

MACROECONOMIC FACTORS' EFFECT ON THE INDIA STOCK MARKET

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ABSTRACT

The impact of macroeconomic factors on the Indian stock market is the subject of this research. The study aims to look into the relationship between selected macroeconomic factors and the price of Indian stocks. The impact of selected macroeconomic variables on stock market price returns is examined in this report, which may assist investors in making purchasing and selling decisions of securities. By examining the relationship between the dependent (Sensex) and independent variables in this analysis, investors may be able to make better decisions (Macroeconomic factors). The research employs descriptive methods, with Pearson correlation being used to determine the relationship between the dependent and independent variables. The research looks at data from 1991 to 2017. The results show that the Sensex and macroeconomic variables have a positive relationship, except for average inflation and unemployment rate, which have a negative relationship.

Keywords: Stock market, Economic factors, SEBI

1. INTRODUCTION

After 1991, when the government adopted the Liberalization, Privatization, and Globalization Model in India, the Indian stock market has experienced numerous ups and downs. This model has linked every country to every other country, resulting in the creation of a single market. As a result, from an economic standpoint, the stock market is becoming increasingly important, as it facilitates the flow of capital in developing and developed countries, thus promoting the growth of the country's industry and business. The Indian stock market plays a major role in the development of the Indian economy. A slight change in the stock market affects the

economy's results. Investors, whether Indians or foreigners, may contribute or take assets (funds) in the stock market for capital appreciation.

Before and after the process of investing in the stock market, an investor considers several factors. The past output of a company, return on an index or by company, return on assets or equity, free cash flow, internal management, and various macroeconomic factors such as GDP, inflation, interest rate, unemployment rate, and so on are examples of these various factors. The return on the stock market is thought to be affected by changes or fluctuations in macroeconomic conditions. Some macroeconomic factors have a major impact on stock returns, while others have a minor impact. The industry can be divided into two categories: primary and secondary markets. Both the main and secondary markets are intertwined since the primary market generates the secondary market. The main market is where different corporations and governments sell securities for the first time in the market, and the secondary market is where these securities are sold again.

The SENSEX, which was launched in 1986, is made up of 30 of the most actively traded stocks in the industry. To be honest, they account for a sizable portion of the BSE's market capitalization. They cover 13 different economic sectors and are leaders in their respective fields. In India, the SENSEX is regarded as a benchmark. Since the BSE is the main exchange for the Indian resold market, the SENSEX is considered a significant indicator of the Indian securities exchange. It is the most widely used metric when reporting on the state of the industry.

An index's primary function is to detect price changes. A stock index, for example, will reflect changes in stock prices, while a bond index will capture the direction in which bond prices rise or fall. If the SENSEX increases, it indicates that the market is doing well. Since stocks should represent what companies plan to gain in the future, a rising index indicates that investors anticipate higher profits from companies. It is also a reflection of the state of the Indian economy.

2. INDIAN STOCK MARKET TRENDS

India's stock market is one of the most powerful in Asia and the world. The Bombay Stock Exchange (Sensex) is one of the oldest stock exchanges in the world, while the National Stock Exchange is considered the greatest in terms of technological innovation and complexity.

Following globalization, the Indian stock market grew at an unsustainable pace, and as a result, it became a magnet for investors from all over the world. The entire decade of the 1990s was used to investigate and adopt a productive and profitable system, and the stock market began to function proficiently and demonstrate its new stature from the time of globalization, at various stages of its growth. There have been many ups and downs in the Indian stock market. There have been times when the Indian stock market reaches new heights, smashing previous highs, and there have also been times when the stock market plummets to new lows. Since the stock market index is such an important part of the economy, its ups and downs cannot be overlooked, since an economy is influenced by a variety of policies and other inevitable circumstances.

3. MACROECONOMIC FACTORS

- a. Inflation is the gradual increase in the cost or price of a few products over time. It is calculated using a variety of indexes, each of which provides unique information on the costs of the items shown. For specific groups of people, such as farm laborers or urban non-manual workers, the index may be the Consumer Price Index (CPI) or Wholesale Price Index (WPI). Each index is created uniquely, using a specific year as the base year and taking into account the value change over time.
- b. The unemployment rate is defined as the percentage of the workforce that is unemployed. Workers are considered jobless if they are currently unemployed, even though they are competent and eager to work. The total labor force is made up of all working and unemployed people in a given economy.
- c. An exchange rate is the price of a country's currency in terms of money. In this way, an exchange rate has two segments: domestic currency which foreign currency, and can be expressed either directly or indirectly. The expense of a unit of remote cash is conveyed as far as the country's money in an instant citation. The expense of a unit of the country's own currency is communicated in a roundabout citation about the foreign currency. The entire procedure of a nation's sending out and taking in is entirely dependent on the country's exchange rate of money value.
- d. For Indian financial experts, gold is a viable alternative to the stock market. Because of the current financial world's monetary emergency, gold's significance has grown in the modern world. The financial experts are putting their money into gold. Gold is viewed

as a speculative investment choice. It is frequently said that gold is the best safeguard for gaining control over others.

- e. Foreign Exchange Reserves, also known as Forex Reserves, are the reserves of various currencies such as the Japanese yen, the US dollar, the British pound, and the Euro, which are controlled and held by the Reserve Bank of India and several other financial institutions as approved by the government. The aim of maintaining such reserves is to deal with any unforeseen financial shocks or crises.
- f. Gross Domestic Product (GDP) is the quantitative measure of an economy's overall financial movement. GDP, in more specific words, refers to the monetary calculation of the significant number of goods and services generated or manufactured in an economy over some time and within a country's land limit. Gross domestic product (GDP) is a collection of indicators that can be used to estimate the economy's performance.

4. SECURITIES AND EXCHANGE BOARD OF INDIA

The Government of India established the "Securities and Exchange Board of India" (SEBI) on April 12, 1988, as a temporary administrative body to advance, organize, and soundly advance securities, as well as to save and protect the interests of investors and shareholders. The Securities and Exchange Board of India had to operate under the general definitive supervision of the Ministry of Finance, Government of India, before receiving statutory status through an announcement on January 30, 1992.

The declaration was later amended by the Securities and Exchange Board of India Act, 1992, which was passed by Parliament. The goals were in line with the formation of SEBI, which was aimed at improving the capital market. The stock market had made significant progress in the middle of the 1980s, as shown by the increasing support of the general public. This helps market participants and the market itself daily. Capitalization sparked a variety of actions of omission involving associations, industry analysts, shareholders or investors, and others involved with the stock market.

The self-styled exchange lenders, casual private game plans, device of expenditures and casual premium on new issues, non-adherence of game plans of the Companies Act, encroachment of rules and controls of stock exchanges, and posting essentials delay in movement with the

offers, and so on are all powerful examples of these acts of negligence in the corporate segment. These acts of disobedience and out-of-line sharing of honors have shattered theorist certainty and copied money-related pro grievances.

5. ROLE OF SECURITIES AND EXCHANGE BOARD OF INDIA

The Securities and Exchange Board of India was founded to provide a forum for better securities exchange through the securities markets. It also means to increase competition and make progress. The rules and controls associations, as well as their interrelationships, establishments, procedures, instruments, and approach system, are all part of this state. This state is dedicated to meeting the fundamental needs of the three social activities that make up the economy, namely, stockholders (companies), monetary professionals, and market middlemen.

- a. To investors, it offers a market focus in which they will unquestionably suspect bringing the obligation and transparency that they need in an effective, reliable, and very simple and fair manner.
- b. To different investors, it is unquestionably necessary to provide confirmations for their rights and premiums by providing appropriate, accurate, and genuine details, as well as the disclosure of information on a credible introduction.
- c. It should provide a focused, professionalized, and growing business division to the mediators, along with appealing and beneficial nuts and bolts, so that they can provide better assistance to the examiners and budgetary patrons.

6. LITERATURE REVIEW

R. Mookerjee and Q. Yu (1997) examined the relationship between macroeconomic factors and Singapore stock returns using monthly data from four macroeconomic factors: wide money supply, foreign reserve, narrow money supply, and exchange rate from October 1984 to April 1993. Their research found that foreign reserves, wide and narrow money supply, and stock market returns all had a long-term relationship, though the exchange rate did not.

Sangeeta Chakravarty (2005) conducted a study from 1991 to 2005 to determine the relationship between macroeconomic factors and Indian stock market prices. The study relied on secondary monthly data. Using Granger Causality, she discovered that inflation, money

supply, and the index of industrial output all have a positive effect on Indian stock returns. There was no correlation between the exchange rate, gold prices, and the Indian stock market, according to the findings.

K. Pal and R. Mittal (2011) used quarterly data from January 1995 to December 2008 to perform a study using Johansen's co-integration method on the relationship between the Indian stock market and macroeconomic factors. Their research revealed that macroeconomic factors and the Indian stock market have a long-term relationship. The results also showed that while exchange and inflation rates have a major impact on the BSE Sensex, gross domestic savings and interest rates do not.

A. Pethe and A. Karnik (2000) used error correction modeling and co-integration to research the relationship between the Indian stock market and macroeconomic factors from April 1992 to December 1997. Their research revealed that the state of the economy and stock market values do not have a long-term relationship.

Menike (2006) looked at a study that looked at how macroeconomic factors influence stock prices in the Sri Lankan stock market, which is still evolving. From 1991 to 2002, secondary data was used. They used multivariate regression on all factors for each stock. The study also discovers that there is a connection between the Colombo Stock Exchange's stock market and macroeconomic factors. It was also discovered that macroeconomic variables such as inflation, exchange rate, and the stock market in Colombo Stock Exchange have a negative relationship.

Zhao (1999) researched to determine the relationship between the Chinese stock market and variables such as the index of industrial output and inflation. The research covered the years 1993 to 1998 and relied on secondary data. Both predicted increases in industrial output and inflation have negative associations with stock market prices, according to the findings.

Wong et al. (2005) looked at analysis to see whether macroeconomic conditions had an effect on stock prices in Singapore and the United States. They look at the long-term equilibrium relationships between macroeconomic variables and the two countries. The secondary data was used from January 1982 to December 2002. They discovered through a co-integration test that stock prices in the United States have no relationship with the money supply or interest rate, while stock prices in Singapore have a long-run equilibrium relationship with those variables.

Pimenta Junior and Hironobu Higuchi (2008) used the Granger causality test, Impulse and Response functions analysis, unit root test, and variance decomposition analysis to investigate the relationship between Ibovespa and macroeconomic factors such as inflation rate, interest rate, and exchange rate from 1994 to 2005. The research discovered that the Exchange rate was variable in the Ibovespa with a greater degree of causality; in any case, this result is factually satisfactory and impressive; along these lines, none of the factors chosen added causality to the index.

Maku and Atanda (2009) researched the short- and long-term effects of macroeconomic factors on the Nigerian capital market. From 1984 to 2007, secondary data was used. Actual production, exchange rate, inflation rate, and money supply were the macroeconomic factors studied (dependent variables). The study's findings, which were obtained using the Error Correction Model and ADF, showed that the stock index is more receptive to specific factors and, as a result, has a significant impact on the stock index.

SezginAcikalin, RafetAktas, and Seyfettin Unal (2008) used quarterly data from 1991 to 2006 to investigate the relationship between macroeconomic factors and the Istanbul Stock Exchange, Turkey's stock market. They used secondary data to discover the link. They looked at Turkey's foreign exchange rate, production volume, current account deficit, and interest rate, among other things. They established the long-run stable relationship using the vector error correlation model and co-integration test. They discovered a unidirectional relationship between the Turkish stock market and macroeconomic variables using the casualty test and those changes in the current account deficit, production level, and foreign exchange rate affect the Istanbul Stock Exchange.

Joseph Gagne Talla (2013) used monthly data from 1993 to 2012 to investigate the effect of macroeconomic factors on stock market returns, using the Stockholm Stock Exchange as an example. Four macroeconomic variables, namely the exchange rate, consumer price index, money supply, and interest rate, were studied using secondary data. The relationship was discovered using a Multivariate Regression Model, unit root test, and Granger causality test. Both currency depreciation and inflation have a major negative effect on stock market returns, according to the findings. Interest rates, on the other hand, have no major relationship but harm stock market returns. Although not big, the money supply has a positive relationship with stock market returns. Using Granger Causality, no unidirectional relationship exists between the selected macroeconomic variables and stock market returns.

Ngoc (2009) examined the relationship between Vietnamese stock prices and a macroeconomic factor, the interest rate, using monthly data from 2001 to 2008. He also shows the connection between Vietnamese stock prices and US macroeconomic factors in the report. Statistically, he discovered that the money markets, domestic production sector, and Vietnamese stock prices are all inextricably linked and that the US macroeconomic environment has a huge impact on Vietnamese stock prices.

Mgammal (2012) conducted a study to determine the impact of various macroeconomic variables such as inflation, exchange rate, and interest rate on the stock prices of two Gulf countries, namely the Kingdom of Saudi Arabia and the United Arab Emirates. For the analysis, secondary data was used from January 2008 to December 2009. The study found that in the short run, the exchange rate harms the stock price index of the Kingdom of Saudi Arabia, while the exchange rate has a positive impact on the stock price index of the United Arab Emirates. In the long run, the study's findings revealed that the United Arab Emirates stock price index is negatively correlated.

7. RESEARCH METHODOLOGY

This's study aims to determine the relationship between the stock market and a set of macroeconomic variables.

Variable Selected

Dependent Variables: SENSEX

Independent Variables:

- a. Unemployment Rate
- b. Exchange Rate
- c. Average Inflation Rate
- d. Gold Prices
- e. Foreign Exchange Rate
- f. Gross Domestic Product (GDP)

8. LIMITATIONS OF THE STUDY

Using macroeconomic conditions, this analysis is performed on the stock market indicator Sensex. The relationship is measured using just six macroeconomic variables in this analysis. The analysis must be completed in a short amount of time.

Sources of Data

The relationship between the Sensex and selected is evaluated using secondary data, macroeconomic conditions from January 1991 to December 2017. The Reserve Bank of India, the World Bank, and the Bombay Stock Exchange provided data.

9. DATA ANALYSIS

A stock market is influenced by many variables, so it is important to investigate them. This analysis aims to examine how various macroeconomic factors influence the stock market indicator "Sensex" and how this influences investors' decisions and investments. To examine the relationship, the Sensex was chosen as a dependent variable and all macroeconomic factors were chosen as independent variables.

A. GDP Rate and Sensex

Correlations

		Sensex	GDP Rate
Sensex	Pearson Correlation	1	0.407
	Sig. (2-tailed)		0.035
	N	27	27
GDP_Rate	Pearson Correlation	0.407*	1
	Sig. (2-tailed)	.035	
	N	27	27

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

The relationship between the Sensex and GDP is shown in the table above. It has been established that the Sensex and GDP rate has a positive relationship, implying that an increase in the GDP rate would also increase the Sensex or stock market. The correlation between the two is 0.407.

B. Average Inflation and Sensex

Correlations

		Sensex	Average Inflation
Sensex	Pearson Correlation	1	-.168
	Sig. (2-tailed)		.399
	N	27	27
Avg_Inflation	Pearson Correlation	-.169	1
	Sig. (2-tailed)	.399	
	N	27	27

The relationship between the Sensex and Average Inflation is depicted in the table above. The result reveals a negative relationship between average inflation and the Sensex and average inflation; P 500, implying that a rise in inflation contributes to a decrease in the stock market measure. The correlation between the two is -0.168.

C. Unemployment and Sensex

Correlations			
		Sensex	Unemployment Rate
Sensex	Pearson Correlation	1	-.735**
	Sig. (2-tailed)		.000
	N	27	27
Unemployment Rate	Pearson Correlation	-.734**	1
	Sig. (2-tailed)	.000	

N	27	27
* At the 0.01 stage, correlation is significant (2-tailed)		

The relationship between the Sensex and the unemployment rate is depicted in the table above. Since the correlation between the unemployment rate and the Sensex is -0.735, the result shows that there is a negative relationship between the two. It simply implies that as the unemployment rate rises, the stock market measure, the Sensex, falls.

D. Sensex and Exchange Rate

Correlations			
		Sensex	Exchange Rate _US_IND
Sensex	Pearson Correlation	1	.795**
	Sig. (2-tailed)		.000
	N	27	26
Exchange Rate US_IND	Pearson Correlation	.794**	1
	Sig. (2-tailed)	.000	
	N	26	26
*Correlation is significant at the 0.01 level (2-tailed).			

The relationship between the Sensex and the exchange rate is depicted in the table above. The correlation between the exchange rate and the Sensex is 0.795, indicating that there is a positive relationship between the two. It demonstrates how a change in the exchange rate can affect the stock market price.

E. Foreign Reserve and Sensex

Correlations			
		Sensex	Forex Reserve_ in_Billion
Sensex	Pearson Correlation	1	.958**
	Sig. (2-tailed)		.000

	N	27	27
Forex	Pearson Correlation	.959**	1
Reserve_in_Billion	Sig. (2-tailed)	.000	
	N	27	27
*Correlation is significant at the 0.01 level (2-tailed).			

The relationship between the Sensex and the Foreign Reserve is depicted in the table above. The result suggests that the foreign reserve and the Sensex have a positive relationship. A rise in the foreign reserve can be said to increase the Sensex or stock market values. The correlation between the two is 0.958.

F. Sensex and Gold Price

Correlations			
		Sensex	Gold Prices
Sensex	Pearson Correlation	1	.918**
	Sig. (2-tailed)		.000
	N	27	27
Gold Prices	Pearson Correlation	.918**	1
	Sig. (2-tailed)	.000	
	N	27	27
*Correlation is significant at the 0.01 level (2-tailed).			

The relationship between the Sensex and gold prices is depicted in the table above. The correlation between the gold prices and the Sensex is 0.918, indicating that there is a positive relationship between the two. It can be deduced that changes in gold prices cause changes in stock market prices, implying that increases in gold prices cause increases in stock market prices and vice versa.

10. FINDINGS

- a. The Sensex and GDP have a positive association, indicating that GDP affects the Sensex's movement. A rise in GDP almost always leads to a rise in the stock market and vice versa.
- b. The dependent variable, the Sensex, has a negative relationship with the independent variable, average inflation. Both variables are moving in the wrong direction. As the independent variable is increased, the dependent variable behaves oppositely.
- c. The correlation between the Sensex and the unemployment rate is -0.735, indicating a negative relationship. It simply means that as the unemployment rate rises, the stock market prices or the Sensex fall.
- d. The correlation between the exchange rate and the Sensex is 0.795, indicating a favorable relationship. Since the relationship between variables is positive, an increase in the exchange rate can increase the Sensex.
- e. The correlation coefficient is 0.958, indicating that the two variables, the Sensex and foreign reserve, have a positive relationship. An increase in the foreign reserve would cause the Sensex or stock market prices to rise.
- f. The correlation coefficient between the Sensex and gold prices is 0.918, indicating a positive relationship. As a result of the increase in gold prices, stock market prices will rise as well, or the Sensex will rise.

11. CONCLUSIONS

The government and policymakers must devise strategies and policies that complement the macroeconomic system and further support the Indian stock market to support macroeconomic variables. In this article, I look at how six macroeconomic factors influence the Indian stock market: unemployment rate, average inflation rate, gold prices, gross domestic product, exchange rate, and many others.

It can be inferred that all of the macroeconomic factors studied have a relationship with the Indian stock market, and all of the factors, whether positive or negative, influence the stock market's price movement. The Sensex has an inverse relationship with the unemployment rate and average inflation, while all other factors have a positive relationship.

The global recession in the early 2000s, which hit the Indian stock market in 2008, was caused by macroeconomic variables, as variables like gross domestic product fell dramatically and

other variables were also affected, according to the report. Furthermore, to improve stock market returns and retains Indian and foreign investors, the government and other policymakers must implement policies that are complementary to macroeconomic variables.

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