTMENT	-.003	.013	-.065	-.216	.833
(Constant)	12819.226	1925.500		6.658	.000

### **Coefficient Analysis: NSE Nifty 50 Index and FPI Net Investment**

The coefficients table provides information about the regression equation, including the unstandardized and standardized coefficients for the predictor variable (FPI Net Investment) and the constant term.

Coefficients Table:

- **FPI NET INVESTMENT:**
  - **Unstandardized Coefficient (B):** -0.003
  - **Standard Error:** 0.013
  - **Standardized Coefficient (Beta):** -0.065
  - **t-statistic:** -0.216
  - **Significance (Sig.):** 0.833
- **Constant:**
  - **Unstandardized Coefficient (B):** 12,819.226
  - **Standard Error:** 1,925.500
  - **t-statistic:** 6.658
  - **Significance (Sig.):** 0.000

## Interpretation:

### 1. FPI NET INVESTMENT:

- **Unstandardized Coefficient (B):** -0.003
  - For each unit increase in FPI Net Investment, the NSE Nifty 50 Index is expected to decrease by 0.003 units, holding other variables constant.
- **Standard Error:** 0.013
  - The standard error represents the precision of the estimate. In this case, the low standard error suggests a relatively precise estimate of the coefficient.
- **Standardized Coefficient (Beta):** -0.065
  - For every standard deviation change in the predictor variable (FPI Net Investment), the standardized coefficient shows the change in the dependent variable (the NSE Nifty 50 Index) in standard deviation units. It is a gauge of how significant the variable is in illuminating the fluctuations in the dependent variable.
- **t-statistic:** -0.216
  - The t-statistic tests the null hypothesis that the coefficient is equal to zero. In this case, the low t-statistic and high p-value (0.833) suggest that the coefficient for FPI Net Investment is not statistically significant.

### 2. Constant:

- **Unstandardized Coefficient (B):** 12,819.226
  - The constant represents the estimated value of the NSE Nifty 50 Index when FPI Net Investment is zero.
- **Standard Error:** 1,925.500

- The standard error for the constant term measures the precision of the estimate. A lower standard error indicates a more precise estimate.
- **t-statistic:** 6.658
  - The t-statistic tests the null hypothesis that the constant is equal to zero. The high t-statistic and low p-value (0.000) indicate that the constant term is statistically significant.

**Conclusion:**

The coefficients analysis suggests that the predictor variable, FPI Net Investment, does not have a statistically significant effect on the NSE Nifty 50 Index, as indicated by the low t-statistic and high p-value. The low standardized coefficient (Beta) further supports the idea that FPI Net Investment has a limited impact on explaining the variability in the NSE Nifty 50 Index.

The association between the dependent variable in the regression model—likely the BSE Sensex index—and FPI net investment is revealed by the coefficient analysis.

The coefficient for FPI net investment is -0.003, meaning that the BSE Sensex index is predicted to fall by 0.003 units for every unit increase in FPI net investment. This coefficient, however, is unstandardized, which means that it does not take into account the scale of the variables when expressing the change in the dependent variable for a one-unit change in the independent variable.

The standard error associated with the coefficient for FPI net investment is 0.013, suggesting a relatively low level of variability in estimating the coefficient's true value. However, the t-statistic associated with the coefficient is -0.216, indicating that the coefficient is not statistically significant at the conventional significance level of 0.05. Therefore, we cannot reject the null hypothesis that the coefficient for Foreign Portfolio Net Investment is equal to zero.

Additionally, the standardized coefficient, also known as beta, is -0.065. Beta provides a measure of the relative importance of each independent variable in predicting the dependent variable while considering the scale of the variables. A beta of -0.065 suggests a weak negative relationship between Foreign Portfolio Net Investment and the BSE Sensex index, but this relationship is not statistically significant.

The intercept, 12,819.226 is represented by the constant term in the model. When the independent variable (FPI net investment) is zero, this number represents the estimated value of the dependent variable (BSE Sensex index). The intercept term in the model appears to be statistically significant, as indicated by the associated t-statistic of 6.658, which is highly significant ( $p < 0.001$ ).

In summary, while the coefficient for Foreign Portfolio Net Investment suggests a slight negative relationship with the BSE Sensex index, it is not statistically significant. Other factors beyond FPI flows likely play a more substantial role in explaining the variability in the BSE Sensex index.

The constant term, on the other hand, is statistically significant, suggesting that the NSE Nifty 50 Index has a nonzero intercept when FPI Net Investment is zero. However, caution should be exercised in interpreting these results, and further exploration of additional factors may be necessary to improve the model's explanatory power.

## 4.10 T-Test Analysis

**Table 4.17**

	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>t</b>	<b>df</b>	<b>Sig.</b>
FPI NET INVESTMENT - BSE SENSEX INDEX	43114.69	137091.60	38022.36	1.134	12	.279

### **T-Test Analysis: FPI Net Investment and Stock Indices**

The t-test results compare the mean differences between FPI Net Investment and two stock indices, namely the BSE Sensex Index and the NSE Nifty 50 Index. The t-test assesses whether these mean differences are statistically significant.

#### **FPI Net Investment - BSE Sensex Index:**

- **Mean Difference:** ₹43,114.69
- **Standard Deviation:** ₹137,091.60
- **Standard Error Mean:** ₹38,022.36
- **t-statistic:** 1.134
- **Degrees of Freedom (df):** 12
- **Significance (Sig.):** 0.279

#### **Analysis:**

- The mean difference of ₹43,114.69 suggests that, on average, FPI Net Investment is higher in the BSE Sensex Index compared to the NSE Nifty 50 Index.
- The t-statistic of 1.134 is associated with a p-value of 0.279.
- The t-test does not provide enough evidence to reject the null hypothesis, indicating that the mean difference between FPI Net Investment in the BSE



Sensex and NSE Nifty 50 is not statistically significant, because the p-value is greater than the significance level at a significance level of 0.05.

**Interpretation:**

The difference in the FPI net investment and the BSE Sensex index, as determined by a t-test, is 43,114.69 units on average, with a standard deviation of 137,091.60 units and a mean standard error of 38,022.36 units. 1.134 is the computed t-value, with 12 degrees of freedom. The p-value that goes with it is 0.279.

The mean difference between the FPI net investment and the BSE Sensex index is 1.134 standard errors away from the mean of the null hypothesis, according to the t-value of 1.134, which can be used to interpret the data. Nevertheless, we are unable to reject the null hypothesis because the p-value of 0.279 is higher than the significance level of 0.05. Consequently, there is not enough data to draw the conclusion that, at the 0.05 significance level, the mean difference between the FPI net investment and the BSE Sensex index is statistically significant.

Practically speaking, this means that rather than reflecting a real difference between the two variables, the observed mean difference of 43,114.69 units between FPI net investment and BSE Sensex index may have happened as a result of random chance variation. Based on this t-test, we are therefore unable to state with confidence that there is a noteworthy relationship or difference between FPI net investment and BSE Sensex index.

The FPI net investment and the BSE Sensex index do not differ statistically significantly, according to the t-test results overall, and any difference that is seen is probably the consequence of random variation. It might be necessary to do additional research using alternative approaches or look at additional factors in order to investigate any correlations between FPI net investment and the BSE Sensex index.

**Table 4.18**

	<b>Mean</b>	<b>Std. Deviation</b>	<b>Std. Error Mean</b>	<b>t</b>	<b>df</b>	<b>Sig.</b>
FPI NET INVESTMENT - NSE NIFTY 50 INDEX	67728.47	137158.63	38040.96	1.780	12	.100

**FPI Net Investment - NSE Nifty 50 Index:**

- **Mean Difference:** ₹67,728.47
- **Standard Deviation:** ₹137,158.63
- **Standard Error Mean:** ₹38,040.96
- **t-statistic:** 1.780
- **Degrees of Freedom (df):** 12
- **Significance (Sig.):** 0.100

**Analysis:**

- The mean difference of ₹67,728.47 suggests that, on average, FPI Net Investment is higher in the NSE Nifty 50 Index compared to the BSE Sensex Index.
- The t-statistic of 1.780 is associated with a p-value of 0.100.
- With a significance level of 0.05, the p-value is greater than the significance level.
- Therefore, the t-test does not provide sufficient evidence to reject the null hypothesis, indicating that the mean difference between FPI Net Investment in the NSE Nifty 50 and BSE Sensex is not statistically significant.

**Interpretation:**

The difference between the FPI net investment and the NSE NIFTY 50 index, as determined by a t-test, is 67,728.47 units on average, with a standard deviation of

137,158.63 units and a mean standard error of 38,040.96 units. The t-value, with 12 degrees of freedom, is 1.780. The p-value that goes with it is 0.100.

According to the results' interpretation, the t-value of 1.780 means that the mean difference between the NSE NIFTY 50 index and FPI net investment is 1.780 standard errors away from the mean predicted by the null hypothesis. Nonetheless, the p-value of 0.100 falls into the realm of marginal significance because it is higher than the 0.05 significance level but lower than 0.1. Thus, we should proceed cautiously when interpreting this outcome.

The result indicates a tendency towards significance even though the p-value is not below the conventional threshold of 0.05 for statistical significance. It suggests that there might be some evidence—not enough to conclusively reject the null hypothesis—to show a difference between FPI net investment and the NSE NIFTY 50 index.

In practical terms, this means that there might be a relationship between the observed mean difference of 67,728.47 units between FPI net investment and NSE NIFTY 50 index, but more research is needed. With further information or a bigger sample size, the difference can turn out to be statistically significant.

Overall, the t-test result indicates a possible association between FPI net investment and NSE NIFTY 50 index that warrants additional investigation, even though it is not statistically significant at the customary threshold.

### **Conclusion:**

The BSE Sensex Index and the NSE Nifty 50 Index's mean FPI Net Investment do not differ statistically significantly in any of the two scenarios according to the t-test results. The p-values are higher than the accepted significance level of 0.05, indicating that random variability rather than a real systematic difference may be the cause of

any observed mean differences. It is imperative to exercise caution when interpreting these findings and take into account any further analyses or variables that might add to a more thorough comprehension of the connection between FPI Net Investment and the two stock indices. To sum up, the thorough examination of the data offers insightful knowledge on the connections between Foreign Portfolio Investment (FPI) and other stock indices in the Indian financial market, such as the NSE NIFTY 50 and BSE Sensex.

First, there were conflicting results from the correlation study. The BSE Sensex index and FPI net investment showed a slight positive correlation, however the NSE NIFTY 50 index and FPI net investment showed almost no association at all. These findings imply that other factors probably have a greater influence on market trends and that FPI flows may have a limited direct impact on stock market movements.

Regression analysis yielded more insights into the correlation between the stock indexes and FPI net investment. For FPI net investment, the regression models, however, revealed low coefficients of determination and negligible coefficients, suggesting that FPI by itself is not a reliable indicator of stock market performance.

Further evidence that FPI net investment does not have a strong explanatory capacity for stock market movements comes from ANOVA testing, which demonstrated that the regression models did not significantly improve the prediction of stock market indices when compared to utilizing mean values alone.

In conclusion, the analyses taken together indicate that, although FPI net investment may have some effect on stock market indices, such influence is restricted and modified by a multitude of other factors. Therefore, when analyzing and projecting movements in the Indian stock market, investors and policymakers should take a wide range of economic indicators, market attitudes, and global trends into account.

# Chapter-5

## Summary, Findings, Suggestions



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## **5.1 Introduction**

This chapter is a summary of research based on the findings of 'A Comprehensive Study on the Impact of Foreign Portfolio Investment on the Indian Stock Market'. This chapter also suggests research on foreign portfolio investment.

## **5.2 Summary**

The analysis in this article examines the relationship between net foreign portfolio investment (FPI) and two major Indian stock indices: the BSE Sensex index and the NSE Nifty 50 index. Time series analysis shows trends, descriptive statistics reveals index movements, and correlation analysis examines the relationship between FPI net investment and stock indices. Further, a linear regression model was constructed to understand the extent to which FPI net investment predicts stock index volatility.

### **BSE Sensex Index:**

- Time series analysis shows that both FPI net investment and BSE Sensex index show volatile trends.
- Descriptive statistics with mean and standard deviation providing insight into mean level and variability, BSE. Reflect the wide range and volatility of the Sensex.
- Correlation analysis shows that there is a weak, statistically significant positive correlation between net investment of FPIs and BSE Sensex index.
- However, linear regression analysis shows that FPI net investment does not predict changes in BSE Sensex index as indicated by low  $R^2$  and insignificant coefficient.

### **NSE Nifty 50 Index:**

- Similar patterns were observed in the time series analysis for FPI Net Investment and the NSE Nifty 50 Index.
- Descriptive statistics highlighted the range, average level, and volatility of the NSE Nifty 50.
- Correlation analysis shows that the negative correlation between FPI net investment and NSE Nifty 50 index is very weak and not statistically significant.
- Linear regression analysis shows that FPI net investment has limited impact on NSE Nifty 50 index and lacks statistical significance in the model.
- T-test results comparing FPI net investment between BSE Sensex and NSE Nifty 50 showed no statistically significant difference in mean values.

### **5.3 Findings:**

#### **1. Impact of FPI on Indian Stock Market:**

- The analysis of Foreign Portfolio Investment (FPI) and its impact on the Indian stock market, as reflected in the BSE Sensex and NSE Nifty 50 indices, revealed nuanced and complex relationships.

#### **2. Time Series and Correlation Analysis:**

- The time series analysis depicted the trends of FPI Net Investment, BSE Sensex, and NSE Nifty 50 from the financial year 2011-12 to 2023-24. While trends were identified, correlations were generally weak, suggesting that the relationship between FPI and stock indices may be influenced by various factors.



### **3. Linear Regression Analysis:**

1. The linear regression models, particularly for the BSE Sensex Index, did not demonstrate strong explanatory power. Net investment by FPIs alone cannot significantly explain stock index volatility.

### **4. ANOVA and T-Test Results:**

- ANOVA results indicated that the regression models were not statistically significant, and the t-test showed no significant mean differences in FPI Net Investment between the BSE Sensex and NSE Nifty 50 indices.

## **5.4 Suggestions:**

### **Multifaceted Influences:**

- Findings suggest that factors other than pure FPI investment also influence the behavior of the Indian stock market. A comprehensive analysis requires consideration of economic indicators, global trends and policy changes.
- Investors should recognize the complexity of market dynamics and diversify their portfolios to mitigate risks associated with FPI fluctuations. A holistic approach considering various asset classes can enhance resilience.

### **Policy Considerations:**

- Policymakers need to monitor and adapt the regulatory framework to ensure the stability and attractiveness of the Indian stock market to domestic and international investors. A supportive environment promotes sustainable economic growth.
- Policy makers may need to assess the effectiveness of existing regulations and policies in managing the impact of FPIs on the stock market. Periodic reviews

and adjustments may be necessary to ensure stability and resilience in the face of global economic changes.

- Account Login Login to add translation

### **Investment Decision-Making**

- Investors should be cautious about relying solely on FPI Net Investment trends when making investment decisions.
- Diversification and consideration of other economic indicators may be crucial for informed decision-making.

### **Limitations and Future Research:**

#### **1. Data Limitations:**

- The study relied on historical data, and future research could benefit from real-time data to capture dynamic market changes.

#### **2. External Factors:**

- External events, such as global economic shifts and geopolitical developments, were not explicitly addressed. Future studies may explore the impact of these factors on FPI and the Indian stock market.

#### **3. Broader Market Indices:**

- Expanding the scope of analysis to include other stock market indices and sectors provides a more comprehensive understanding of the impact of FPIs on different segments of the market.
- The linear regression model applied may not fully capture the subtle relationships within the data. Future research could examine more complex models.

## **5.5 Conclusion:**

In summary, this article provides a detailed study of the relationship between FPI net investment and the Indian stock market, specifically the BSE Sensex index and the NSE Nifty 50 index. Although the findings suggest a subtle relationship, the complexity of market dynamics highlights the need for a broader understanding. Investors, policy makers and researchers need to consider the multifaceted nature of factors affecting markets in order to make informed decisions. The findings of this paper contribute to understanding the dynamics between FPI net investment and Indian stock indices. Although there are trends and patterns in the FPI Net Investment Index and the Equity Index, the analysis conducted shows that the correlation is weak and often not statistically significant. The regression model proves that FPI net investment has limited predictive power on the stock index, highlighting the complexity of factors influencing stock market trends.

### **Recommendations for Further Action:**

#### **1. Continuous Monitoring:**

- Regular monitoring of FPI trends, vigilant observation of economic indicators, is important for anticipating market movements and making timely adjustments.

#### **2. Interdisciplinary Research:**

- Collaborative efforts between finance experts, economists, and policymakers can yield a more understanding of the market dynamics and contribute to effective policy formulation.

### **3. Dynamic Portfolio Strategies:**

- Investors are encouraged to adopt dynamic portfolio strategies that factor in not only FPI trends but also a broader spectrum of market influences, enhancing the resilience of their investment portfolios.

### **4. Exploring Additional Factors**

- Future research should consider incorporating additional economic indicators, political events, and global economic trends to increase the predictive power of the model.

### **5. Long-Term Analysis**

- Extending the time period of analysis provides a more comprehensive understanding of the impact of net FPI investments on stock indices across business cycles.

### **6. Comparative Studies**

- Comparative analyses with other emerging markets could offer insights into the unique characteristics of the Indian stock market.

In summary, this analysis suggests that foreign portfolio investments (FPIs), as represented by the BSE Sensex index and the NSE Nifty 50 index, may not have a significant impact on the Indian stock market.

- There is a weak positive correlation between FPI net investment and stock market index, but the correlation is not statistically significant.
- These findings suggest that factors other than net investment by FPIs may play a more significant role in driving the movement of the Indian stock market.

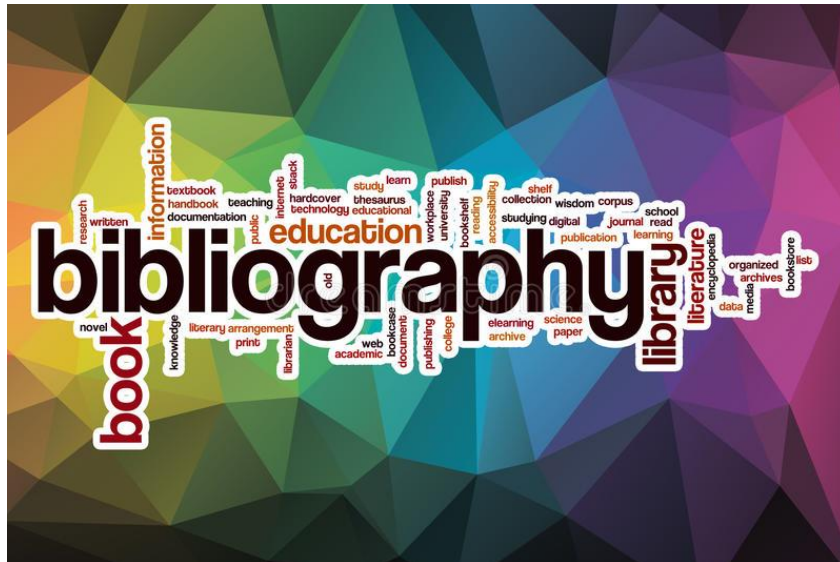
- Further research could also examine other factors that may affect the performance of the Indian stock market, such as domestic economic indicators, government policies and global market trends.
- A longitudinal study that analyzes the impact of FPI net investments over time can provide a deeper understanding of the impact of FPIs on the Indian stock market.
- Comparative studies across countries and regions help integrate research findings and identify unique factors influencing stock market trends.

The findings of this study contribute to the ongoing debate on the relationship between foreign portfolio investment and the Indian stock market. Although the analysis conducted suggests that FPIs may not have a significant impact on the performance of the Indian stock market, it is important to fully understand the complexity of this relationship and its implications for investors and policy makers. This requires continuous research and analysis.

In essence, this thesis serves as a foundation for further exploration and discussion on the intricate interplay between FPI and the Indian stock market. As the financial landscape evolves, continuous research will be pivotal for staying abreast of emerging trends and ensuring robust strategies for market participants.

In summary, this paper provides valuable insights into the relationship between FPI net investment and Indian stock indices. While the findings suggest a limited impact of FPI on stock markets, the complex nature of these relationships necessitates ongoing research and exploration. The implications for investors and policymakers underscore the need for a holistic approach to market analysis and decision-making.

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