IMPACT OF MACROECONOMIC INDICATORS ON INDIAN CURRENCY MOVEMENTS

Project Report

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By

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Under the guidance of

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DECLARATION

I **John Jose P** hereby declare that the Project Report entitled **Impact of Macroeconomic Indicators on Indian Currency Movements** has been prepared by me and submitted to the University of Calicut in partial fulfillment of requirement for the award of **Master of Business Administration**, is a record of original work done by me under the supervision of **Ms. Jis Jose Koreath, Assistant Professor**, Naipunnya Business School, Koratty East, Thrissur.

I also declare that this Project work has been submitted by me fully or partly for the award of any Degree, Diploma, Title or recognition before any authority.

Place: Koratty East, Thrissur **JOHN JOSE P**

Date**:** **YPAWMBA053**

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Place: Koratty East, Thrissur **JOHN JOSE P**

Date: **YPAWMBA053**

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IMPACT OF MACROECONOMICS INDICATORS ON INDIAN CURRENCY MOVEMENTS

I.1 Introduction

In today's interconnected global economy, understanding the intricate relationship between macroeconomic indicators and currency movements is paramount. This project delves into precisely this area of study, aiming to uncover how various macroeconomic factors impact the fluctuations in the Indian currency exchange rates.

At its core, the project focuses on analyzing the influence of key indicators such as GDP growth, inflation rate, interest rates, and trade balance on the movements of the Indian currency. By conducting a comprehensive analysis, the research seeks to identify the most significant macroeconomic drivers behind these currency movements.

The insights generated from this study hold immense value for policymakers, investors, and market participants. By gaining a deeper understanding of the factors driving Indian currency dynamics, stakeholders can make more informed decisions and develop effective risk management strategies.

In summary, this project serves as a comprehensive analysis of the impact of macroeconomic indicators on Indian currency movements. By shedding light on these connections, it empowers stakeholders to make informed decisions and adapt to the dynamic economic landscape with greater confidence.

1.1.1 Marco Economics Indicators:

- **Current Account Deficit**

  The Current Account Deficit (CAD) is like a balance sheet for a country, showing how much money it's earning from exports, income from overseas, and transfers, compared to how much it's spending on imports and transfers abroad. When the CAD gets bigger, it means the country is relying more on money from outside, which can affect how much its currency is worth and make exchange rates more unstable.

- **Inflation Rate**

  The Inflation Rate is like a measure of how prices are changing over time. If prices are going up too fast, it can hurt people's ability to buy things with the same amount of money. This makes investors worried and less confident about the value of the currency. But if inflation is low and prices are stable, it's better because people can plan their spending more easily, and investors feel more secure about the value of the Rupee.

- **GDP Growth Rate**

  Changes in GDP, which show how well the economy is doing, have a big impact on how much our currency is worth. When the economy is growing strongly, it usually makes our currency stronger too. This shows that the economy is doing well and gives investors more confidence to invest in our country. But when the economy isn't doing so well, it can make our currency weaker. This reflects worries and people moving their money out of the country.

- **Interest Rates**

  Interest rates, which are decided by central banks, are really important in deciding how much our currency is worth. When interest rates are high, it means people can make more money by putting their money in our country's banks. This attracts more foreign investors, which makes our currency stronger. But when interest rates are low, people might take their money elsewhere to get better returns. This can make our currency weaker because there's less demand for it.

- **Foreign Direct Investment**

  Foreign Direct Investment (FDI) is like when companies from other countries invest directly in businesses in our country. These investments play a big role in deciding how much our currency is worth. When there's a lot of FDI coming in, it shows that investors believe in our country's economy and its potential to grow. This makes our currency stronger because people feel more confident about investing in it. But if there's less FDI coming in, it can make our currency weaker because it suggests that people aren't as sure about investing in our country.

- **Crude Oil Prices**

  Changes in the prices of crude oil have a big impact on our currency because India buys a lot of oil from other countries. When oil prices go up, it costs more for India to buy oil, which can make it harder to balance the money coming in and going out. This can make our currency weaker because there's more pressure on it. But when oil prices go down, it's easier for India to afford oil imports, which can make our currency stronger because there's less pressure on it.

- **Stock Market Indices**

  Stock market indices are like scorecards for the stock market, showing if it's doing good or bad. When the market is doing well and prices are going up (bullish market), it means people are feeling good about the economy and want to invest more money. This can make our currency stronger because people from other countries might want to invest here, so they need our currency to do that.

- **Gold Prices**

  Gold is seen as a safe place to put money when things are uncertain in the economy or the world. When people worry about the economy or other risks, they often buy gold because it's considered stable. So, when the price of gold goes up, it usually means people are worried and want to put their money in something safe. This can also make our currency stronger because investors might sell other things and buy our currency to invest in gold.

1.1.2 Rupee Depreciation and Appreciation

- **Depreciation of the Rupee:** Depreciation occurs when the value of the rupee falls in the foreign exchange market relative to other currencies, such as the US dollar. For instance, if the exchange rate changes from Rs. 50 per dollar to Rs. 60 per dollar, it means that the rupee has depreciated. This depreciation indicates that the rupee has lost value, requiring more rupees to buy the same amount of dollars. The consequences of this depreciation are significant: imported goods become more expensive because more rupees are needed to purchase the same quantity of dollars to pay for imports. This can lead to higher costs for goods and services that rely on foreign inputs, potentially driving up overall inflation. Conversely, Indian exports become cheaper for foreign buyers, which can increase demand for Indian goods abroad, potentially boosting export-driven industries.

- **Appreciation of the Rupee**: Appreciation of the rupee means an increase in its value relative to other currencies. For example, if the exchange rate changes from Rs. 60 per dollar to Rs. 50 per dollar, the rupee has appreciated. This appreciation signifies that fewer rupees are now needed to purchase the same amount of dollars. The effects of a stronger rupee are multi-faceted: imports become cheaper because fewer rupees are required to buy dollars for imported goods. This can help control inflation by reducing the cost of imported goods and services. However, Indian exports become more expensive for foreign buyers, which may reduce demand for these goods abroad and potentially hurt export-driven sectors of the economy.
- **Devaluation of Currency:** Devaluation refers to the intentional reduction in the value of a country's currency relative to other currencies or a standard such as gold. This economic strategy is typically employed to correct a trade imbalance, where a country is importing more than it is exporting, leading to a deficit in its balance of payments. By lowering the currency's value, a country can make its exports cheaper and more attractive to foreign buyers, while making imports more expensive. This can help to reduce the trade deficit by boosting exports and curbing imports. Additionally, devaluation can stimulate economic growth by increasing demand for domestically produced goods and services.

1.2 Statement of the Problem

Understanding the volatility of the Indian Rupee is critical for maintaining economic stability, making informed policy decisions, and aiding businesses in risk management. The Indian Rupee's fluctuations are influenced by various macroeconomic indicators, including the current account deficit, inflation rate, GDP growth rate, interest rate, foreign direct investment, crude oil prices, stock market indices, and gold prices. However, the precise impact of these indicators on the currency's movements is not well understood, creating challenges for effective economic planning and financial decision-making. This project is chosen to systematically analyze these macroeconomic factors to address the gap in understanding their specific effects on the Indian Rupee, thereby providing insights for better economic strategies and financial management.

1.3 Objectives of the Study

- To analyse the relationship between key macroeconomic indicators and the movements of the Indian currency.
- To determine the extent to which changes in these macroeconomic indicators influence the fluctuations in the Indian currency exchange rates.
- To identify the most significant macroeconomic indicators that have a substantial impact on Indian currency movements

1.4 Scope of the Study

The scope of the study encompasses an in-depth analysis of the relationship between various macroeconomic indicators and the movements of the Indian currency exchange rates. The study will focus on examining the impact of key indicators such as Current Account Deficit, Inflation Rate, GDP Fluctuations, Interest Rates, Foreign Direct Investment, Crude Oil Prices, Stock Market Indices, and Gold Prices on the Indian currency. Furthermore, the research will investigate the extent to which changes in these indicators influence the fluctuations in the Indian currency exchange rates, thereby identifying the most significant factors driving such movements. Additionally, the scope of the study includes determining the causal relationships between macroeconomic indicators and Indian currency movements, providing valuable insights for policymakers, investors, and market participants to better understand and anticipate currency fluctuations in the Indian economy.

1.5 Research Methodology

1.5.1 Research Design

In this quantitative research design, the study aims to examine how various macroeconomic indicators influence currency movements in India over a specific time period. The selected indicators include current account deficit, inflation rate, GDP fluctuations, interest rates, foreign direct investment, crude oil prices, stock market indices, and gold prices. By analyzing these indicators, the study seeks to understand the relationships between economic factors and currency fluctuations. For instance, fluctuations in the current account deficit may impact investor confidence and affect the value of the currency, while changes in inflation rates or interest rates can influence foreign exchange flows. Through statistical analysis, such as correlation and regression, this study will provide insights into the complex interplay between macroeconomic factors and Indian currency movements, contributing to a better understanding of the dynamics of the country's economy.

1.5.2 Sources of Data

For this study, secondary data sources will be employed to gather information from various reputable sources. Reports from the Reserve Bank of India (RBI) and the Ministry of Finance will provide comprehensive data on macroeconomic indicators such as inflation rates, GDP fluctuations, interest rates, and foreign direct investment. Additionally, trading platforms will offer real-time data on currency exchange rates, while economic databases will provide historical data on crude oil prices, stock market indices, and gold prices. Scholarly articles will be consulted to gather insights and analysis from existing research studies on the relationship between macroeconomic indicators and currency movements in India. By utilizing these diverse secondary data sources, the study aims to ensure the robustness and reliability of the data, enabling thorough analysis and interpretation of the findings.

1.5.3 Nature of the study

The nature of this study is exploratory and descriptive, focusing on uncovering and analyzing the connections between various macroeconomic indicators and the movements of the Indian currency, specifically examining exchange rate fluctuations. Through an in-depth examination of macroeconomic factors such as current account deficit, inflation rate, GDP fluctuations, interest rates, foreign direct investment, crude oil prices, stock market indices, and gold prices, the study aims to shed light on the intricate relationship between these variables and the Indian currency's value in the global market. By employing statistical analysis and examining historical data, the study seeks to provide insights into how changes in these macroeconomic indicators influence currency movements, offering valuable information for policymakers, investors, and stakeholders interested in understanding and managing currency dynamics in the Indian economy.

1.5.4 Tools of data analysis

- Regression analysis is critical for to quantify the relationship between Indian currency movements (INR/USD exchange rate) and various macroeconomic indicators such as Current Account Deficit, Inflation Rate, GDP Growth Rate, Repo Rate, FDI Inflows, Brent Crude Prices, BSE Sensex, and Gold Prices. This tool helps in understanding how changes in each of these indicators can predict changes in the currency exchange rate. By providing regression coefficients, it enables to determine the strength and direction of these relationships, which is essential for identifying which economic factors have the most significant impact on the Indian currency.
- Simple correlation analysis is employed to determine the degree of association between Indian currency movements and each macroeconomic indicator individually. This method provides a straightforward assessment of the strength and direction of the relationship between two variables. For instance, it helps determine whether higher inflation rates are associated with a weaker INR or whether higher GDP growth rates are linked to a stronger INR. Using simple correlation analysis is

crucial for identifying potential predictors of currency movements, which can then be further explored using more complex analytical techniques.

1.5.5 Period of Study

The period of the study spans 8 weeks or 56 days, starting from April 1st and ending on May 26th. Throughout this timeframe, the study focused on analyzing the influence of macroeconomic indicators on the movements of the Indian currency, utilizing data spanning the last 13 (20101– 2023) years.

1.6 Limitation of the Study

- Economic indicators are reported less often than daily exchange rates, affecting accuracy.
- The study depends on existing data, so its accuracy varies with data quality.
- Effects of economic indicators on currency can be delayed, needing complex modeling that the study might not cover.

1.7 Industry Profile

Financial services are economic services provided by the finance industry, which together encompass a broad range of service sector firms that provide financial management, including credit unions, banks, credit card companies, insurance companies, accountancy companies, consumer-finance companies, stock brokerages, investment funds, individual asset managers, and some government-sponsored enterprises.

1.7.1 World scenario of Foreign Exchange

The foreign exchange (FX) market is currently the biggest and most liquid financial market on the planet as of the cutoff date in September 2021. Banks, financial organizations, businesses, governments, and private traders are just a few of the participants who buy and sell currencies to one another in this activity. Please keep in mind, though, that the world circumstances can have changed since then and that I don't have access to real-time data. According to data up to September 2021, the following is a snapshot of the global foreign exchange market:

Market Size: It is estimated that the daily trading volume in the currency market is over $6.6 trillion. It is available around the clock, seven days a week, in London, New York, Tokyo, and Singapore, among other important financial hubs. Major Currencies: The forex market involves trading in pairs of currencies. The U.S. dollar (USD), euro (EUR), Japanese yen (JPY), British pound (GBP), Swiss franc (CHF), Canadian dollar (CAD), and Australian dollar (AUD) are some of the most commonly traded currencies.

Foreign exchange market trends

Exchange Rate Determination: A number of variables, such as interest rates, economic indicators (such as GDP, inflation, and employment data), geopolitical developments, central bank policies, and market sentiment, have an impact on exchange rates. Exchange rates are heavily influenced by supply and demand dynamics in the currency market.

Instruments for Trading Currencies: Spot transactions, forwards, futures, and options are only a few of the instruments available for trading currencies. Spot transactions involve the instantaneous exchange of currencies at the going rates of the market, whereas forward, future, and option contracts give traders the opportunity to insure against currency fluctuations or speculate on potential changes in exchange rates in the future.

Role of central banks: it is important in the foreign exchange market. By adjusting interest rates, engaging in open market transactions, and intervening in the currency markets, they can affect exchange rates through monetary policy. Forex traders and investors constantly monitor the activities and remarks of central banks for potential market repercussions. Retail Forex Trading: A rising number of retail traders, in addition to institutional participants, are using online trading platforms to trade currencies. Despite the fact that trading in the forex market contains inherent risks and necessitates rigorous risk management, these platforms give people the chance to bet on currency pairs using leverage.

Technological Developments: The forex market has adopted new technologies, with electronic trading platforms taking over as the main method of carrying out transactions. Increasing market efficiency and liquidity are automated trading systems. Algorithmic trading, and high-frequency trading.

The currency market Is extremely volatile and vulnerable to changes based on economic and geopolitical variables; it is vital to remember this. It is advised to speak with seasoned forex professionals, refer to real-time market data, and read financial news sources in order to stay current on the current foreign currency market environment.

1.7.2 Indian scenario of Foreign Exchange

In contrast to the scale that the market experienced in the wake of the East Asian crises and the 9/11 terrorist attacks, the Indian forex market has recently experienced a significant level of volatility. The changes occurring in the Indian foreign exchange market have greatly improved the outlook for the Indian economy in the current fiscal year. These conditions have been aided by the country's currency reserves rising to a high of US$ 116 billion as of April 9, 2004. As a result, the value of the Indian rupee has been continuously increasing, which has sped up the repatriation of export proceeds and remittances from expatriates.

1.7.3 State scenario of Foreign Exchange

The foreign exchange market is the largest financial market in the world, with an estimated daily turnover of over $6 trillion. The foreign exchange market is a decentralized market where currencies are traded. The exchange rate is the price at which one currency can be exchanged for another currency. The exchange rate is influenced by various factors such as economic and political conditions, interest rates, and market sentiment. The foreign exchange market Is open 24 hours a day, five days a week, and is accessible to anyone with an internet connection. The market is divided into different levels of access. At the top level are the interbank market participants. Which include large commercial banks, central banks, and institutional investors. The next level down is the retail market, which includes small businesses and individual traders. The foreign exchange market Is highly liquid, which means that it is easy to buy and sell currencies. The market is also highly volatile, which means that exchange rates can change rapidly. The volatility of the market creates opportunities for traders to profit from currency fluctuations. Foreign exchange trading can be done through various methods such as spot trading, forward contracts, and options. Spot trading is the most common form of foreign exchange trading, where currencies are bought and sold for immediate delivery. Forward contracts are agreements to buy or sell currencies at a future date at a predetermined price. Options give traders the right, but not the obligation, to buy or sell currencies at a predetermined price at a future date. The foreign exchange market Is influenced by various factors such as economic and political conditions, interest rates, and market sentiment. Economic conditions such as inflation, unemployment, and economic growth can affect exchange rates. Political conditions such as elections, government policies, and geopolitical tensions can also affect exchange rates. Interest rates can affect exchange rates by influencing capital flows. Market sentiment can affect exchange rates by creating demand for certain currencies.

In conclusion, the foreign exchange market is a complex and dynamic market that is influenced by various factors. The market provides opportunities for traders to profit from currency fluctuations, but it is also highly volatile and risky. Traders should have a thorough understanding of the market and its mechanisms before engaging in foreign exchange trading.

1.7.4 Global scenario of Mutual Fund

Mutual funds are investment vehicles that pool money from multiple investors to invest in a diversified portfolio of securities such as stocks, bonds, and money market instruments. Mutual funds are managed by professional fund managers who make investment decisions on behalf of the investors. Mutual funds are popular investment options for individual investors due to their ease of use, diversification, and professional management. The global mutual fund industry has grown significantly in recent years, with assets under management reaching over $50 trillion in 2021. The growth of the mutual fund industry has been driven by various factors such as the increasing popularity of passive investing, the growth of retirement savings, and the increasing demand for sustainable and socially responsible investments. Passive investing has become increasingly popular in recent years, with investors seeking low-cost investment options that track the performance of an index. Passive mutual funds, also known as index funds, have grown significantly in popularity due to their low fees and simplicity. Index funds track the performance of an index such as the S&P 500 and provide investors with exposure to a diversified portfolio of stocks. The growth of retirement savings has also driven the growth of the mutual fund industry. Many investors use mutual funds as a way to save for retirement due to their diversification, professional management, and ease of use. Retirement-focused mutual funds such as target-date funds have become increasingly popular due to their simplicity and automatic rebalancing. The Increasing demand for sustainable and socially responsible investments has also driven the growth of the mutual fund industry. Investors are increasingly seeking investments that align with their values and beliefs. Mutual funds that focus on sustainable and socially responsible investments have grown significantly in popularity in recent years. The global mutual fund Industry is highly regulated, with regulations varying by country. In the United States, mutual funds are regulated by the Securities and Exchange Commission (SEC). The SEC regulates mutual funds to protect investors and ensure that mutual funds are managed in the best interests of investors. In conclusion, the global mutual fund industry has grown significantly in recent years, driven by various factors such as the increasing popularity of passive investing, the growth of retirement savings, and the increasing demand for sustainable and socially responsible investments. Mutual funds provide individual investors with a simple and diversified way to invest in a portfolio of securities managed by professional fund managers. The mutual fund industry is highly regulated to protect investors and ensure that mutual funds are managed in the best interests of investors

1.7.5 Indian scenario of Mutual Fund

The mutual fund industry in India has witnessed significant growth in recent years. The industry has grown from INR 7.01 trillion in 2014 to INR 34.44 trillion in 2021. The growth of the mutual fund industry in India can be attributed to various factors such as the increasing popularity of mutual funds among retail investors, the growth of systematic investment plans (SIPs), and the increasing demand for equity- oriented funds. Mutual funds have become increasingly popular among retail investors in India due to their ease of use, diversification, and professional management. Mutual funds provide individual investors with access to a diversified portfolio of securities managed by professional fund managers. The growth of the mutual fund industry in India has been driven by the increasing awareness among retail investors about the benefits of mutual funds and the ease of investing through online platforms. The growth of Systematic Investment Plans (SIPs) has also driven the growth of the mutual fund industry in India. SIPs allow investors to invest a fixed amount of money in mutual funds at regular intervals such as monthly or quarterly. SIPs provide investors with a disciplined approach to investing and help to reduce the impact of market volatility on their investments. The increasing popularity of SIPs has led to a significant increase in the number of retail investors in the mutual fund industry in India. The demand for equity-oriented funds has also increased significantly in recent years. Equity-oriented

funds invest a majority of their assets in equities and provide investors with exposure to the stock market. The increasing demand for equity-oriented funds can be attributed to the strong performance of the Indian stock market in recent years and the increasing awareness among investors about the benefits of long-term investing in equities. The mutual fund Industry in India is regulated by the Securities and Exchange Board of India (SEBI). SEBI regulates mutual funds to protect investors and ensure that mutual funds are managed in the best interests of investors. SEBI has introduced various regulations in recent years to increase transparency and protect the interests of investors.

In conclusion, the mutual fund industry in India has witnessed significant growth in recent years, driven by various factors such as the increasing popularity of mutual funds among retail investors, the growth of SIPs, and the increasing demand for equity-oriented funds.

Structure of Mutual Fund in India

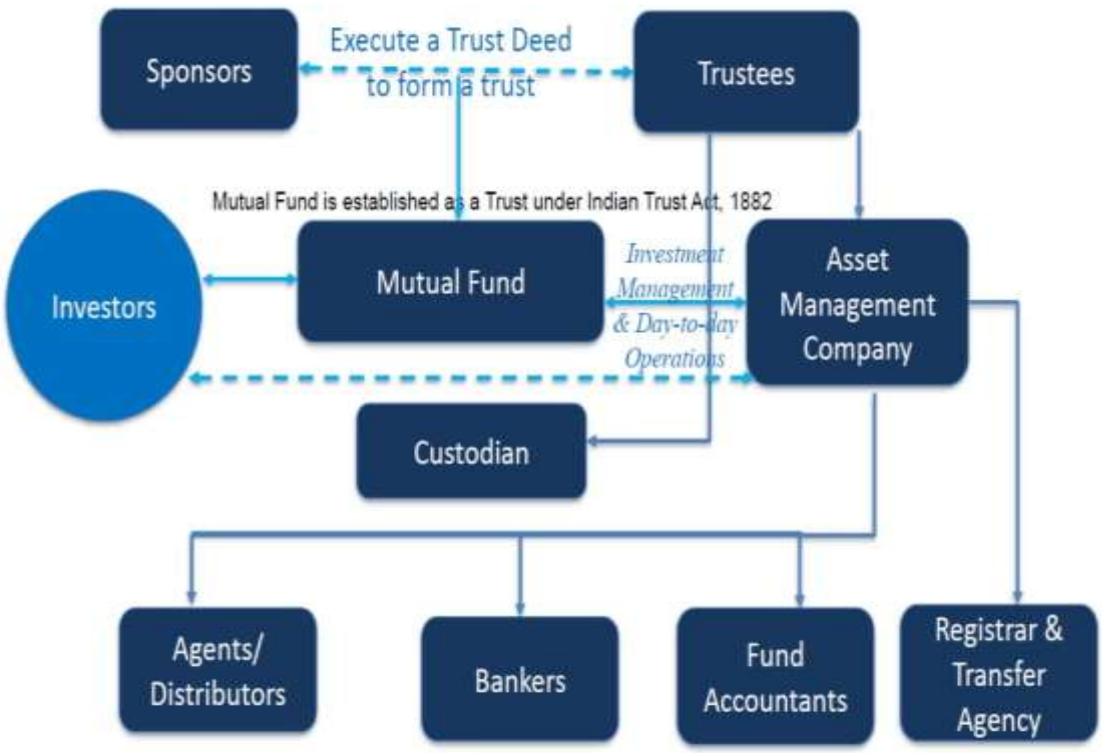

Figure No: 1.7.5 Structure of Mutual Funds

The structure of mutual funds in India starts with the sponsor, who creates the trust, hires the trustee, and then hires an AMC to launch mutual funds. The three-tier structure of a mutual fund includes the sponsors, trustees, and asset management companies (AMCs). The sponsor of a mutual fund is the fund's creator, who creates a body of trustees and hires an AMC. A trust is a mutual fund and is created under the Indian Trusts Act 1882. The trustee, or board of trustees (BOT), is responsible for overseeing the work of the trust internally. Asset management companies are the companies that manage all the work of the mutual fund with the help of a fund manager and other parties. Other participants in the structure of mutual funds include the custodians, RTAS, fund accountants, auditors, brokers, dealers, and intermediaries. The mutual fund structure diagram starts with creating the trust and ends with the distribution of units by the agents or distributors. An example of a fund house structure includes Axis Bank as a sponsor, Axis Mutual Fund Trustee Limited as a trust, and Axis Asset Management Company Limited as an AMC.

Growth of Mutual Funds in India

By 1970, the industry had 361 Funds with a total asset value of 47.6 billion USD in the hands of 10.7 million shareholders. However, from 1970 onwards, rising interest rates, stock market stagnation, inflation, and investors' various reservations about the profitability of mutual funds hampered mutual fund growth. As a result, mutual funds recognized the need to offer new types of mutual funds that were in line with evolving investor needs and interests. Funds with no sales commission, known as "no load" funds, were introduced in the 1970s. Vanguard Funds, founded by John Bogle in 1977, is the largest and most successful no-load fund family. The first Money Market Mutual Fund (MMMF), i.e. The Reserve Fund, was launched in November 1971 as part of a series of new products. This new approach signalled a significant shift in the Mutual Fund Industry. Most importantly, it introduced new small and individual investors to the notion of mutual funds and inspired a wave of creativity in the business.

Major mutual funds in India

- ICICI Prudential mutual fund
- HDFC Mutual Fund
- SBI Mutual Fund
- Axis Mutual Fund
- Tata mutual fund
- Kotak Mahindra bank
- Reliance industries limited
- UTI Mutual Fund

ICICI Prudential Mutual Fund

ICICI Prudential Mutual Fund is an Indian asset management firm created in 1993 as a joint venture between ICICI Bank and Prudential plc. After the SBI Mutual Fund, it is India's second-largest asset management firm. The corporate headquarters of ICICI Prudential Mutual Fund are located in Mumbai's Bke district. It has evolved from two locations and six staff in 1998 to over a thousand employees across 120 locations and over 1.9 million investors in 2016. The AMC oversees considerable assets under management (AUM) in the Mutual Fund market across asset classes. The AMC also provides Portfolio Management Services and a Real Estate Division for investors across the country, as well as International Advisory Mandates for clients in international markets. ICICI Prudential Mutual Fund's competitors in the mutual fund sector are HDFC Mutual Fund, Kotak Mutual Fund, Nippon India Mutual Fund, SBI Mutual Fund, Axis Mutual Fund, Birla Sun Life Mutual Fund, and UTI Mutual Fund.

HDFC Mutual Fund

HDFC Mutual Fund, one of India's major mutual fund organizations, has Rs 449169 crore in assets under administration as of February 2023. The company was founded in 1999 as a joint venture between HDFC Limited and Investment Management Limited, and it became a publicly traded entity in August 2018. The fund manager has a strong presence in equities investments, accounting for 10.91% of the industry's AUM. As of March 31, 2022, it had 9.9 million active retail and Institutional customers.

- HDFC Mutual Fund offers approximately 108 primary schemes.
- Of the 108 schemes, 58 are debt funds, 33 are equity-oriented, 6 are hybrid schemes, and 11 others (ETFs, Gold, FoFs, etc.).

  The company's vision: To be the most respected Asset Manager in the world and the mission is to be the wealth creator for every Indian.

Top HDFC Mutual Funds

- HDFC Small Cap Fund
- HDFC Mid-Cap opportunities Fund
- HDFC Focused 30 Fund
- HDFC Infrastructure Fund

SBI Mutual Fund

SBI Mutual Fund is an Asset Management Company founded in 1987 by State Bank of India (SBI), with its corporate headquarters in Mumbai, India. SBIFMPL is a partnership between the State Bank of India, a public sector bank in India, and Amundi, a European asset management firm. SBI and AMUNDI Asset Management agreed into a shareholder agreement in this regard on April 13, 2011. As a result, SBI presently owns 63% of SBIFMPL, while AMUNDI Asset Management owns 37% through a wholly owned subsidiary, Amundi India Holding. SBI and AMUNDI Asset Management will work together to establish the company into an asset management firm of international renown by implementing global best practices and adhering to international standards. Axis Mutual Fund, Birla Sun Life Mutual Fund, HDFC Mutual Fund, ICICI Prudential Mutual Fund, Kotak Mutual Fund, Nippon India Mutual Fund, and UTI Mutual Fund are among SBI Mutual Fund's significant competitors in the mutual fund business. Products and services

- Equity
- Debt
- Hybrid

Axis Mutual Fund

Axis Mutual Fund is an Indian asset management firm. It was founded in 2009 and has its headquarters in Mumbai. Axis Mutual Fund provides a variety of mutual fund schemes for investment in India, including equity funds, hybrid funds, debt funds, and others. Axis Mutual Fund launched its first equity programme. Axis Equity Fund, in

2009. Schroders, an asset management firm, purchased a 25% investment in Axis Mutual Fund in April 2012. In September 2019, Axis Mutual Fund launched the Axis Nifty 100 Index fund, which is based on the Nifty 100. The company will introduce an ESG fund on January 22, 2020.

Tata Mutual Fund

Tata Mutual Fund is India's thirteenth largest mutual fund house by asset size. For the fiscal quarter ending June 30, 2020, the investment house manages assets of Rs 48,202.34 crore (AUM). The fund house's asset size declined by 9.30% from the March 2020 quarterly report. The fund house has been around for over 24 years. Tata Mutual Fund is a subsidiary of the Tata Group, a well-known and one of the country's largest industrial conglomerates. The organization is well-known and regarded for its dedication to corporate ethics. Tata Sons Limited owns 67.91% of the fund house, while Tata Investment Corporation Limited owns the remaining 32.09%. The fund house's primary strength is founded on its intellectual capital and comprehensive risk management system. The fund house is built on three key pillars: performance, service, and trust. It provides its investors with a well-structured, research-driven, and diverse class of funds from which to invest based on their financial needs and risk profile. It also provides portfolio management services to high-net-worth individuals and consultancy services to overseas investors investing in India.

Kotak Mutual Fund

Kotak Mahindra Asset Management Company Limited (KMAMC) is the asset manager for the Kotak Mahindra Mutual Fund (KMMF). KMAMC began operating in December 1998 and currently has around 74 lac investors in various schemes. Kotak Mutual Fund was founded in December 1998 as a wholly-owned subsidiary of Kotak Mahindra Bank Limited. It will be the first Indian Mutual House to launch a Global REIT Fund of Funds in December 2020.

Products and Services

The Kotak Mutual Fund invests in an institutionalized manner. It consists of the following components: investment universe, research, concept generation, company meeting and idea discussion, investment report, portfolio action, and ongoing evaluation. The fund manager makes all portfolio decisions.

Nippon India Mutual Fund

Nippon India Mutual Fund (NIMF) is one of India's leading mutual funds, with Rs 2,93,159 crores in average assets under management (AAUM) (Jan 2023 to Mar 2023 QAAUM) and 196.24 lakh folios (as of 31st March 2023). NIMF, one of India's fastest growing mutual funds, provides investors with a well-rounded portfolio of products to address diverse investor needs and has a presence in 270 locations (as of March 31, 2023) across the country. To add value to investors, NIMF is always developing new products and customer service initiatives.

The Nippon India Mutual Fund (NIMF) was formed as a trust under the Indian Trusts Act of 1882. The Sponsor is Nippon Life Insurance Company (NLI), and the Trustee is Nippon Life India Trustee Ltd (NLITL). The Securities and Exchange Board of India (SEBI) has approved Nippon India Mutual Fund. Reliance Mutual Fund was renamed Nippon India Mutual Fund (NIMF). Effective September 28, 2019, the name of the mutual fund was changed from Reliance Mutual Fund to Nippon India Mutual Fund. The NIMF was established to launch various schemes in which units are issued to the public with the goal of contributing to the capital market and providing investors with possibilities to participate in varied assets.

Major competitors:

- Aditya Birla Sun Life AMC Ltd. BIRSUA.
- HDFC Asset Management Company Ltd. HDFASS.
- Shriram Asset Management Company Ltd. SHRASS.
- UTI Asset Management Company Ltd. UTIASS.

UTI Mutual Fund

As of September 2017, UTI Mutual Fund was the oldest and largest mutual fund in India, with over 10 million investor accounts under its 230 domestic schemes/plans. UTI Mutual Fund has a nationwide distribution network that spans the entire country. It has 48000 AMFI/NISM certified Independent Financial Advisors and 174 Financial Centers in its distribution network. UTI Mutual Fund was a pioneer in the development of various schemes, including the UTI Unit Linked Insurance Plan (ULIP) with life and accident cover (launched in 1971), UTI Master Share (launched in 1986), India's first Offshore Fund - India fund (launched in 1986), and UTI Wealth Builder Fund, the first of its kind in the Indian mutual fund industry combining different asset classes, i.e., equity, debt, and real estate.

Major UTI Mutual Funds in India:

- UTI Mid Cap Fund
- UTI Core Equity Fund
- UTI Liquid cash Fund
- UTI Money market Fund
- UTI Equity savings Fund
- UTI Flexi Cap Fund
- UTI Hybrid Equity Fund

1.7.6 State scenario of Mutual Fund

The mutual fund industry in Kerala is a growing industry, although it is relatively small compared to other states in India. As of March 2021, the mutual fund industry's assets under management (AUM) in Kerala stood at INR 14,000 crores. The growth of the mutual fund industry in Kerala can be attributed to various factors such as the increasing popularity of mutual funds among retail investors, the growth of systematic investment plans (SIPs), and the increasing demand for equity-oriented funds. One of the key drivers of the mutual fund industry in Kerala has been the increasing popularity of mutual funds among retail investors. Mutual funds provide individual investors with access to a diversified portfolio of securities managed by professional fund managers.

The growth of the mutual fund industry in Kerala has been driven by the increasing awareness among retail investors about the benefits of mutual funds and the ease of investing through online platforms. Another factor that has contributed to the growth of the mutual fund industry in Kerala is the growth of systematic investment plans (SIPs).

SIPs allow investors to invest a fixed amount of money in mutual funds at regular intervals such as monthly or quarterly. SIPs provide investors with a disciplined approach to investing and help to reduce the impact of market volatility on their investments. The increasing popularity of SIPs has led to a significant increase in the number of retail investors in the mutual fund industry in Kerala. The demand for equity oriented funds has also increased significantly in recent years. Equity-oriented funds invest a majority of their assets in equities and provide investors with exposure to the stock market. The increasing demand for equity-oriented funds can be attributed to the strong performance of the Indian stock market in recent years and the increasing awareness among investors about the benefits of long-term investing in equities. The mutual fund Industry in Kerala is regulated by the Securities and Exchange Board of India (SEBI). SEBI regulates mutual funds to protect investors and ensure that mutual funds are managed in the best interests of investors. SEBI has introduced various regulations in recent years to increase transparency and protect the interests of investors. In conclusion, the mutual fund industry in Kerala is a growing industry. Driven by various factors such as the increasing popularity of mutual funds among retail investors, the growth of SIPs, and the increasing demand for equity-oriented funds. The mutual fund industry in Kerala is regulated by SEBI to protect investors and ensure that mutual funds are managed in the best interests of investors.

1.7.7 Global scenario of trade market

Since the commencement of the “Financial Crisis” in 2008, the global economy has been growing slowly, but it is finally beginning to show indications of recovery. The IMF predicted that global GDP growth will accelerate from 3.2% in 2016 to 3.6% in 2017 and then to 3.7% in 2018. The US, UK, and other developed market economies. As well as Europe, have seen an increase in economic activity. Global demand has increased and is anticipated to continue to rise. The performance of the developing and emerging market economies has been uneven. Demand for investments has been driving the acceleration of global demand.

1.7.8 Indian scenario of trade market.

As a result of the global COVID-19 pandemic, the Indian economy has slowed down. But bilateral commerce in products and services between the United States and India increased from \$120.6 billion in 2020 to \$159.1 billion in 2021, indicating a strong commercial partnership between the two countries. Further, the IMF predicted that Indian GDP growth will reach 9.0 percent in 2021 after declining by 7.3 percent in 2020. In 2022, 6.4 percent growth in the Indian economy is predicted. With sales of \$56.8 billion in U.S. products and services, India climbed three spots to take the ninth spot as the United States' largest trade partner in 2021. India's greatest commercial partner continues to be the United States, with exports of goods and services to that country totalling \$102.3 billion. The trade gap between the United States and India remained at \$45.5 billion in 2021.

In 2020, FDI of Indian origin into the US was valued at \$12.7 billion, a little decline of \$179 million from the year before. As of 2020, about 70,700 American employments were supported by India's direct investment in the country. Indian FDI investments were concentrated in the software, business services, pharmaceuticals, and industrial equipment industries. In 2020, FDI from the United States into India was worth \$41.9 billion

In the majority of categories, there are numerous American businesses operating in the Indian market. But the Indian government has pushed "self-reliance" as a way to grow and support Indian firms and jobs, which is making it harder for American enterprises to sell their products and services in India. When there are options created in India, this is especially true for government purchases in India. Exporters from the United States are under pressure to begin producing their goods locally in order to maintain access to the market, particularly if comparable products are not already manufactured in India. India has put up hurdles to market access as part of its self-reliance movement, including tariffs, localization requirements, indigenous standards requirements and labelling practices, price controls, and import limitations.

Despite these obstacles to market access, India continues to present major business prospects for American businesses, and there is tremendous potential to boost bilateral commerce. Indian conglomerates and high-tech firms are typically on par in sophistication and prominence with their international rivals, and in some industrial sectors, like information technology, telecommunications, pharmaceuticals, textiles, and engineering, they are renowned for their innovation and competitiveness on a global scale. American businesses with operations in India stress that success necessitates long-term planning horizons and a state-by-state approach to adapt to the complexity and diversity of India’s regional marketplaces.

1.7.9 State scenario of trade market

The trade market in Kerala is a significant contributor to the state’s economy. Kerala has a long history of trade and commerce, dating back to ancient times when it was a major Centre of trade with the Middle East, Europe, and China. Today, Kerala’s trade market is driven by various factors such as the state’s strategic location, the presence of major ports and airports, and the state’s robust infrastructure. One of the key drivers of the trade market in Kerala is the state’s strategic location. Kerala is strategically located on the southwestern coast of India, making it an ideal gateway to the Middle East, Europe, and Southeast Asia. The state is well connected to major ports and airports, providing easy access to global markets. This strategic location has made Kerala an important Centre of trade and commerce in the region. The presence of major ports and airports in Kerala has also contributed significantly to the growth of the trade market in the state. Kerala has two major ports, the Kochi and Kozhikode ports, which are among the busiest ports in India. These ports provide easy access to global markets and have played a key role in the growth of the export sector in the state. Kerala also has three international airports, the Cochin International Airport, the Trivandrum International Airport, and the Calicut International Airport, which provide easy access to global markets and have contributed significantly to the growth of the trade market in the state Kerala’s robust infrastructure has also played a key role in the growth of the trade market in the state. Kerala has a well-developed road and rail network, which provides easy access to major markets in India. The state also has a well-developed power and water supply infrastructure, which has helped to attract investments in the state. Kerala's robust infrastructure has made it an attractive destination for businesses looking to set up operations in the state. The trade market In Kerala is diverse, with various sectors contributing to the state's economy. The major sectors contributing to the trade market in Kerala include spices, coir, marine products, rubber, and tourism. Kerala is known for its high-quality spices, which are exported to various countries around the world. The coir industry is also a major contributor to the state's economy, with Kerala accounting for over 70% of India's coir production. Kerala is also a major producer of marine products, with the state's coastal areas providing a rich source of fish and other seafood.

1.8 Company Profile

Ahalia FinForex Limited is an unlisted public company incorporated on 20 November, 2001. It is classified as a public limited company and is located in Kochi, Kerala. Its authorized share capital is INR 43.00 cr and the total paid-up capital is INR 39.72 cr.

1.8.1 History of Ahalia FinForex LTD

Ahalia Group of companies, which presently consists of entities operating in healthcare, forex, retail loans, remittance services, education, etc. covering the Middle East countries, United Kingdom and India, had a humble beginning about a quarter century ago in the United Arab Emirates. It all began when an enterprising medical professional hailing from the eastern end of the erstwhile spice route decided to put to practice his vision of serving the humanity. During the last three decades, the perseverance with which we, the Ahalians, have imparted 'Customer Delight' helped us grow into an empire, deriving momentum more from the word of- mouth propaganda by our valued customers than through our own promotions in the mass media.

1.8.2 Vision and Mission

Our mission is to reach each and every one, who is in need of financial service, through our eloquent ambassadors. At present, Ahalia Money Exchange and Financial Services Pvt Ltd has 55 branches across almost all districts of Kerala, and we are still growing. We aspire to provide progressive, responsive and proactive services to our esteemed customers at all touch points through constant innovation and improvisation with a view to exceeding the customer's needs, aspirations and expectations.

1.8.3 Products and Services

No	Category	Service offered
1	Ahalia Finance	Car Loan
		Gold Loan
		Loan Against Property
		Equipment Loan
2	Foregin Exchange	Send Money Abroad
		Travel Currency Card
		Buy Foregin Currency
		Sell Foregin Currency
3	Tours & Travels	Tickets
		Visa & Passport
		Travel Packages
		Travel Insurance
4	Wealth Management	Equity
		Mutal Fund
		IPO's
		Debt Market

Table No. 1.8.3, Product and Services of Ahalia Finforex

• **Gold Loan:** Gold Loan offers a convenient and secure way to obtain quick funds by pledging your gold assets. Known for its high maximum loan amounts, Ahalia ensures that customers can access substantial financial support when needed. The service features competitive interest rates and flexible repayment options, making it an attractive choice for borrowers. Whether you need funds for personal expenses, business ventures, or emergencies, Gold Loan provides a seamless and efficient process to meet your financial needs while maintaining the safety and integrity of your gold.

Highlights:

- Quick loan disbursal
- Lower interest rate
- Interest on daily diminishing balance basis
- Loan top up facility
- Loan takeover facility

Features:

Avail loan instantly by pledging Gold Ornaments.

- Most competitive interest rates in the market.
- Free insurance coverage for pledged ornaments.
- Hassle free & transparent, without hidden charges; nominal administrative charge at Rs 10/- per account only.

Variety of tailor-made loan schemes to meet your needs.

- Part payment accepted at any of our branches.
- Minimum documentation & KYC procedures.
- Interest will be charged for balance outstanding only.
- Better customer service. No pre-closure charges
- Maximum permissible rate/gram offered
- Loan Period up to 6 months

Loan Against Property: Unlock business opportunities with our fast and secure Business Loan against Property. This financial solution allows you to leverage your property to secure the funds needed for your business growth. Enjoy competitive interest rates, flexible repayment options tailored to your cash flow, and a straightforward application process designed to make access to capital quick and hassle-free. Whether you're expanding operations, purchasing equipment, or managing working capital, our Business Loan against Property is the perfect way to fuel your business ambitions.

Highlights:

- Quick loan distribution
- Lower interest rate
- Minimal documentation
- Loan on plain lands as well
- Maximum value to property
- Loan top up facility

Car Loan: Experience the thrill of driving dream vehicle with an Car Loan. Benefit from competitive interest rates and flexible repayment plans that make financing car both affordable and convenient. Streamlined loan process is designed to get on the road quickly and with minimal hassle. Whether purchasing a new or used vehicle, Car Loan provides a seamless solution to make automotive dreams a reality.

Highlights:

- Quick loan disbursal
- Lower interest rate
- Daily collection facility
- Loan top up facility
- Maximum loan amount
- Loan takeover facility

Equipment Loan:

Power projects with the Equipment & Machinery Loan. Obtain the equipment need now with competitive interest rates and flexible repayment plans that fit budget. Minimal application process ensures quick and easy access to funds, allowing to focus on business growth. Finance success by providing the tools necessary to achieve theproject goals efficiently and effectively.

Highlights:

- Quick loan disbursal
- Attractive interest rate
- Minimal documentation
- Wide range od equipment & machineries covered

SME Loan: SME loan used for:

- Invest in your firm's infrastructure
- Meet working capital requirements
- Install new plant and machinery
- Pay for several overheads

Consumer durable loan: Ahalia Consumer Durable Loan has the potential to make dreams turn into reality. We understand that you may need brand new appliances and electronics and our consumer durable finance is centred on your needs. We offer easy loans with flexible repayment options. A Consumer

Durable Loan is an option given to customers to purchase durable items. Here's a list of some of the many durable items you can purchases

- Digital Products such as Mobile phones, cameras, tablets, DSLRs, audio
- Devices, laptops, Smart watches, etc.
- Household products such as fridges, washing machines, microwaves, kitchen appliances, Water heater, etc.
- Lifestyle products such as furniture, Modular kitchen, Camera lenses, tyres, etc. We help make durables more accessible with an easy EMI option.

Forex:

Purchase currency abroad: Ahalia Money Exchange & Financial Services Pvt Ltd holds license from Reserve Bank of India to undertake foreign exchange transactions.

Key features:

- Meet foreign currency requirement for your Abroad trip at best rate o
- Branch networks available across Kerala
- Deals all major currencies at best rates
- No service charges on foreign currency transactions
- Home delivery available on need basis

Sell Foreign Currencies: Ahalia Money Exchange & Financial Services Pvt Ltd holds license from Reserve Bank of India to undertake foreign exchange transactions.

Highlights:

- Get the best rates and services converting foreign curriencies to Indian rupees
- Exchange foreign currency to Indian rupees at branches for residents and foreign trousits
- Branch network available across Kerala
- Deals all major currencies at best rates
- All branches are authorized to buy foreign currencies

Key features:

- Convert Foreign currencies to Indian Rupees at best rate and best service o Resident Indians/Non-resident Indians/Foreign tourist can exchange foreign currency to Indian rupee at our branches
- Branch networks available across Kerala o Deals all major currencies at best rates
- All our branches are authorized to buy foreign currencies o No service charge on foreign currency transaction

Travel Currency Card: Forex card is a prepaid card which enables customers to carry foreign currency while travelling abroad. Accepted across millions of merchant locations and ATMs across the globe, prepaid Forex cards are an Ideal mode of carrying foreign currency. This can be reloaded while the customer is abroad from any of our branches.

Highlights:

- Multicurrency forex card
- Single currency forex card
- Student forex card
- Swiping is free across all POS
- Free insurance cover
- Globally accepted

Key features:

- Ideal substitute for carrying foreign currency
- Load up to 9 currencies on a single card, and enjoy a hassle-free journey around the globe
- Card loading and reloading will take place Instantly

Can withdraw cash from ATMs / pay directly at merchant outlets of Protection against Foreign Exchange fluctuation Safest form of carrying foreign currency as Prepaid cards is PIN protect o Reloadable at our branches, even when the cardholder is abroad of Service at your door step is available as and when required

Send Money Abroad: Ahalia Money Exchange and Financial Services Pvt Ltd has been authorized to act as Indian Agent for Fast Encash Money Transfer Services Ltd for carrying out cross border money transfer under Money Transfer Service Scheme (MTSS). Customers in India can receive money sent by their loved ones, from various parts of the world through our branches and sub-agent locations. Remittance: Ahalia help our customers to send money from India to Abroad for various purposes as given below.

- Sending money to close relatives in abroad for maintenance expense
- Sending money to friends/relatives in abroad as gift
- Overseas education fee payment to college/university/GIC payment
- Medical treatment abroad

- Sending money from NRE account to abroad
- Sending fees for examinations held in India and abroad and additional score sheets for GRE, TOEFL etc.
- Send money services are being offered through referral arrangement with AD I entities.

Highlights

- Authorized dealer category
- Best exchange rate
- Block rate with advance payment
- Branches across Kerala
- Send money to 150+ countries
- Serving all major purposes

Domestic money transfer: Domestic Money Transfer (DMT) which is an assisted service to facilitate money trans fer needs of unbanked, under banked and migrant people in India. DMT is Cash to Bank A/C remittance service offered through Business Correspondents (Agents/CSPs) pan India who bring the transaction touch-points closer to the customers. Our Business Correspondents (BC) are based across the nooks and corners of the country, who transfer money on behalf of their customers using our DMT platform. By using this service, the customers can send money instantly to any IMPS/NEFT supported bank account in India. Receiver will get the money credited into the bank account within seconds. It is available 24*7 across the year, during nonbanking hours and on banking holidays as well.

Key Benefits are:

- Sender need not have bank account.
- Fund will be credited to beneficiary bank account anywhere in India.
- Instant credit to beneficiary account through IMPS mode.
- Option to send money with minimum formalities.
- Facility to send money after banking hours and on bank holidays.

Wealth:

Online Equity Trading: Trade in shares, currency, commodity and derivatives,of both investors as well as day-today traders. Depending on your profile, we offer different kinds of value-added services and brokerage plans for both online and offline equity trading through various platforms.

- **Debt mutual fund:** These are predominantly treasury bills, government securities, corporate bonds and other similar money market instruments. Debt funds, alternatively known as fixed income funds or credit funds, come under the fixed income asset category of mutual funds.
- **Investment planning:** Investment planning is the process of identifying financial goals and converting them through building a plan. Investment planning is the main component of financial planning. The investment planning begins with identification of goals and objectives. Then we need to match those goals with our available financial resources.
- **Retirement planning:** Different people have different retirement needs and goals. That's why we offer annuity products with wide range of annuity options to help you plan for a more secure future for you and your loved ones.
    a. Choice of deferment period
    b. Flexibility in pay outs
    c. Safe investment
    d. Tax benefits

Mutual Fund: A Mutual Fund is an investment scheme that collects money from people and invests those funds in various assets. The money collected from various investors is usually invested in financial securities like shares and money-market instruments like certificate of deposit and bonds. Equity, debt and money-market instruments are broad classifications of asset classes. These investments may be made for the short term, medium term or long term

Life insurance: Life insurance pays out a sum of money either on the death of the insured person or after a set period.

Life Insurance Claims

a. Death Claims In case of a claim under your life insurance policy, your beneficiary needs to submit following documents:
    - A fully filled claim form
    - Original policy bond or contract
    - An original, or certified copy of the policy holder ‘s death certificate
    - Proof of identity as the beneficiary

b. Maturity Claims In order to avail maturity benefits of your life insurance you need to submit the following to your insurer
    - Original policy bond
    - Maturity claim form

General insurance: General insurance covers home, your travel, vehicle, and health (non-life assets) from fire, floods, accidents, man-made disasters, and theft. Different types of general insurance include motor insurance, health insurance, travel insurance, and home insurance. A general insurance policy pays for the losses that are incurred by the insured during the period of the policy. General insurance policy is a short-term contract and in general insurance, the claim or the actual loss amount is reimbursed when a specific event occurs. Important General Insurance Coverage a person should have:

A) Health insurance is a must-have cover, given the ever-increasing healthcare charges, while travel and home insurance can help save you from a lot of grief. The general insurance cover that is mandatory is third-party liability car insurance. This is the minimum coverage that a vehicle should have before they can play on Indian roads.

b) Each and every type of general insurance cover comes with an sim, to offer coverage for a particular aspect. So, if you have not yet availed general insurance covers, then make sure you recognize your needs and buy the ones you require as soon as possible.

Travel:

- **Air ticket:** We offer ticketing services for international and domestic flights to major destinations. We also provide domestic rail and bus ticketing services.
- **Tour packages:** We arrange tailor-made tour packages and hotel bookings to meet all your travel needs, both domestic and international.
- **Attestations:** Ahalia arranges all kinds of short-stay visas for tourism, business, visiting family and friends, etc. and such other purposes of travel. Attestation of various certificates such as birth, marriage, education and police clearance certificates by the Embassy are provided by us. Documents required for attestation are the original certificates and passport copy. The documents undergo verification from the above-mentioned authorities depending on the certificates attestation to be done. Documents are sealed and signed from the concerned authorities. After this process only the documents are considered verified. It is mandatory to do certificate attestation while travelling outside the country for various purposes. Certificates hold of very much importance for the purpose to be completed. The documents have to be verified for it to be accepted in the destination country. Increased credibility of the certificates will help the person travelling in fulfilling his/her needs easily. Certificate attestation increases the accessibility of the certificate for international purposes. The purpose of certificate attestation is also ensuring safety of illegal documentation from the immigrants to the destination countries.
- **Travel insurance:** We arrange tailor-made tour packages and hotel bookings to meet all your travel needs, both domestic and international.
    - Ahalia Travels gives attractive travel insurance to short period travellers to Europe, US, UK, UAE, Australia, Canada and New Zealand.
    - We also assist you in applying for passport. You just need to pay the application fee and surcharge and hand over the necessary documents

General services:

- **PAN card:** PAN (Permanent Account Number) has become an essential part of any financial transaction, and it is now mandatory to obtain a PAN for any individual. Moreover, it is a widely recognized photo identity proof.

- **Recharge and bill payments:** It takes seconds to do your mobile recharge, data plan or DTH recharges, Ahalia Fin Forex covers all the top operators in India like Airtel, Jio, VI, Dish TV, Tata Sky & more. Just not that, but you can also pay all your utility bills like electricity bills, gas, water, insurance premium, cable. Ahalia offers the following bill payment services at our branches:
    - Prepaid mobile recharge
    - Post-paid mobile billpayment
    - DTH Recharge

The attraction of Ahalia Fin Forex is its product range, end-to-end financial solution for every household, managed in five verticals, namely:

NBFC-commonly known as shadow bank, NBFC ill the space in lending area, which is not always serviced by commercial banks like gold loan, property loan, personal deep into each potential suburb across the state and 300 branches by March 2024. We will concentrate on micro segmentation approach in finding smaller sets of people with specified products and specified needs. Expanding out to tier2, tier 3, tier 4 markets for wider and effective reach and to cater to the requirement of unorganized and un served segments of the economy.

1.8.4 Financial report of Ahalia FinForex LTD

An overview of AHALIA FINFOREX LIMITED's financial data for the fiscal year that ended on March 31, 2020.

- Ahalia fin forex limited generates between INR 1 and 100 billion in revenue.
- The business's net worth dropped by -6.69%.
- EBITDA has increased by 164.31% for the business.
- The company's total assets have grown by 36.33 percent.
- The business's liabilities have grown by 39.31%.

1.8.5 SWOT Analysis

Strength	**Threats**
Established Brand	Intense Competition
Expertise in Forex Trading	Regulatory Changes
Strong Network	Economic Factors
Technical Infrastructure	Cyber Security Risk
Opportunities	**Weakness**
Market Expansion	Limited Product Offering
Emerging Market Growth	Dependence on Market Conditions
Technicsl Advancement	Regulatory Compliance

Table No. 1.8.5, SWOT Analysis of Ahalia Finforex

Strength

- Established Brand: Ahalia Fin Forex Ltd has an established brand reputation in the financial services industry, which can help attract customers and build trust.
- Expertise in Forex Trading: The company specializes in forex trading. Which can provide a competitive advantage in the market. Their expertise In this area can attract clients seeking foreign exchange services.
- Strong Network: Ahalia Fin Forex Ltd has a strong network of clients, partners, and financial institutions, which can facilitate business growth and opportunities for collaboration.
- Technological Infrastructure: The company has invested in robust technological infrastructure, including trading platforms and risk management systems, which can enhance operational efficiency and provide a seamless trading experience for clients.

Weakness

- Limited Product Offering: Ahalia Fin Forex Ltd focus on forex trading may limit its product offering. It may be exposed to risks associated with relying heavily on one financial instrument.
- Dependence on Market Conditions: The company's performance is dependent on the volatility and liquidity of the forex market. In periods of low market activity, profitability may be impacted.
- Regulatory Compliance: Compliance with regulatory requirements and licensing in different jurisdictions can be challenging, potentially adding complexity and costs to the company's operations.

Opportunities

- Market Expansion: Ahalia Fin Forex Ltd can explore opportunities to expand its services beyond forex trading, such as offering other financial instruments or diversifying into related areas like crypto currency trading or derivatives.
- Emerging Market Growth: The company can leverage the growth potential in emerging markets, where there may be an increasing demand for forex trading services due to globalization and international trade.
- Technological Advancements: Advancements in technology, such as artificial intelligence, machine learning, and block chain, can be harnessed by Ahalia Fin Forex Ltd to improve its trading strategies, risk management, and customer experience.

Threats

- Intense Competition: The financial services industry, including forex trading, is highly competitive. Ahalia Fin Forex Ltd faces competition from established players, as well as emerging fintech startups offering innovative trading solutions.
- Regulatory Changes: Regulatory changes and increased scrutiny on the forex trading industry can pose risks and challenges for Ahalia Fin Forex Ltd, requiring ongoing compliance efforts and adaptation to new regulations.

- Economic Factors: Economic fluctuations, currency volatility, and geopolitical events can impact forex markets and affect trading volumes and profitability.
- Cybersecurity Risks: As a financial services provider, Ahalia Fin Forex Ltd faces cybersecurity threats and risks associated with data breaches, hacking attempts, and unauthorized access to customer information

CHAPTER II

REVIEW OF LITERATURE & THEORETICAL FRAMEWORK

2.1 Literature Review

1. **Darrat, A. F., & Mukherjee, T. K. (1986). "The Behaviour of Stock Prices in India: An Empirical Investigation".** This early work looks at the behaviour of stock prices in India and their relationship with macroeconomic factors, providing foundational insights for subsequent studies. Darrat and Mukherjee analyze historical stock price data and various economic indicators such as inflation, money supply, and industrial production. The study employs econometric techniques to investigate the empirical relationships between these variables. The findings highlight significant correlations between stock prices and macroeconomic factors, suggesting that economic conditions play a crucial role in determining stock market behavior. This study provides a foundation for understanding the impact of macroeconomic variables on the Indian stock market, paving the way for future research in this area.

2. **Mukherjee, T. K., & Naka, A. (1995). "Dynamic Relations Between Macroeconomic Variables and the Japanese Stock Market".** This influential study is frequently referenced in literature discussing the co-movements and long-run relationships between macroeconomic fundamentals and stock market returns, with particular relevance to the Indian context. Mukherjee and Naka investigate the dynamic interactions between various macroeconomic variables, such as interest rates, inflation, money supply, and industrial production, and the performance of the Japanese stock market. The study employs advanced econometric techniques, including cointegration and error correction models, to analyze these relationships. The findings demonstrate strong long-term linkages between macroeconomic variables and stock market returns, providing evidence of the predictive power of economic fundamentals. This study's insights are applicable to other markets, including India, and offer a framework for understanding the influence of macroeconomic factors on stock market performance.

3. **Naka, A., Mukherjee, T. K., & Tufte, D. (1998). "Macroeconomic Variables and the Performance of the Indian Stock Market".** This study finds significant long-run relationships between macroeconomic variables and the Indian stock market, emphasizing the predictive power of these indicators. Naka, Mukherjee, and Tufte analyze the influence of variables such as inflation, interest rates, exchange rates, and industrial production on the performance of Indian stock indices. The study employs cointegration and error correction models to examine these relationships. The findings reveal that macroeconomic variables have strong predictive power for stock market performance, with significant long-term equilibrium relationships. This research underscores the importance of monitoring economic indicators to forecast stock market trends and make informed investment decisions.

4. **Ramaswamy, R., & Sløk, T. (1998). "The Real Effects of Monetary Policy in India".** This IMF Working Paper examines the real effects of monetary policy in India, particularly focusing on its impacts on interest rates, inflation, and exchange rates. It explores how adjustments in monetary policy influence currency movements through changes in interest rate differentials and inflation expectations. The study highlights the critical role of monetary policy in stabilizing the economy and influencing market perceptions, which are essential for understanding currency volatility and economic stability in India.

5. **Panda, S., & Kamiah, B. (2001). "Causal Linkages Among Inflation, Monetary Policy, and Stock Market Volatility".** This research investigates the causal and dynamic linkages among macroeconomic variables, particularly monetary policy and its impact on market volatility. Panda and Kamiah focus on the interplay between inflation, monetary policy instruments such as interest rates and money supply, and stock market volatility. The study employs vector auto regression (VAR) models and Granger causality tests to analyze these relationships. The findings suggest that changes in monetary policy significantly influence stock market volatility, with higher interest rates and tighter money supply leading to increased market instability. This research provides important implications for

policymakers, emphasizing the need for carefully calibrated monetary policies to manage stock market volatility

6. **Kanakaraj, A., et al. (2008). “Stock Prices, Micro Reasons and Macro Economy in India: What Do Data Say Between 1997-2007?”.** This paper analyzes the interplay between stock prices and macroeconomic indicators in India over a decade. It explores how variables such as GDP and inflation impact stock prices, which in turn affect currency movements. The study provides empirical evidence of the correlations between macroeconomic conditions and financial market behavior, offering insights into how economic policies and external shocks can influence market stability and investor sentiment.

7. **Alam, M. M., & Uddin, M. G. S. (2009). “Relationship Between Interest Rate and Stock Price: Empirical Evidence from Developed and Developing Countries”.** This paper examines the relationship between interest rate fluctuations and stock prices across various economies, including India. The study finds significant evidence that changes in interest rates can impact stock market performance, reflecting in investor behavior and market valuations. For India, the results underscore the importance of monetary policy in influencing stock prices, which subsequently affects the currency value through market dynamics. Understanding this relationship is essential for investors and policymakers to anticipate market trends and make informed decisions.

8. **Alam, M. M., & Uddin, M. G. S. (2009). “Relationship Between Interest Rate and Stock Price: Empirical Evidence from Developed and Developing Countries”.** This research provides empirical evidence on how changes in interest rates affect stock prices in both developed and developing countries, including India. It underscores the influence of interest rate changes on currency movements via capital flows and investment decisions. Understanding these relationships is crucial for policymakers and investors to anticipate market trends and make informed decisions that can mitigate the impacts of economic fluctuations on financial markets.

9. **Singh, D., et al. (2010). “Causal Relationship Between Macroeconomic Variables and Stock Market: A Case Study for India”.** Singh and colleagues investigate the causal relationships between key macroeconomic variables such as interest rates, inflation, and economic growth, and the stock market in India. The study shows that these variables have a significant impact on market behavior and currency fluctuations. Understanding these causal relationships is essential for policymakers and investors to develop strategies that can mitigate the effects of economic volatility on financial markets and currency values.

10. **Pal, K., & Mittal, R. (2011). “Impact of Macroeconomic Indicators on Indian Capital Markets”.** This paper examines the long-run relationships between Indian capital markets and key macroeconomic variables such as interest rates, inflation, exchange rates, and gross domestic savings. Pal and Mittal’s research aims to identify the significant determinants of stock market indices like BSE Sensex and S&P CNX Nifty. The study utilizes cointegration analysis and vector error correction models to investigate the long-term equilibrium relationships between these macroeconomic indicators and stock market performance. The results indicate that interest rates, inflation, and exchange rates are significant predictors of stock market movements, while gross domestic savings have a lesser impact. This research provides valuable insights for investors and policymakers, emphasizing the importance of macroeconomic stability for the sustained growth of capital markets.

11. **Lokeswar Reddy, D. V., et al. (2012). “Impact of Inflation and GDP on Stock Market Rates in India”.** This paper examines how inflation and GDP impact stock market rates, highlighting significant correlations that can inform currency movement analyses. Lokeswar Reddy and co-authors analyze the historical data of inflation rates, GDP growth, and stock market indices to understand their interrelationships. The study employs correlation and regression analyses to quantify the impact of these macroeconomic variables on stock market rates. The findings indicate that both inflation and GDP significantly influence stock market

performance, with higher GDP growth leading to positive stock market returns and high inflation exerting downward pressure on stock prices. This research provides insights for investors and policymakers on the importance of maintaining economic stability to foster favorable stock market conditions.

12. **“Exchange Rate and Macro-economic indicators: A Causal Study for India of the Past Decade” YAMINI KARMARKAR, MUSKAN KARAMCHANDANI and ASHIMA MANTR (2012).** The research paper investigates the impact of exchange rate volatility on key macroeconomic indicators in India from January 2000 to June 2009 using statistical methods such as multivariate Vector Autoregression (VAR) and Granger causality tests. The study finds that increased exchange rate volatility has a significant negative effect on the Sensex in the long run, indicating that fluctuations undermine market stability. It also identifies significant causal relationships between exchange rates and foreign exchange reserves, Sensex, and reserve money, with bi-directional causality observed among these variables. The findings highlight that India’s exchange rates are predominantly influenced by external sector variables, financial market factors, and the financial sector, with weak evidence suggesting an impact from the real sector. These insights are crucial for policymakers aiming to stabilize exchange rates and ensure economic stability.

13. **"Macroeconomic Variables and the Indian Rupee: Exploring Long-Run Relationships" by Amit Ghosh (2012).** This study likely investigates the *long-term connections* between macroeconomic factors and the Indian Rupee. Researchers may have examined how variables such as GDP growth, inflation, interest rates, and trade balances impact the Rupee over extended periods. Understanding these relationships can provide insights into stability and predictability.

14. **"The Impact of Macroeconomic Fundamentals on the Indian Rupee During the Post-Reform Era: A Structural VAR Analysis" by Saibal Ghosh (2013).** Structural VAR (Vector Auto regression) models are powerful tools for analyzing the impact of *macroeconomic shocks* on exchange rates. In this study, researchers likely focused on the post-reform period in India. By identifying the causal relationships between macroeconomic fundamentals (such as fiscal policy, monetary policy, and external shocks) and the Rupee, the study sheds light on how reforms influenced the currency.

15. **Sinha, Pankaj and Kohli, Deepti (2013):" Modeling exchange rate dynamics in India using stock market indices and macroeconomic variables."** Predicting currency movements is a complex task due to the multitude of variables influencing the market. This study focuses on examining how common macroeconomic variables theoretically expected to affect exchange rates impact the INR/USD exchange rate. It investigates the interactions between the Indian foreign exchange and stock markets from 1990 to 2011. Specifically, it analyzes the effect of the exchange rate on three market indices—BSE Sensex, BSE IT sector, and BSE Oil & Gas sector—between January 2006 and March 2012. The findings indicate no significant interactions between the USD/INR exchange rate and stock returns. However, economic variables like inflation differential, lending interest rates, and the current account deficit (as a percentage of GDP) significantly influence the exchange rate. Additionally, the study finds a statistically significant negative relationship between India's real GDP and the exchange rate. This suggests that as the rupee depreciates, it adversely affects the overall economy.

16. **"Macroeconomic Determinants of the Rupee–Dollar Exchange Rate: Empirical Evidence from India" by Prakriti Mishra and Binod B. Bhattarai (2014).** Empirical evidence is crucial for understanding the determinants of exchange rate movements. This study likely used econometric techniques to analyze data on variables like interest rates, inflation, trade balances, and foreign exchange reserves. By quantifying their impact on the Rupee-Dollar exchange rate, the authors contribute to the literature on exchange rate determination.

17. **"Determinants of the Indian Rupee/US Dollar Exchange Rate and Policy Implications" by Harish V. Ramaswamy and Susan S Sharma (2016).** Policymakers need insights into exchange rate dynamics. This study likely identifies the key determinants of the Rupee-Dollar exchange rate. By doing so, it informs policymakers about potential interventions or adjustments to maintain stability.

18. **Ashok, V. M., & Kalyani, A. V. (2016). "Impact Analysis of Economic Indicators on the INR-USD Exchange Rate".** This paper delves into the volatility of the INR-USD exchange rate, with a particular focus on the period during the global financial crisis of 2008-2009. Ashok and Kalyani analyze the role of key economic indicators, including interest rates, inflation, foreign exchange reserves, and fiscal deficits, in driving exchange rate fluctuations during times of economic turmoil. The study utilizes advanced statistical techniques to model the exchange rate volatility and identify the most influential economic variables. The findings reveal that during the global financial crisis, the INR-USD exchange rate was highly sensitive to changes in these economic indicators, with significant implications for investors and policymakers. This research underscores the importance of monitoring and managing economic indicators to mitigate exchange rate volatility during financial crises.

19. **Yildirim, Z., & Ivrendi, M. (2016). "Exchange Rate Fluctuations and Macroeconomic Performance: Evidence from Four Fast-Growing Emerging Economies".** This study uses a vector autoregression (VAR) model to explore how exchange rate movements impact macroeconomic indicators in four fast-growing emerging economies: Brazil, Turkey, Russia, and South Africa. Yildirim and Ivrendi's research aims to understand the broader economic consequences of exchange rate fluctuations in these countries. By analyzing data from these economies, the study examines the causal relationships between exchange rate changes and macroeconomic performance indicators such as GDP growth, inflation,

unemployment rates, and trade balances. The findings suggest that currency depreciation often leads to deep recessions, characterized by declining GDP and rising inflation. This study provides valuable insights into the interconnectedness of exchange rates and macroeconomic stability in emerging markets, highlighting the need for effective exchange rate management policies.

20. **Mishra, A. K. (2016). "Impact of Macroeconomic Indicators on the INR-USD Exchange Rate".** Mishra's research provides a comprehensive analysis of the impact of key economic indicators such as crude oil prices, Gross Domestic Product (GDP), and the Consumer Price Index (CPI) on the INR-USD exchange rate, particularly during the global financial crisis. This study highlights the volatility in currency movements influenced by these factors, offering insights into the sensitivity of exchange rates to changes in macroeconomic conditions. The findings are crucial for policymakers and financial analysts who seek to understand the external economic shocks that can affect the currency market, emphasizing the need for robust economic policies to stabilize currency fluctuations.

21. **Abhay, K. (2016). "Co-integration of Indian Stock Market with the Markets of European Countries".** Abhay's study explores the co-integration between the Indian stock market and European markets, examining how global market dynamics and investor behavior influence currency movements. The research highlights the impact of cross-border capital flows and investor sentiment on the INR-USD exchange rate, indicating the interconnectedness of global financial markets. This study is important for understanding the global economic environment's role in shaping currency values and for developing strategies to manage the risks associated with global market fluctuations.

22. **Ashok, V. M., & Kalyani, A. V. (2016). "Impact Analysis of Economic Indicators on the INR-USD Exchange Rate".** This paper provides an in-depth analysis of how various economic indicators affect the INR-USD exchange rate, particularly during periods of economic instability like the global financial crisis.

The research highlights the volatility in the exchange rate due to changes in economic indicators such as inflation, interest rates, and trade balances. These insights are crucial for understanding the dynamics of currency markets and for developing policies that can help stabilize currency fluctuations.

23. **Kilic, M., & Wachter, J. A. (2016). "Risk, Unemployment, and the Stock Market: A Rare-event-based Explanation of Labor Market Volatility".** Kilic and Wachter's study explores the impact of rare economic events, such as unemployment shocks, on stock market volatility and currency movements. The research provides a rare-event based explanation of how unexpected economic disturbances can lead to significant market disruptions. This is important for understanding the risks associated with economic volatility and for developing risk management strategies in financial markets.

24. **Abhay, K. (2016). "Co-integration of Indian Stock Market with the Markets of European Countries".**This study explores the integration of the Indian stock market with European markets, demonstrating how global market dynamics influence Indian currency movements through capital flows and investor sentiment. The research highlights the interconnectedness of global financial markets and the impact of international market behaviors on national currencies, offering insights into the global economic environment's role in shaping currency values.

25. **"An Empirical Study on the Impact of Macroeconomic Variables on Exchange Rate Volatility in India" by Jitendra Mahakud and Rathika Shenbagaraman (2017).** Exchange rate volatility can significantly affect trade and investment. This study likely explores how *macroeconomic variables contribute to volatility* in the Indian context. Researchers may have used statistical models to quantify the impact of variables like interest rate differentials, inflation, and external shocks.

26. **Giri, A. K., & Joshi, P. (2017). “The Impact of Macroeconomic Indicators on Indian Stock Prices: An Empirical Analysis”.** This study empirically examines the relationship between macroeconomic indicators like GDP, inflation, and interest rates and their impact on stock prices in India. It finds significant correlations that affect currency exchange rates indirectly, highlighting the importance of macroeconomic stability in influencing market behavior. These insights are valuable for understanding how economic variables impact financial markets and for developing strategies to manage economic risks.

27. **Chavda, K. N., & Kumar, S. T. M. (2018). “Analysis of Impact of Gross Domestic Product (GDP) on Stock Market Returns in India”.** Chavda and Kumar’s research focuses on the relationship between GDP growth and stock market returns in India. The study reveals a positive correlation between GDP growth and stock market performance, suggesting that a growing economy boosts investor confidence and leads to higher stock market returns. This correlation is significant as it impacts currency movements; stronger market performance can make the currency more attractive to foreign investors. These findings are crucial for understanding how economic growth can influence financial market stability and investor perceptions.

28. **"An Empirical Analysis of Factors Determining Exchange Rate Movements in India" by Amanjot Kaur and Amarjit Kaur (2018).** Identifying the specific factors driving exchange rate movements is essential. This study likely dissects those factors, including *capital flows, speculative behavior, and central bank interventions*. By understanding these drivers, policymakers can formulate effective strategies.

29. **Chavda, K. N., & Kumar, S. T. M. (2018). “Analysis of Impact of Gross Domestic Product (GDP) on Stock Market Returns in India”.** This study explores the relationship between GDP and stock market returns in India, finding significant correlations and providing insights into how macroeconomic health

influences financial markets. Chavda and Kumar analyze historical data to determine the impact of GDP growth on major stock indices such as BSE Sensex and NSE Nifty. The study employs regression analysis and Granger causality tests to examine the direction and strength of the relationship between GDP and stock market returns. The findings reveal a positive and statistically significant correlation, suggesting that robust economic growth drives higher stock market returns. This study highlights the importance of economic policies that foster GDP growth to enhance stock market performance.

30. **"Effect of Macroeconomic Variables on Indian Exchange Rate: An Empirical Study" by Navneet Kaur and Jaswinder Singh (2019).** This study likely provides empirical evidence on how *macroeconomic variables (such as interest rates, inflation, and trade balances)* impact the Indian exchange rate. Researchers may have used econometric models to estimate the relationships.

31. **"Impact of Macroeconomic Indicators on the Movement of Indian Rupee: A Time Series Analysis" by Pankaj Singhal and Sunil Kumar (2020).** Time series analysis allows for tracking currency movements over time. This study likely examines the relationship between *macro indicators and the Rupee* using historical data. By analyzing trends and patterns, the authors contribute to our understanding of exchange rate behaviour.

32. **"Empirical Study on Macroeconomic Determinants of Exchange Rate Volatility: Evidence from India" by Priyanka Sharma and Kirti Arekar (2021).** Exchange rate volatility affects businesses and investors. This study likely identifies determinants of volatility in the Indian context. By examining factors such as *external shocks, investor sentiment, and global economic conditions*, the authors shed light on the sources of volatility in the Rupee exchange rate.

33. **Mane, D. R., & Magar, D. S. (2021). "Nexus Between Indian Financial Markets and Macro-economic Shocks: A VAR Approach".** Using a Vector Autoregression (VAR) approach, this study delves into the dynamic linkages between macroeconomic shocks and various segments of Indian financial markets, including the forex market. It identifies significant relationships between GDP growth, inflation, and exchange rate volatility, emphasizing how macroeconomic instability can lead to fluctuations in currency values. This research provides insights into the interconnectedness of economic indicators and their impact on financial market stability, crucial for economic policy formulation.

34. **Venugopal, P.R. (2022). "Impact of Macroeconomic Variables on Exchange Rate in India"**. This study investigates the effects of various macroeconomic factors such as crude oil prices, GDP fluctuations, and the Consumer Price Index (CPI) on the exchange rate of the Indian currency. Venugopal's research aims to uncover how these significant economic indicators affect the value of the Indian rupee against other currencies. By employing econometric models and time-series analysis, the study examines historical data to determine the extent of influence these factors have on the exchange rate. The results highlight that fluctuations in crude oil prices, variations in GDP growth rates, and changes in CPI have direct and substantial impacts on the exchange rate. This study's findings are crucial for policymakers and financial analysts as they navigate the complexities of the forex market and devise strategies to stabilize the currency.

35. **Giri A. K. and Pooja Joshi (2023)- "The Impact of Macroeconomic Indicators on Indian Stock Prices: An Empirical Analysis".** This research examines the long-term and short-term relationships between stock prices and macroeconomic variables in India using annual data from 1979 to 2014. The study employs the ARDL bounds testing approach to co-integration and VECM for testing causality, along with variance decomposition to predict long-term shocks. Results confirm a significant long-term relationship where economic growth, inflation, and exchange rates positively influence stock prices, while crude oil prices have a negative impact

due to inflationary expectations. This study underscores the influence of economic factors on stock market development in India.

36. **Rakesh Shahani and Bhavya Vashisth (2023) - "Impact of Macroeconomic Variables on India's Stock Market: A Dynamic OLS Approach".** This study investigates the impact of macroeconomic variables on India's NSE Nifty index, considering factors such as money supply, industrial production, the rupee-dollar exchange rate, oil prices, and government bond yields from April 2008 to March 2018. The Dynamic OLS technique is used to address simultaneity bias, revealing significant co-integration relationships among CPI, forex rates, oil prices, and NSE Nifty prices. Error correction models demonstrate significant adjustments towards equilibrium, indicating the NSE Nifty index's response to macroeconomic shocks.

37. **Dr. Shalini Devi (2023)"Impact Analysis of Economic Indicators on the INR-USD Exchange Rate".** This paper explores the relationship between key macroeconomic indicators and the INR-USD exchange rate, employing advanced econometric models and techniques on data spanning from 1991 to 2023. The study uses the Augmented Dickey Fuller (ADF) test for stationarity, multiple regression, correlation, and ARIMA models to assess the impact of inflation, GDP growth, interest rates, and foreign direct investment on exchange rate behavior. The research provides insights into forex market dynamics and offers practical implications for policymakers, investors, and economic scholars, particularly in the context of a developing nation like India.

2.2 Theoretical Framework

2.2.1 List of variables

Currency Movements

Currency movements refer to the fluctuations in the value of a country's currency relative to other currencies in the foreign exchange market. These movements are influenced by multiple factors, including differences in interest rates between countries, inflation rates, political stability, economic performance, and market speculation. If a country has higher interest rates than others, it may attract more foreign capital as investors seek higher returns. This increased demand for the country's currency can lead to its appreciation. Conversely, if a country experiences high inflation, its currency might depreciate because inflation erodes purchasing power, making the currency less attractive to investors.

Currency movements have significant implications for international trade. When a country’s currency appreciates, its exports become more expensive for foreign buyers, potentially reducing demand for its goods and services abroad. Conversely, imports become cheaper, which might increase domestic consumption of foreign products. This dynamic can impact a country's trade balance and overall economic health.

Currency movements affect foreign investment flows. A stronger currency might attract foreign investors looking to capitalize on favorable exchange rates and higher returns, whereas a weaker currency could deter investment due to lower returns when converted back to the investor’s home currency.

Current Account Deficit

A country's current account deficit shows how much more it spends on imports and other payments abroad compared to what it earns from exports and other sources. This deficit is part of the balance of payments, which tracks all money transactions between the country and others.

When there's a current account deficit, it means the country is buying more from abroad than it's selling. To cover this gap, the country might borrow money from foreign lenders or sell its own assets. While a deficit can show that a country is investing in its future, relying too much on foreign money can be risky if global financial conditions change.

Continuously having a current account deficit can lead to higher foreign debt and make the country more vulnerable to outside economic shocks. But it can also mean the country is growing and investing in things like infrastructure and technology, which could boost its economy later on. Policymakers need to find a balance to ensure the country's economy grows steadily and sustainably.

Inflation Rates

The inflation rate tells us how fast prices for goods and services are going up in an economy, making money worth less over time. Central banks work to keep inflation steady, typically aiming for 2-3% yearly in developed countries, as this level supports economic growth without causing major problems. High inflation can eat away at savings, mess up spending and investment choices, and make things uncertain, which can slow down the economy. On the flip side, low inflation or deflation can mean weak demand, leading to a sluggish economy as people and businesses hold off on spending, expecting prices to drop later.

To manage inflation, central banks adjust interest rates and control how much money is circulating. When they raise interest rates, it cools down spending and investment, helping to slow the economy. Lowering interest rates does the opposite, encouraging more spending and investment.

GDP Growth Rate

The GDP growth rate shows how much the total value of everything produced in a country has gone up in a year. It's a big deal because it tells us how well the economy is doing. When the GDP grows, it usually means more jobs, higher incomes, and better living standards for people.

Lots of things make the economy grow, like people spending money, businesses investing, the government spending, and how much stuff gets sold overseas. When all these things are going well, the GDP goes up, and the economy gets stronger.

But if the GDP grows too fast, it can cause problems like prices going up too much or bubbles forming in the economy. On the other hand, when the GDP goes down, it means the economy is shrinking, which leads to fewer jobs, lower incomes, and less confidence from both consumers and businesses. To keep things on track, policymakers use government spending and other tricks to make sure the economy grows at a steady and healthy pace.

Interest Rates

Interest rates, decided by a country's central bank, show how much it costs to borrow money. They have a big say in how much people spend, businesses invest, and how fast prices go up. When central banks drop interest rates, borrowing gets cheaper, which encourages spending and investing, boosting the economy. But when rates go up, borrowing gets pricier, slowing things down to keep prices in check.

Interest rates also affect how much a country's money is worth. When rates go up, foreign investors want in, so they buy more of the country's money, making it worth more. But when rates drop, investors look for better deals elsewhere, so the country's money loses value.

Central banks keep an eye on the economy and change interest rates accordingly. If things are heating up too fast and prices are going up too much, they might raise rates to cool things down. But if the economy is dragging, they might lower rates to give it a boost.

FDI

Foreign Direct Investment (FDI) is when companies from other countries invest in businesses or operations within a country. This can mean starting new businesses, buying existing ones, or making current operations bigger. FDI is super important for making an economy grow because it brings in money, tech, and know-how, which helps create jobs, make things more efficient, and boost the economy.

Lots of FDI usually means the country is a good place to do business, with stable politics, strong laws, and good economic prospects. Countries often try to attract more FDI by offering perks like tax breaks, money incentives, or better infrastructure.

FDI also brings skills and tech, which can make local businesses better. But too much reliance on FDI can make people worry about other countries having too much say in their industries and policies. It's important to balance FDI with growing local businesses for the economy to keep growing steadily.

Crude Oil Prices

Oil prices play a huge role in the economy because oil is super important for energy and lots of industries. When oil prices go up, it costs more to make and move stuff around, which can make everything more expensive. This can squeeze people's budgets and make it harder for businesses to grow, slowing down the economy.

But when oil prices drop, it's like a discount for businesses and consumers, which can get things moving again. Countries that sell oil make more money when prices are high, so they can spend more on stuff like public projects. And countries that buy oil save money when prices are low, which helps their trade and keeps prices from going up too much.

Lots of things affect oil prices, like politics, how much oil is available, and what people think will happen in the future. Figuring out these factors is key to understanding how oil prices will affect the economy and making smart decisions.

Stock Market Indices

Stock market indices like the S&P 500 or FTSE 100 keep an eye on how a bunch of chosen stocks are doing, giving us a sense of how the whole stock market is doing. These indices show what investors are thinking and are often used to see how the economy is doing.

When the stock market goes up, it usually means investors are feeling good about the future, which can lead to more spending by both people and businesses. Higher stock prices can make investors feel richer, so they're more likely to spend money, which keeps the economy humming along. But if the stock market goes down, it could mean trouble ahead, making people and businesses nervous and less likely to spend or invest.

Lots of things can affect the stock market, like how well companies are doing, economic news, interest rates, and what's happening in the world. Keeping an eye on these indices helps us understand where the economy might be heading and how investors are reacting.

Gold Prices

Gold prices are influenced by lots of things, like how much money is worth, interest rates, and how stable things are in the world. When things get shaky in the economy or markets, people often turn to gold because it's seen as a safe bet.

Gold is also a popular choice when inflation is high because it keeps its value better than money does. Plus, changes in the value of the U.S. dollar can affect gold prices. When the dollar is weak, gold looks cheaper to people using other currencies, so they buy more, which drives up prices. But when the dollar is strong, gold can seem more expensive to them, so they buy less, which can bring prices down.

Big players like central banks also hold a lot of gold, which can affect how much is available and how much people want it. Watching gold prices can give us clues about what's happening in the economy and what investors are thinking, especially when things aren't so steady.

2.2.2 Classification of Variables

- Dependent Variable
    a. Currency movements
- Independent Variable
    - Current account deficit
    - Inflation rate

- GDP growth rate
- Interest rate
- FDI
- Crude oil prices
- Stock market indices
- Gold prices

2.2.3 Tools Used for the Study

1. Correlation Analysis
2. Regression Analysis

CHAPTER III

DATA ANALYSIS AND INTERPRETATION OF DATA

3.1 CORRELATION ANALYSIS

Year	Exchange Rate (INR/USD)	Current Account Deficit (% of GDP)	Inflation Rate (CPI, %)	GDP Growth Rate (%)	Repo Rate (%)
2011	0.02240	-4.2	8.9	6.6	8.5
2012	0.01885	-4.8	9.3	5.5	8
2013	0.01825	-1.7	10.9	6.4	7.5
2014	0.01641	-1.3	6.4	7.4	8
2015	0.01497	-1.1	4.9	8	6.75
2016	0.01479	-0.6	4.5	8.3	6.25
2017	0.01540	-1.8	3.3	7	6
2018	0.01416	-2.1	3.9	6.5	6.5
2019	0.01386	-0.9	3.7	4.2	5.15
2020	0.01345	0.9	6.6	-7.3	4
2021	0.01325	-1.2	5.1	8.7	4
2022	0.01225	-2.1	6.7	7	6.25
2023	0.01220	-2.5	5	6.1	6.5

FDI Inflow (USD Billion)	Brent Crude (USD/barrel)	BSE Sensex (Year-end)	Gold Prices (INR/10g)
36.5	94.88	15454	26400
24	94.05	19426	31050
28.1	97.98	21170	29600
34.5	96.24	27499	28006
44	50.92	26118	26343
44.5	43.74	26626	28623
39.9	50.84	34056	29667
39.4	71.31	36068	32905
43	64.21	41253	38704
44	41.96	47751	50207
64	70.68	58254	48651
49.2	94.53	60840	55702
51.8	80.3	63327	58470

Table 3.1.2 – Exchange rate and Current account deficit

Year	Exchange Rate (INR/USD)	Current Account Deficit (% of GDP)
2011	0.02240	-4.2
2012	0.01885	-4.8
2013	0.01825	-1.7
2014	0.01641	-1.3
2015	0.01497	-1.1
2016	0.01479	-0.6
2017	0.01540	-1.8
2018	0.01416	-2.1
2019	0.01386	-0.9
2020	0.01345	0.9
2021	0.01325	-1.2
2022	0.01225	-2.1
2023	0.01220	-2.5

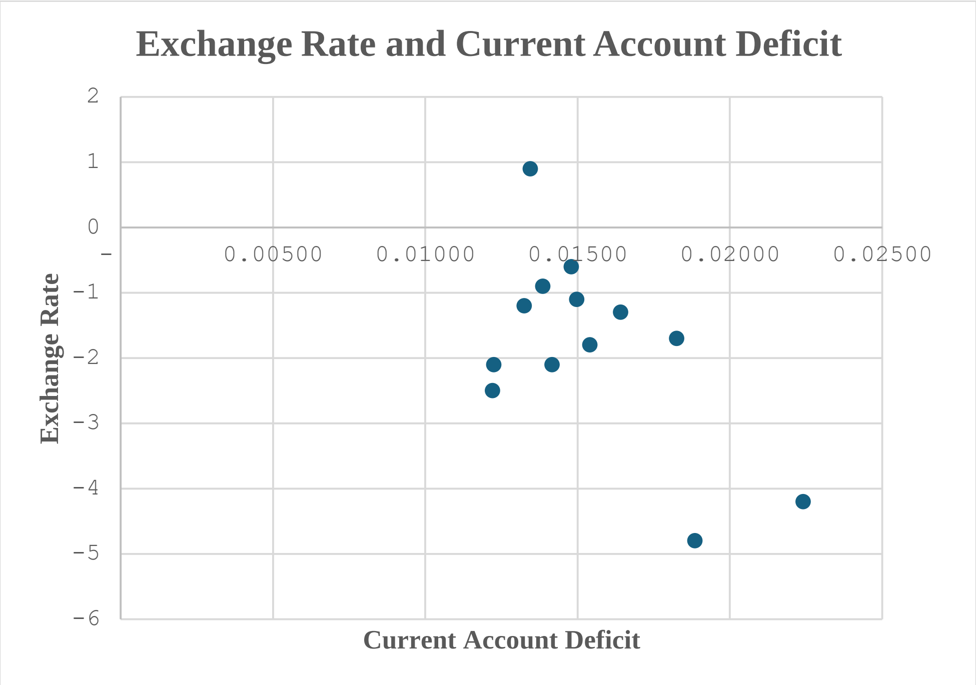

Fig 3.1.2 Exchange rate and Current account deficit

Table 3.1.2 (a) – Correlation between Exchange rate and Current account deficit

Particulars	Value
Correlation	-0.61282

Interpretation

There is a moderate negative correlation between the current account deficit and the value of the Indian rupee (INR). This means that as the current account deficit increases, the value of the INR tends to decrease, indicating depreciation. A larger current account deficit suggests that India is importing more than it is exporting, which can put downward pressure on the currency as more INR is sold to buy foreign currencies for payments.

Table 3.1.3 – Exchange rate and Inflation rate

Year	Exchange Rate (INR/USD)	Inflation Rate (CPI, %)
2011	0.02240	8.90
2012	0.01885	9.30
2013	0.01825	10.90
2014	0.01641	6.40
2015	0.01497	4.90
2016	0.01479	4.50
2017	0.01540	3.30
2018	0.01416	3.90
2019	0.01386	3.70
2020	0.01345	6.60
2021	0.01325	5.10
2022	0.01225	6.70
2023	0.01220	5.00

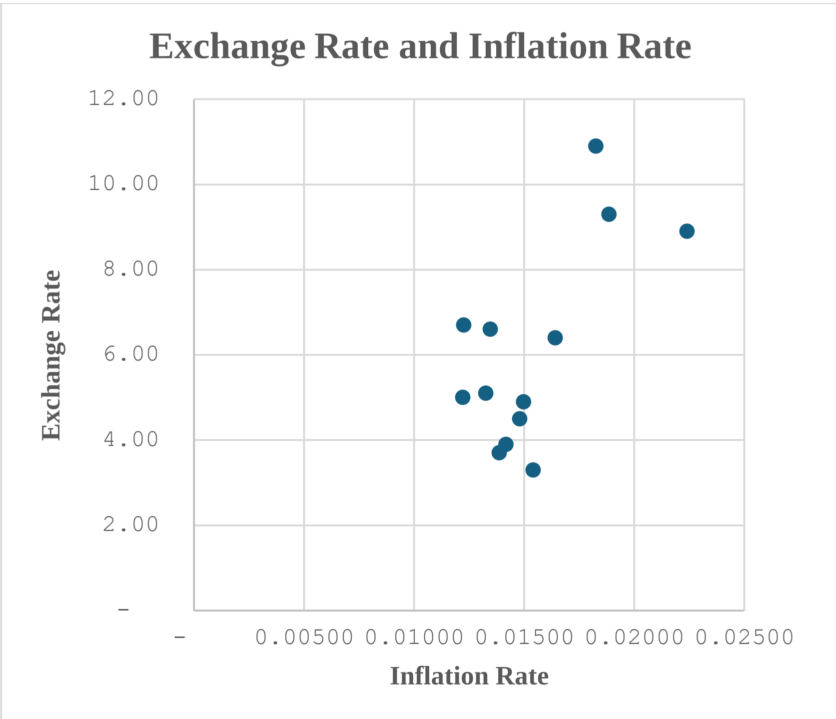

Fig 3.1.3 Exchange rate and Inflation Rate

Table 3.1.3 (a) – Correlation between Exchange rate and Inflation rate

Particulars	**Value**
Correlation	0.66855

Interpretation

The correlation coefficient of 0.66855 indicates a moderate to strong positive relationship between the exchange rate and the inflation rate. This suggests that, as the inflation rate increases, the exchange rate tends to increase as well. In other words, higher inflation rates are associated with higher exchange rates.

Table 3.1.4 – Exchange rate and GDP growth rate

Year	Exchange Rate (INR/USD)	GDP Growth Rate(%)
2011	0.02240	6.60
2012	0.01885	5.50
2013	0.01825	6.40
2014	0.01641	7.40
2015	0.01497	8.00
2016	0.01479	8.30
2017	0.01540	7.00
2018	0.01416	6.50
2019	0.01386	4.20
2020	0.01345	-7.30
2021	0.01325	8,70
2022	0.01225	7.00
2023	0.01220	6.10

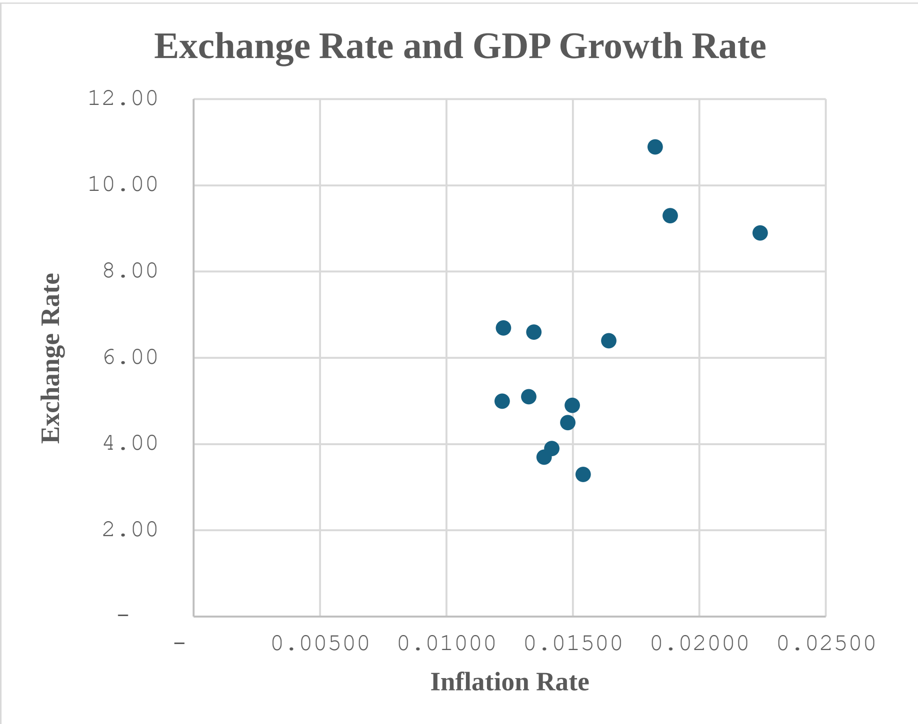

Fig 3.1.4 Exchange rate and GDP Growth Rate

Table 3.1.4 (a) – Correlation between Exchange rate and GDP growth rate

Particulars	Value
Correlation	0.15008

Interpretation

There is a weak positive correlation between GDP growth rate and the value of the INR. This suggests that changes in GDP growth have a minimal effect on the currency value. While higher GDP growth is generally positive for the economy, its direct impact on the currency is not very strong in this data set.

Table 3.1.5 – Exchange rate and Interest rate

Year	Exchange Rate (INR/USD)	Interest Rate (Repo Rate)
2011	0.02240	8.50
2012	0.01885	8.00
2013	0.01825	7.50
2014	0.01641	8.00
2015	0.01497	6.75
2016	0.01479	6.25
2017	0.01540	6.00
2018	0.01416	6.50
2019	0.01386	5.15
2020	0.01345	4.00
2021	0.01325	4.00
2022	0.01225	6.25
2023	0.01220	6.50

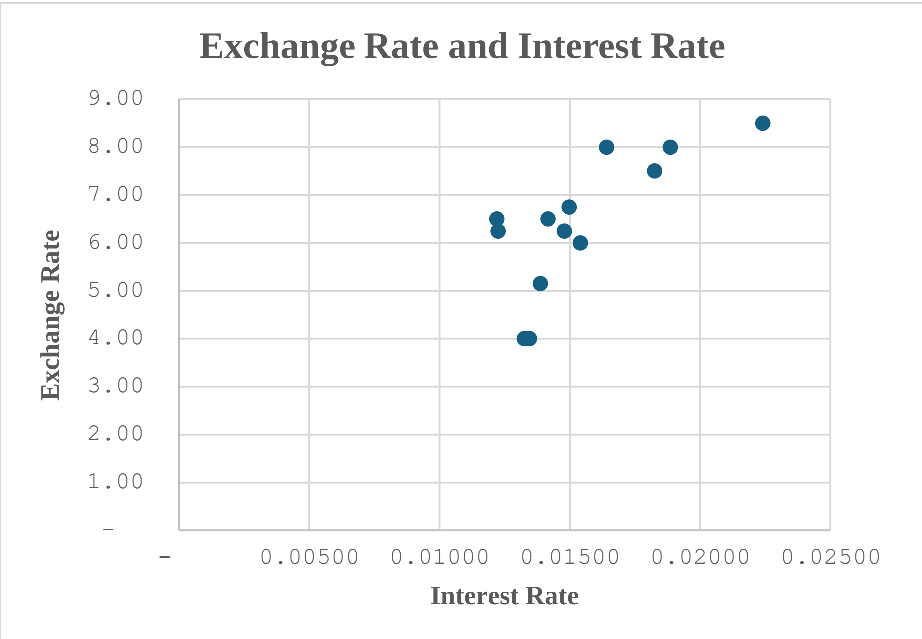

Fig 3.1.5 Exchange rate and Interest Rate

Table 3.1.5 (a) – Correlation between Exchange rate and Interest rate

Particulars	**Value**
Correlation	0.73534

Interpretation

There is a strong positive correlation between the interest rate and the value of the INR. This means that as the interest rate increases, the value of the INR tends to decrease, indicating depreciation. Higher interest rates can attract foreign investment, but they also indicate higher borrowing costs and potential economic slowdown, which can negatively affect the currency.

Table 3.1.6 – Exchange rate and FDI

Year	Exchange Rate (INR/USD)	FDI Inflow (USD Billion)
2011	0.02240	36.50
2012	0.01885	24.00
2013	0.01825	28.10
2014	0.01641	34.50
2015	0.01497	44.00
2016	0.01479	44.50
2017	0.01540	39.90
2018	0.01416	39.40
2019	0.01386	43.00
2020	0.01345	44.00
2021	0.01325	64.00
2022	0.01225	49.20
2023	0.01220	51.80

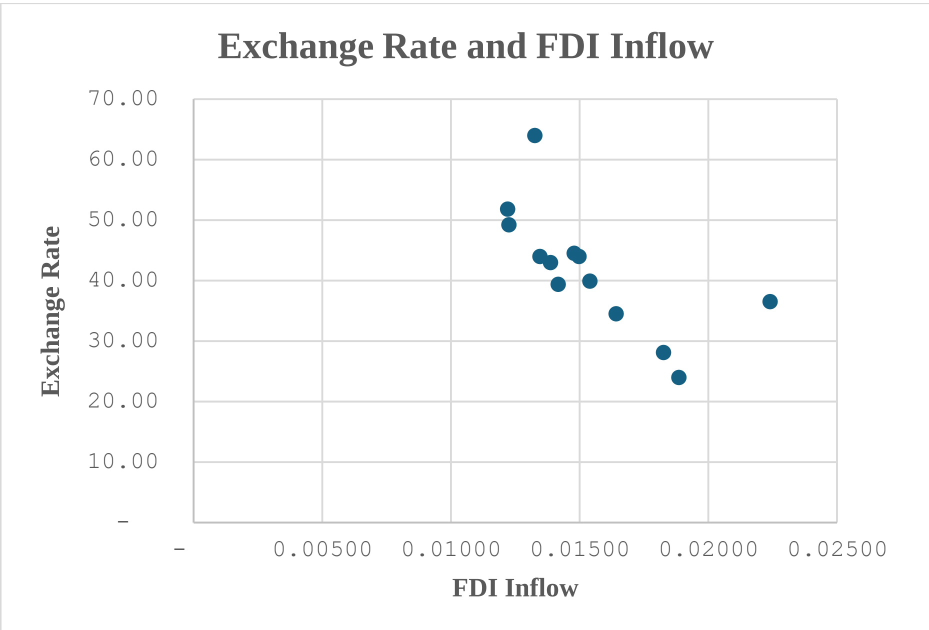

Fig 3.1.6 Exchange rate and FDI Inflow

Table 3.1.6 (a) Correlation between Exchange rate and FDI

Particulars	Value
Correlation	-0.70360

Interpretation

The correlation coefficient of -0.70360 indicates a strong negative relationship between the exchange rate and FDI. This suggests that, as FDI increases, the exchange rate tends to decrease. In other words, higher levels of FDI are associated with lower exchange rates. This significant negative correlation implies that FDI is a strong factor influencing the exchange rate, though other factors may also be involved.

Table 3.1.7 – Exchange rate and Crude oil prices

Year	Exchange Rate (INR/USD)	Brent Crude (USD/Barrel)
2011	0.02240	94.88
2012	0.01885	94.05
2013	0.01825	97.98
2014	0.01641	96.24
2015	0.01497	50.92
2016	0.01479	43.74
2017	0.01540	50.84
2018	0.01416	71.31
2019	0.01386	64.21
2020	0.01345	41.96
2021	0.01325	70.68
2022	0.01225	94.53
2023	0.01220	80.30

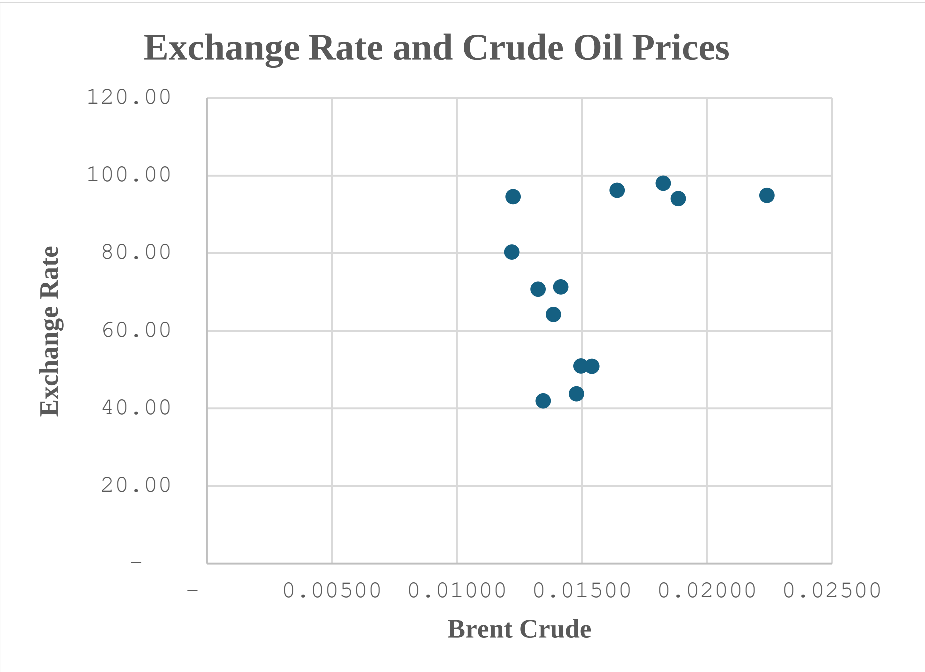

Fig 3.1.7 Exchange rate and Crude Oil Prices

Table 3.1.7 (a) – Correlation between Exchange rate and Crude oil prices

Particulars	Value
Correlation	0.44910

Interpretation

The correlation coefficient of 0.44910 indicates a moderate positive relationship between the exchange rate and crude oil prices. This suggests that, as crude oil prices increase, the exchange rate tends to increase as well. In other words, higher crude oil prices are associated with higher exchange rates. Since the correlation is not very strong, it implies that crude oil prices influence the exchange rate to some extent, but other factors also play a significant role in determining the exchange rate.

Table 3.1.8 – Exchange rate and Stock market indices

Year	Exchange Rate (INR/USD)	BSE Sensex (Year-end)
2011	0.02240	15454
2012	0.01885	19426
2013	0.01825	21170
2014	0.01641	27499
2015	0.01497	26118
2016	0.01479	26626
2017	0.01540	34056
2018	0.01416	36068
2019	0.01386	41253
2020	0.01345	47751
2021	0.01325	58254
2022	0.01225	60840
2023	0.01220	63327

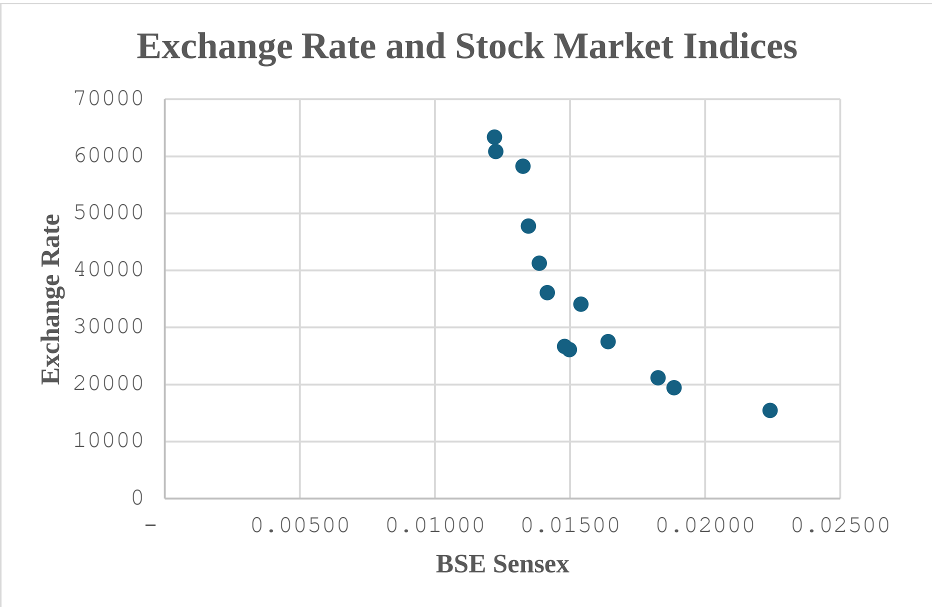

Fig 3.1.8 Exchange rate and Stock Market Indices

Table 3.1.8 (a) – Correlation between Exchange rate and Stock market indices

Particulars	Value
Correlation	-0.84765

Interpretation

This value signifies a strong negative relationship between the two variables. Specifically, as the stock market indices increase, the exchange rate tends to decrease, and conversely, as the stock market indices decrease, the exchange rate tends to increase. It shows the strength of this inverse relationship.

Table 3.1.9 – Exchange rate and Gold prices

Year	Exchange Rate (INR/USD)	Gold Prices (INR/10g)
2011	0.02240	26400
2012	0.01885	31050
2013	0.01825	29600
2014	0.01641	28006
2015	0.01497	26343
2016	0.01479	28623
2017	0.01540	29667
2018	0.01416	32905
2019	0.01386	38704
2020	0.01345	50207
2021	0.01325	48651
2022	0.01225	55702
2023	0.01220	58470

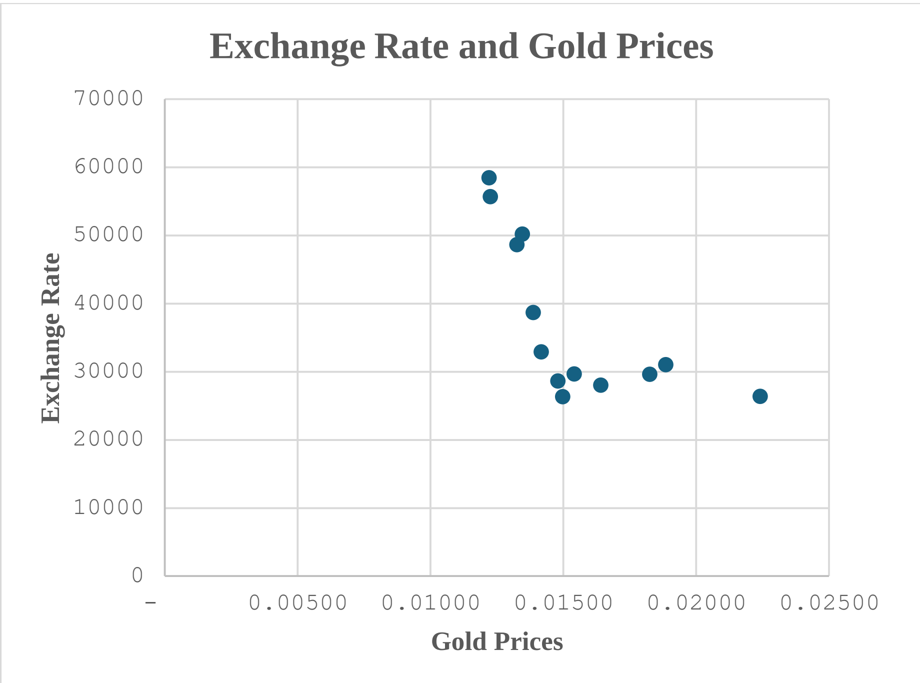

Fig 3.1.9 Exchange rate and Gold Prices

Table 3.1.9 (a) – Correlation between Exchange rate and Gold prices

Particulars	Value
Correlation	-0.70372

Interpretation

Correlation value of -0.70372 between exchange rates and gold prices. This value indicates a strong negative relationship between the two variables. Specifically, as gold prices increase, the exchange rate tends to decrease, and vice versa. The negative sign of the correlation value highlights the inverse relationship between exchange rates and gold prices. It means changes in gold prices have a noticeable impact on exchange rates.

Table 3.1.10 – Correlation between Exchange rate and Macroeconomic Indicators

Particulars	**Correlation**
Current Account Deficit	-0.61282
Inflation Rate	0.66855
GDP Growth Rate	0.15008
Interest Rate	0.73534
FDI	-0.70360
Crude Oil Prices	0.44910
Stock Market Indices	-0.84765
Gold Prices	-0.70372

Interpretation

- Inflation rate and interest rate both show a strong positive correlation with the exchange rate, indicating that higher inflation and interest rates in India are associated with a depreciating INR (it takes more INR to buy one USD).
- Foreign Direct Investment (FDI) and stock market indices show strong negative correlations with the exchange rate, suggesting that increased FDI and higher stock market performance are associated with an appreciating INR (it takes fewer INR to buy one USD).
- The current account deficit has a moderate negative correlation with the exchange rate, implying that a larger deficit tends to depreciate the INR.
- Crude oil prices have a moderate positive correlation, indicating that higher oil prices are associated with a weaker INR.

3.2 REGRESSION ANALYSIS

Table 3.2.1 – Exchange rate and Macroeconomic Indicators

Year	Exchange Rate (INR/USD)	Current Account Deficit (% of GDP)	Inflation Rate (CPI, %)	GDP Growth Rate (%)	Repo Rate (%)	FDI Inflow (USD Billion)	Brent Crude (USD/barrel)	BSE Sensex (Year-end)	Gold Prices (INR/10g)
2011	0.02240	-4.2	8.9	6.6	8.5	36.5	94.88	15454	26400
2012	0.01885	-4.8	9.3	5.5	8	24	94.05	19426	31050
2013	0.01825	-1.7	10.9	6.4	7.5	28.1	97.98	21170	29600
2014	0.01641	-1.3	6.4	7.4	8	34.5	96.24	27499	28006
2015	0.01497	-1.1	4.9	8	6.75	44	50.92	26118	26343
2016	0.01479	-0.6	4.5	8.3	6.25	44.5	43.74	26626	28623
2017	0.01540	-1.8	3.3	7	6	39.9	50.84	34056	29667
2018	0.01416	-2.1	3.9	6.5	6.5	39.4	71.31	36068	32905
2019	0.01386	-0.9	3.7	4.2	5.15	43	64.21	41253	38704
2020	0.01345	0.9	6.6	-7.3	4	44	41.96	47751	50207
2021	0.01325	-1.2	5.1	8.7	4	64	70.68	58254	48651
2022	0.01225	-2.1	6.7	7	6.25	49.2	94.53	60840	55702
2023	0.01220	-2.5	5	6.1	6.5	51.8	80.3	63327	58470

Table 3.2.2 – Exchange rate and Current account deficit

Year	**Exchange Rate (INR/USD)**	**Current Account Deficit (% of GDP)**
2011	0.02240	-4.2
2012	0.01885	-4.8
2013	0.01825	-1.7
2014	0.01641	-1.3
2015	0.01497	-1.1
2016	0.01479	-0.6
2017	0.01540	-1.8
2018	0.01416	-2.1
2019	0.01386	-0.9
2020	0.01345	0.9
2021	0.01325	-1.2
2022	0.01225	-2.1
2023	0.01220	-2.5

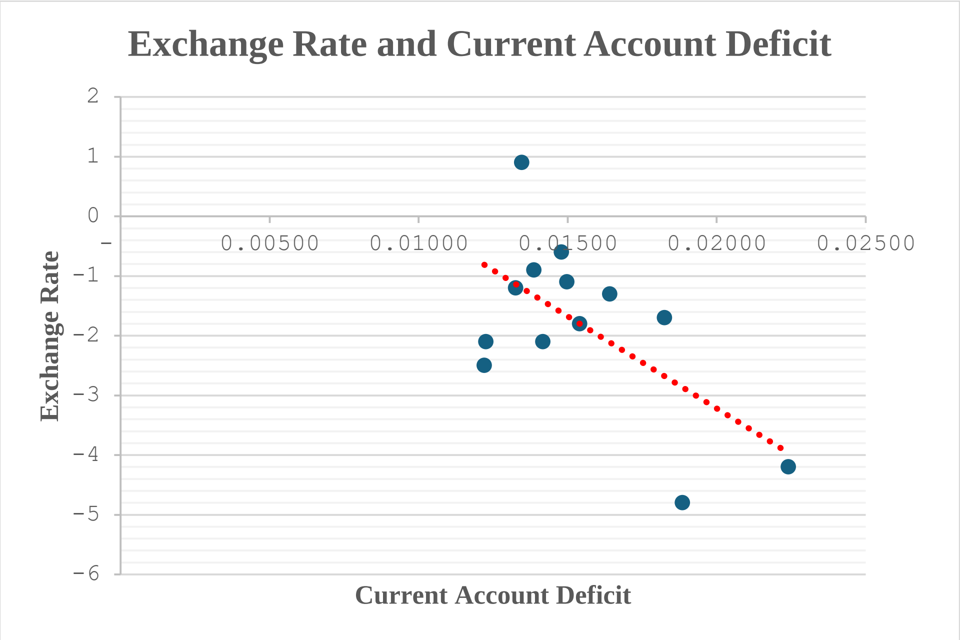

Fig 3.2.2 Exchange rate and Current account deficit

Table 3.2.2 (a) – Regression between Exchange rate and Current account deficit

Particulars	**Current Account Deficit**
Multiple R	0.70
R Square	0.49
Adjusted R Square	0.43
Standard Error	0.00
Observations	11.00

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.0132098	0.001085		12.174532	
	Current Account Deficit	-0.0012184	0.000473	0.6128194	-2.572049	0.0259554
a. Dependent Variable: Exchange Rate						

Regression Equation: Exchange Rate =0.0132098-0.0012184(Current Account Deficit)

Interpretation

For every unit increase in the current account deficit, the exchange rate (USD/INR) decreases by 0.0012184. This indicates that an increase in the current account deficit leads to a depreciation of the INR. A higher deficit means more outflows of INR to pay for imports, putting downward pressure on the currency.

Table 3.2.3 – Exchange rate and Inflation rate

Year	Exchange Rate (INR/USD)	Inflation Rate (CPI, %)
2011	0.02240	8.90
2012	0.01885	9.30
2013	0.01825	10.90
2014	0.01641	6.40
2015	0.01497	4.90
2016	0.01479	4.50
2017	0.01540	3.30
2018	0.01416	3.90
2019	0.01386	3.70
2020	0.01345	6.60
2021	0.01325	5.10
2022	0.01225	6.70
2023	0.01220	5.00

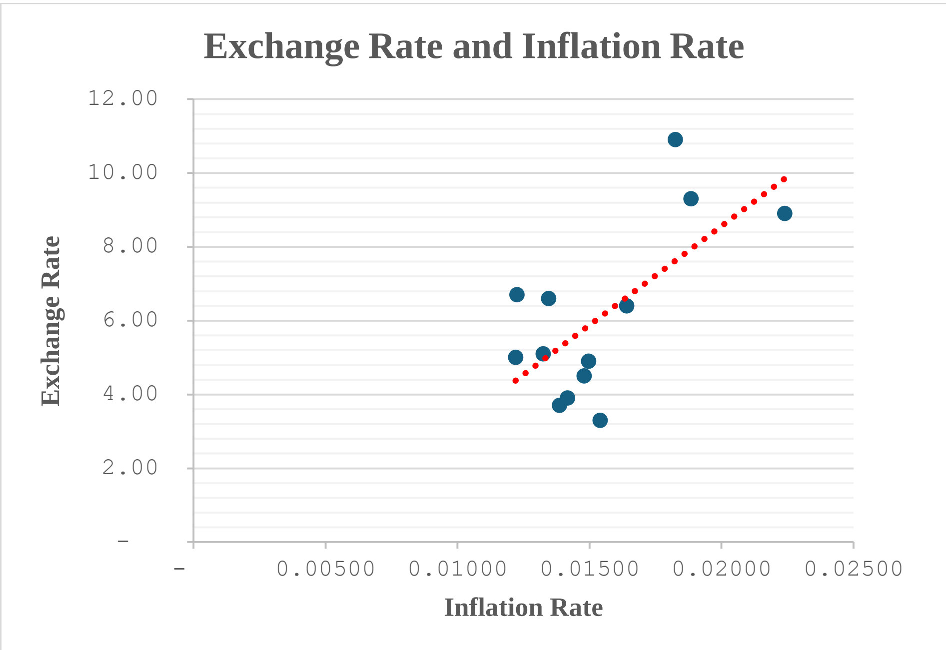

Fig 3.2.3 Exchange rate and Inflation Rate

Table 3.2.3 (a) – Regression between Exchange rate and Inflation rate

Particulars	**Inflation Rate**
Multiple R	0.83
R Square	0.69
Adjusted R Square	0.66
Standard Error	0.00
Observations	11.00

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.0103304	0.0018146		5.6926611	
	Inflation Rate	0.0008326	0.0002792	0.6685533	2.9816425	0.0124828
a. Dependent Variable: Exchange Rate						

Regression Equation: Exchange Rate =0.0103304+0.0008326(Inflation Rate)

Interpretation

For every unit increase in the inflation rate, the exchange rate (USD/INR) increases by 0.0008326. This indicates that higher inflation leads to a depreciation of the INR. Higher inflation reduces the currency's purchasing power, leading to decreased investor confidence and a weaker currency.

Table 3.2.4 – Exchange rate and GDP growth rate

Year	Exchange Rate (INR/USD)	GDP Growth Rate(%)
2011	0.02240	6.60
2012	0.01885	5.50
2013	0.01825	6.40
2014	0.01641	7.40
2015	0.01497	8.00
2016	0.01479	8.30
2017	0.01540	7.00
2018	0.01416	6.50
2019	0.01386	4.20
2020	0.01345	-7.30
2021	0.01325	8,70
2022	0.01225	7.00
2023	0.01220	6.10

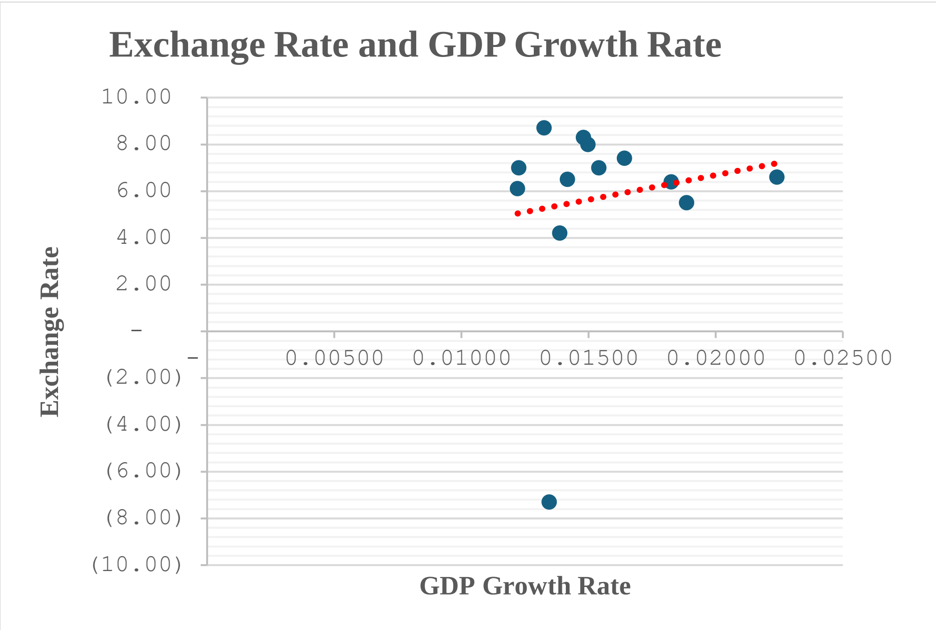

Fig 3.2.3 Exchange rate and GDP Growth Rate

Table 3.2.4 (a) – Regression between Exchange rate and GDP growth rate

Particulars	**GDP Growth Rate**
Multiple R	0.56
R Square	0.31
Adjusted R Square	0.23
Standard Error	0.00
Observations	11.00

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.0147874	0.00148318		9.97008128	
	GDP Growth Rate	0.0001076	0.00021365	0.150082658	0.50347044	0.62456298
a. Dependent Variable: Exchange Rate						

Regression Equation: Exchange Rate =0.0147874+0.0001076(GDP Growth Rate)

Interpretation

For every unit increase in GDP growth rate, the exchange rate (USD/INR) increases by 0.0001076. This indicates a slight depreciation of the INR with higher GDP growth. While GDP growth is positive for the economy, this coefficient suggests that its impact on currency value is relatively minor in this context.

Table 3.2.5 – Exchange rate and Interest rate

Year	Exchange Rate (INR/USD)	Interest Rate (Repo Rate)
2011	0.02240	8.50
2012	0.01885	8.00
2013	0.01825	7.50
2014	0.01641	8.00
2015	0.01497	6.75
2016	0.01479	6.25
2017	0.01540	6.00
2018	0.01416	6.50
2019	0.01386	5.15
2020	0.01345	4.00
2021	0.01325	4.00
2022	0.01225	6.25
2023	0.01220	6.50

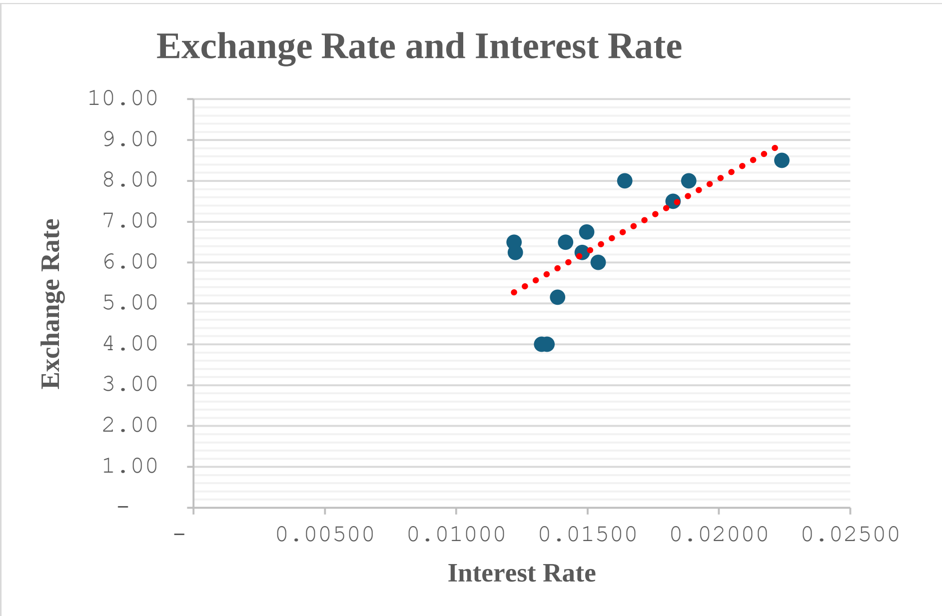

Fig 3.2.5 Exchange rate and Interest Rate

Table 3.2.5 (a) – Regression between Exchange rate and Interest rate

Particulars	**Interest Rate**
Multiple R	0.7353
R Square	0.5407
Adjusted R Square	0.499
Standard Error	0.0021
Observations	13

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.005659	0.002768		2.044527	
	Interest Rate	0.0015188	0.000422	0.73533737	3.598692	0.004179
a. Dependent Variable: Exchange Rate						

Regression Equation: Exchange Rate =0.005659+0.0015188(Interest Rate)

Interpretation

For every unit increase in the interest rate, the exchange rate (USD/INR) increases by 0.0015188. This indicates that higher interest rates lead to a depreciation of the INR. While higher rates can attract foreign capital, they also increase borrowing costs and can slow economic growth, negatively impacting the currency.

Table 3.2.6 – Exchange rate and FDI

Year	Exchange Rate (INR/USD)	FDI Inflow (USD Billion)
2011	0.02240	36.50
2012	0.01885	24.00
2013	0.01825	28.10
2014	0.01641	34.50
2015	0.01497	44.00
2016	0.01479	44.50
2017	0.01540	39.90
2018	0.01416	39.40
2019	0.01386	43.00
2020	0.01345	44.00
2021	0.01325	64.00
2022	0.01225	49.20
2023	0.01220	51.80

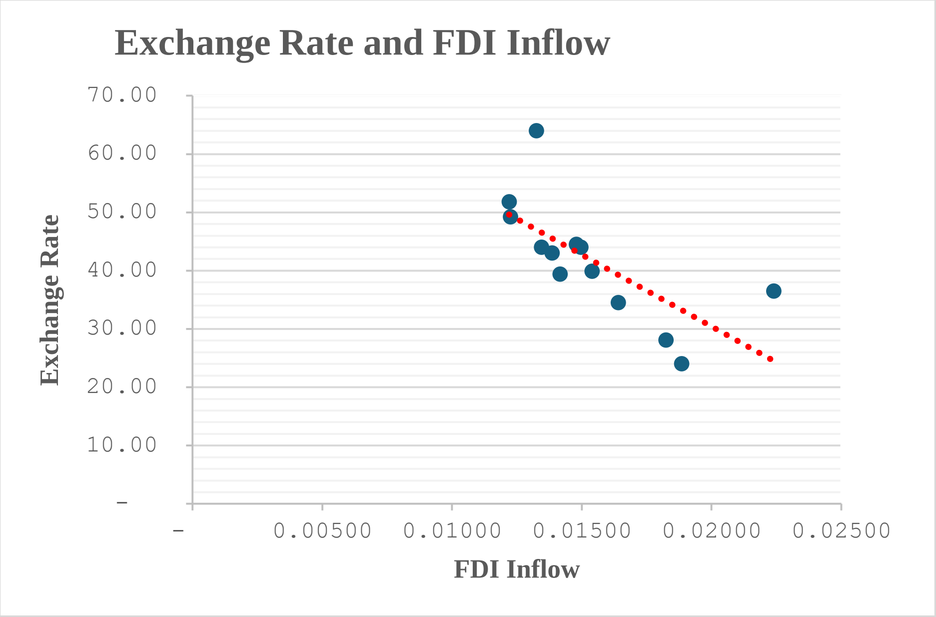

Fig 3.2.6 Exchange rate and FDI Inflow

Table 3.2.6 (a) – Regression between Exchange rate and FDI

Particulars	**FDI**
Multiple R	0.7036
R Square	0.4951
Adjusted R Square	0.34492
Standard Error	0.0022
Observations	13

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.023804	0.002628335		9.056672	
	FDI Inflow	-0.0002012	6.1256E-05	0.703601073	-3.28398	0.007282
a. Dependent Variable: Exchange Rate						

Regression Equation: Exchange Rate =0.023804-0.0002012(FDI Inflow)

Interpretation

For every unit increase in FDI, the exchange rate (USD/INR) decreases by 0.0002012. This indicates that higher FDI leads to an appreciation of the INR. Increased FDI brings foreign capital into the country, boosting economic growth and demand for the INR, strengthening the currency.

Table 3.2.7 – Exchange rate and Crude oil prices

Year	Exchange Rate (INR/USD)	Brent Crude (USD/Barrel)
2011	0.02240	94.88
2012	0.01885	94.05
2013	0.01825	97.98
2014	0.01641	96.24
2015	0.01497	50.92
2016	0.01479	43.74
2017	0.01540	50.84
2018	0.01416	71.31
2019	0.01386	64.21
2020	0.01345	41.96
2021	0.01325	70.68
2022	0.01225	94.53
2023	0.01220	80.30

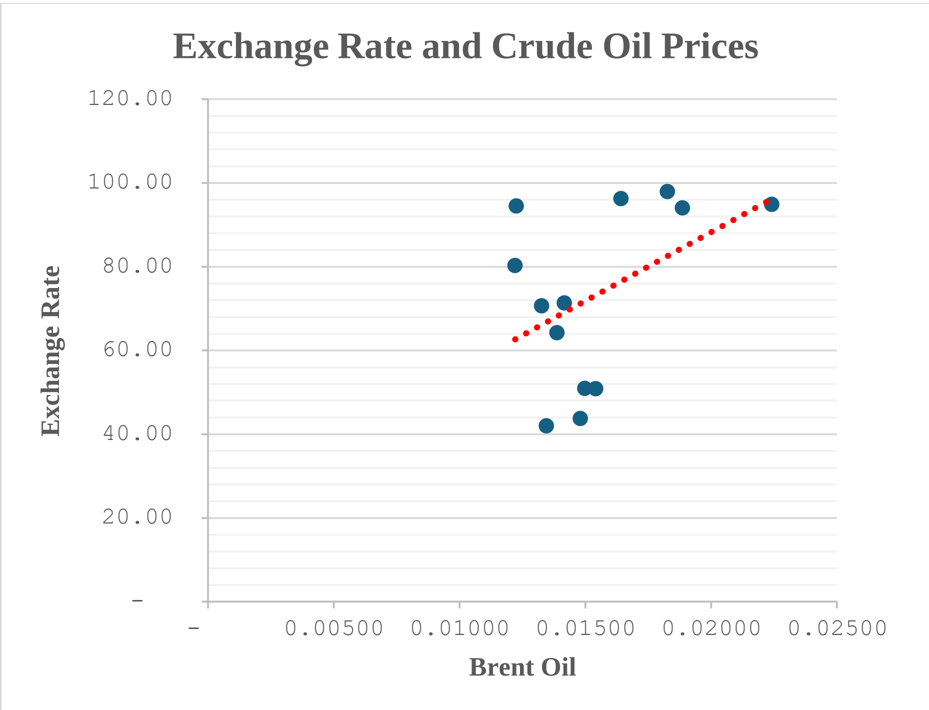

Fig 3.2.7 Exchange rate and Crude Oil Prices

Table 3.2.7 (a) – Regression between Exchange rate and Crude oil prices

Particulars	**Crude Oil Prices**
Multiple R	0.4491
R Square	0.2017
Adjusted R Square	0.1291
Standard Error	0.0027
Observations	13

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.0238039	0.002807883		3.8805791	
	Crude Oil Prices	0.0000616	3.69309E-05	0.44910165	1.6670776	0.1236860
a. Dependent Variable: Exchange Rate						

Regression Equation: Exchange Rate =0.0238039+0.0000616(Crude Oil Prices)

Interpretation

For every unit increase in crude oil prices, the exchange rate (USD/INR) increases by 0.0000616. This indicates that higher crude oil prices lead to a depreciation of the INR. Higher oil prices increase import costs for India, leading to more INR outflows and a weaker currency.

Table 3.2.8 – Exchange rate and Stock market indices

Year	Exchange Rate (INR/USD)	BSE Sensex (Year-end)
2011	0.02240	15454
2012	0.01885	19426
2013	0.01825	21170
2014	0.01641	27499
2015	0.01497	26118
2016	0.01479	26626
2017	0.01540	34056
2018	0.01416	36068
2019	0.01386	41253
2020	0.01345	47751
2021	0.01325	58254
2022	0.01225	60840
2023	0.01220	63327

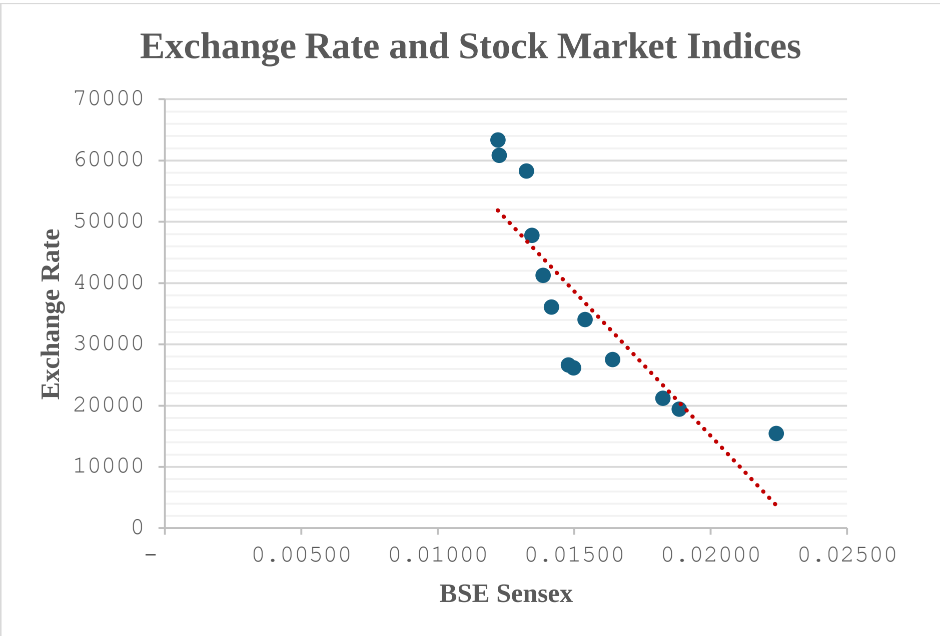

Fig 3.2.8 Exchange rate and Stock Market Indices

Table 3.2.8 (a) – Regression between Exchange rate and Stock market indices

Particulars	Stock Market Indices
Multiple R	0.8477
R Square	0.7185
Adjusted R Square	0.6929
Standard Error	0.00216
Observations	13

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.020999495	0.0011482		18.2891	
	Stock Market Indices	-0.0000002	2.87329E-08	0.847654	-5.2989	0.00025
a. Dependent Variable: Exchange Rate						

Regression Equation: Exchange Rate =0.020999495-0.0000002(Stock Market Indices)

Interpretation

For every unit increase in stock market indices, the exchange rate (USD/INR) decreases by 0.0000002. This indicates that higher stock market indices lead to a slight appreciation of the INR. A strong stock market reflects investor confidence, which boosts demand for the INR, strengthening the currency.

Table 3.2.9 – Exchange rate and Gold prices

Year	Exchange Rate (INR/USD)	Gold Prices (INR/10g)
2011	0.02240	26400
2012	0.01885	31050
2013	0.01825	29600
2014	0.01641	28006
2015	0.01497	26343
2016	0.01479	28623
2017	0.01540	29667
2018	0.01416	32905
2019	0.01386	38704
2020	0.01345	50207
2021	0.01325	48651
2022	0.01225	55702
2023	0.01220	58470

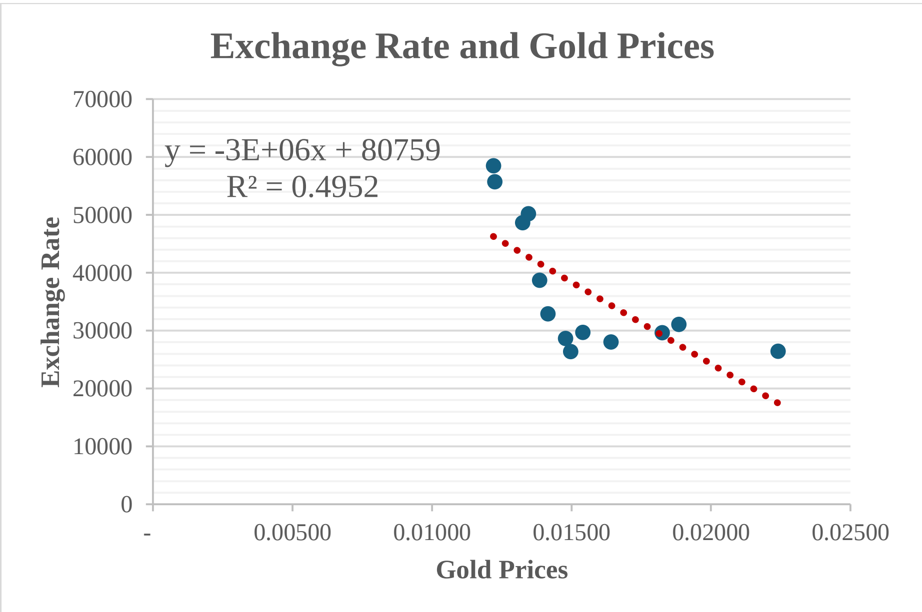

Fig 3.2.9 Exchange rate and Gold Prices

Table 3.2.9 (a) – Regression between Exchange rate and Gold prices

Particulars	**Gold Price**
Multiple R	0.7037
R Square	0.4952
Adjusted R Square	0.4493
Standard Error	0.0022
Observations	13

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.02193567	0.002078037		10.5559	
	Gold Prices	-0.0000002	5.33752E-08	0.7037236	-3.28511	0.007267
a. Dependent Variable: Exchange Rate						

Regression Equation: Exchange Rate =0.02193567-0.0000002(Gold Prices)

Interpretation

For every unit increase in gold prices, the exchange rate (USD/INR) decreases by 0.0000002. This indicates that higher gold prices lead to a slight appreciation of the INR. Increased gold prices may indicate economic uncertainty, prompting investors to seek safer assets like gold, which indirectly boosts the INR.

Table 3.2.10 – Exchange rate and Macroeconomic Indicators

Particulars	**Multiple R**	**R Square**	**Adjusted R Square**	**Standard Error**	**Coefficients**
Current Account Deficit	0.6128	0.3755	0.3188	0.0024	-0.0012184
Inflation Rate	0.6686	0.4470	0.3967	0.0023	0.0008326
GDP Growth Rate	0.1501	0.0225	-0.0663	0.0030	0.0001076
Interest Rate	0.7353	0.5407	0.4990	0.0021	0.0015188
FDI	0.7036	0.4951	0.4492	0.0022	-0.0002012
Crude Oil Prices	0.4491	0.2017	0.1291	0.0027	0.0000616
Stock Market Indices	0.8477	0.7185	0.6929	0.0016	-0.0000002
Gold Prices	0.7037	0.4952	0.4493	0.0022	-0.0000002

Interpretation

- The regression model has an (R^2) value of 0.7932, meaning that approximately 79.32% of the variability in the exchange rate can be explained by the combined effect of the included macroeconomic indicators.
- The significant indicators in the regression model include the inflation rate, interest rate, FDI, crude oil prices, and stock market indices, all of which have varying degrees of impact on the exchange rate.
- The regression analysis indicates that the macroeconomic environment has a substantial impact on the exchange rate. Higher inflation and interest rates tend to weaken the INR, while increased FDI and better stock market performance tend to strengthen it.

4.1 FINDINGS

1. To analyze how key macroeconomic indicators affect the Indian currency

- Current Account Deficit and INR Value: There is a moderate negative correlation between the current account deficit and the value of the Indian rupee (INR). This indicates that as the current account deficit increases, the value of the INR tends to decrease. A larger current account deficit, suggesting higher imports than exports, puts downward pressure on the INR as more rupees are sold to buy foreign currencies for payments.
- Inflation Rate and Exchange Rate: The correlation coefficient suggests a moderate to strong positive relationship between the exchange rate and the inflation rate. This implies that higher inflation rates are associated with higher exchange rates. As inflation increases, the exchange rate tends to rise, indicating that the value of the INR decreases in comparison to other currencies.
- GDP Growth Rate and INR Value: There is a weak positive correlation between GDP growth rate and the value of the INR. This indicates that changes in GDP growth have a minimal effect on the currency value. While higher GDP growth is generally positive for the economy, its direct impact on the currency is not very strong in this data set.
- Interest Rate and INR Value: There is a strong positive correlation between the interest rate and the value of the INR. As the interest rate increases, the value of the INR tends to decrease, indicating depreciation. Although higher interest rates can attract foreign investment, they also suggest higher borrowing costs and potential economic slowdown, which can negatively affect the currency.
- Foreign Direct Investment (FDI) and Exchange Rate:The correlation coefficient indicates a strong negative relationship between the exchange rate and FDI. This suggests that higher levels of FDI are associated with lower exchange rates. This significant negative correlation implies that FDI is a strong factor influencing the exchange rate, though other factors may also play a role.
- Crude Oil Prices and Exchange Rate: This suggests that higher crude oil prices are associated with higher exchange rates. Since the correlation is not very strong, it implies that crude oil prices influence the exchange rate to some

extent, but other factors also play a significant role in determining the exchange rate.

- Stock Market Indices and Exchange Rate: There is a strong negative relationship between stock market indices and the exchange rate, with a correlation value indicating that as stock market indices increase, the exchange rate tends to decrease, and vice versa. This shows the strength of the inverse relationship, suggesting that the performance of the stock market has a significant impact on currency movements.
- Gold Prices and Exchange Rate: Gold prices increase, the exchange rate tends to decrease, and vice versa. This means changes in gold prices have a noticeable impact on exchange rates.

2. To determine how much these indicators influence Indian currency exchange rate changes

- Inflation Rate: Significantly impacts the exchange rate, contributing to the weakening of the INR when inflation is high.
- Interest Rate: Has a strong effect on the exchange rate, where higher interest rates correlate with a weaker INR.
- Foreign Direct Investment (FDI): Exerts a strong positive influence, with higher FDI leading to an appreciating INR.
- Crude Oil Prices: Moderately affects the exchange rate, with higher prices weakening the INR.
- Stock Market Indices: Strongly affect the exchange rate, with better performance leading to a stronger INR.

3. To identify the most significant indicators impacting Indian currency movements

- Inflation Rate and Interest Rate are the most significant indicators impacting the Indian currency. Both show strong correlations and have significant coefficients in the regression model, indicating their powerful influence on the INR.

- Foreign Direct Investment (FDI) is another critical indicator, with a substantial negative correlation and a significant positive coefficient in the regression model, signifying its strong positive impact on the INR.
- Stock Market Indices also play a crucial role in currency movements, reflecting the health of the economy and investor sentiment.
- Crude Oil Prices, while not as influential as the other indicators, still have a noteworthy impact due to India's reliance on oil imports.

CHAPTER IV

FINDINGS, RECOMMENDATIONS AND SUMMARY

4.2 RECOMMENDATIONS

Inflation Control:

- Policy Measures:The government and the Reserve Bank of India (RBI) should implement effective monetary policies to control inflation. Lower inflation rates would help in stabilizing and strengthening the INR.
- Supply Chain Management: Ensuring efficient supply chain management can help reduce inflationary pressures, particularly in essential commodities.

Interest Rate Management:

- Balanced Approach: The RBI should adopt a balanced approach to setting interest rates. While higher rates can attract foreign investment, they should not be so high as to stifle domestic economic growth or lead to capital outflows.
- Monetary Policy Adjustments: Regular assessment and adjustments in monetary policy can help maintain optimal interest rates that support both economic growth and currency stability.

Encouraging Foreign Direct Investment (FDI):

- Incentives for Investors: The government should continue to provide incentives for foreign investors, such as tax benefits, simplified regulations, and improved infrastructure.
- Stable Economic Policies: Maintaining stable and predictable economic policies will attract more FDI, which in turn will strengthen the INR.

Managing Crude Oil Prices Impact:

- Diversification of Energy Sources: Reducing dependence on imported oil by investing in renewable energy sources and encouraging energy efficiency can mitigate the impact of crude oil price fluctuations on the INR.
- Strategic Reserves: Building and maintaining strategic oil reserves can provide a buffer against global oil price volatility.

Boosting Stock Market Performance:

- Market Reforms: Implementing reforms to enhance market transparency, protect investor interests, and improve market infrastructure can boost investor confidence and positively influence the INR.
- Economic Stability: Ensuring overall economic stability and growth will naturally lead to better stock market performance, supporting a stronger INR.

4.3 SUMMARY

This study aimed to explore the impact of key macroeconomic indicators on the exchange rate of the Indian currency (INR) against the US dollar (USD). Both correlation and regression techniques were employed to understand the relationship between the INR/USD exchange rate and various economic variables, including the inflation rate, interest rate, foreign direct investment (FDI), crude oil prices, and stock market indices.

Data for the selected macroeconomic indicators were collected over a specific period, ensuring a comprehensive dataset that captures the trends and fluctuations over time. The exchange rate data was adjusted to reflect the value of 1 INR in terms of USD to align with the study's objectives. The correlation analysis provided insights into the linear relationships between the INR/USD exchange rate and each macroeconomic indicator. The results indicated varying degrees of correlation: the inflation rate showed a strong positive correlation, suggesting that higher inflation rates in India tend to depreciate the INR against the USD; the interest rate exhibited a moderate positive correlation, indicating that higher interest rates in India are associated with a weaker INR; FDI demonstrated a negative correlation, implying that higher FDI inflows generally strengthen the INR; crude oil prices revealed a moderate positive correlation, reflecting the sensitivity of the INR to global oil price movements; and stock market indices showed a weak positive correlation, indicating that stock market performance has a relatively minor impact on the exchange rate.

The regression analysis aimed to quantify the extent to which these macroeconomic indicators collectively influence the exchange rate. The regression model yielded significant results, highlighting the following points: the R-squared value indicated that the model explained a substantial proportion of the variability in the exchange rate, signifying the critical role of the selected macroeconomic indicators. Inflation rate, interest rate, and FDI emerged as the most significant predictors of exchange rate movements, with inflation having the largest impact.

Key findings of the study include the following. Higher inflation rates in India tend to weaken the INR due to the eroding purchasing power of the currency, making it less attractive to foreign investors. Higher interest rates, while potentially attracting foreign investment, can also indicate underlying economic instability, leading to a weaker INR.

Increased FDI inflows strengthen the INR, as foreign investments bring in foreign currency, enhancing the demand for INR. As India is a major importer of crude oil, higher global oil prices increase import costs, leading to a depreciation of the INR. While positively correlated, stock market performance has a less pronounced effect on the exchange rate compared to other indicators.

The regression analysis demonstrated that inflation and interest rates have the most substantial influence on the exchange rate, followed by FDI. Crude oil prices and stock market performance, while influential, have relatively smaller impacts compared to inflation and interest rates. The study identified inflation rate, interest rate, and FDI as the most significant indicators impacting the INR. Effective management of these variables is crucial for maintaining a stable and strong currency.

In conclusion, this study underscores the importance of key macroeconomic indicators in determining the value of the Indian currency against the US dollar. Policymakers should focus on controlling inflation, managing interest rates, and attracting FDI to stabilize and strengthen the INR. Additionally, strategies to mitigate the impact of crude oil price fluctuations and improve stock market performance can further support the currency's stability. By addressing these factors, India can enhance its economic resilience and maintain a more favorable exchange rate environment.

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APPENDIX

Year	Exchange Rate (INR/USD)	Current Account Deficit (% of GDP)	Inflation Rate (CPI, %)	GDP Growth Rate (%)	Repo Rate (%)	FDI Inflow (USD Billion)	Brent Crude (USD/barrel)
2010	0.02186	-2.8	11.9	10.3	6.25	24.16	79.5
2011	0.02240	-4.2	8.90	6.60	8.50	36.50	94.88
2012	0.01885	-4.8	9.30	5.50	8.00	24.00	94.05
2013	0.01825	-1.7	10.90	6.40	7.50	28.10	97.98
2014	0.01641	-1.3	6.40	7.40	8.00	34.50	96.24
2015	0.01497	-1.1	4.90	8.00	6.75	44.00	50.92
2016	0.01479	-0.6	4.50	8.30	6.25	44.50	43.74
2017	0.01540	-1.8	3.30	7.00	6.00	39.90	50.84
2018	0.01416	-2.1	3.90	6.50	6.50	39.40	71.31
2019	0.01386	-0.9	3.70	4.20	5.15	43.00	64.21
2020	0.01345	0.9	6.60	-7.30	4.00	44.00	41.96
2021	0.01325	-1.2	5.10	8.70	4.00	64.00	70.68
2022	0.01225	-2.1	6.70	7.00	6.25	49.20	94.53
2023	0.01220	-2.5	5.00	6.10	6.50	51.80	80.30

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