



# ANALYZING THE IMPACT OF SELECT MACROECONOMIC INDICATORS ON THE SHARE PRICE OF SBI BANK: AN EMPIRICAL STUDY

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## Abstract

*The study investigates the relationship between select macroeconomic indicators and the share price of the State Bank of India (SBI), one of India's largest public sector bank. Recognizing the growing importance of financial forecasting in emerging markets, the study examines how Interest Rate (IR), Inflation (IF), Money Supply (MS), and Gold Price (GP) interact with equity movements in the banking sector. Anchored in a quantitative approach, the study employs descriptive statistics, correlation matrices, and multiple regression analysis using secondary data from 2016 to 2025. Through this lens, the research aims to offer investors, financial analysts, and policymakers a framework to better understand market sensitivities and enhance strategic decision-making in volatile economic environments.*

**Key words:** Share Price, Macroeconomic Factors, Financial Forecasting

## Introduction

In today's dynamic financial environment, the stock market acts as a vital barometer reflecting the economic health of a nation. Share prices of banks, especially major public sector entities like the State Bank of India (SBI), are sensitive to changes in macroeconomic conditions. Macroeconomic indicators such as interest rates, inflation, gross domestic product (GDP), and exchange rates play a crucial role in influencing investor sentiment and market performance. These variables not only impact banking operations but also affect the valuation of financial assets, including equity shares. SBI, being a key player in India's banking sector, is significantly exposed to such macroeconomic shifts. As global and domestic economic scenarios continue to evolve, understanding the broader economic environment becomes essential for interpreting stock price movements. Analyzing these factors helps in identifying economic trends and market behavior, which is valuable for investors, policymakers, and financial analysts seeking to navigate the complexities of the stock market. According to data from the Reserve Bank of India (RBI, 2024), fluctuations in interest and inflation rates directly affect banking sector performance, influencing lending, borrowing, and investment behavior. A recent NSE report (2023) highlighted that changes in the money supply and commodity prices like gold often correlate with capital market trends.

## Literature Review

**Chen, Roll, and Ross (1986)** proposed a multifactor model to analyze the impact of macroeconomic variables on stock returns in the U.S. market. Their research concluded that changes in industrial production, interest rates, inflation, and risk premiums significantly influence stock prices. The study emphasized that these macroeconomic factors represent systematic risks, which are priced into the market and are essential for understanding stock valuation and investor behavior.

**Asprem (1989)** conducted a comparative study across ten European countries to evaluate how macroeconomic factors affect stock prices. The study identified that industrial production, inflation, interest rates, and monetary growth play a significant role in determining stock market returns. It concluded that stock markets respond differently across countries depending on their economic structure, but macroeconomic variables consistently show a strong relationship with asset pricing and investor sentiment.

**Mukherjee & Naka (1995)** examined the dynamic relationship between macroeconomic variables and the Japanese stock market using a vector error correction model. Their empirical findings showed that inflation, interest rates, and money supply significantly influence stock prices in the long run. The study highlights that macroeconomic indicators

maintain a stable and predictable relationship with stock market movements, emphasizing the importance of economic policy in stock market performance.

**Maysami et al. (2004)** investigated the relationship between selected macroeconomic variables and stock indices in Singapore. Their findings revealed that inflation, exchange rates, interest rates, and money supply had a long-term cointegrating relationship with stock performance, particularly in the financial and property sectors. This research indicates that macroeconomic fundamentals serve as reliable predictors of stock price behavior and are crucial in investment analysis and portfolio management strategies.

**Hussainey& Ngoc (2009)** analyzed how macroeconomic variables such as GDP growth, oil prices, exchange rates, and inflation affect Vietnamese stock prices. Using time-series econometric models, they found that these variables have a significant impact on the performance of banking and industrial stocks. Their findings suggest that understanding macroeconomic trends is essential for both investors and policymakers in developing and emerging markets like Vietnam.

### Research gap

Existing research has extensively examined the effect of macroeconomic variables on stock market indices, but limited attention has been given to individual banking stocks like the State Bank of India (SBI). Most studies focus on developed economies or broader market trends, often neglecting the specific context of emerging markets such as India. Additionally, there is a lack of recent empirical studies considering post-pandemic economic shifts, including changes in interest rates, inflation, and monetary policies. This study aims to fill the gap by analyzing the impact of selected macroeconomic indicators on SBI's share price using recent secondary data and statistical analysis.

### Objectives of the study

To examine the impact of select macroeconomic indicators on the share price of SBI Bank.

### Hypothesis

**H<sub>0</sub>:** There is no significant relationship between selected macroeconomic indicators and the share price of SBI Bank.

**H<sub>1</sub>:** The selected macroeconomic indicators collectively do not have a significant impact on the share price of SBI Bank.

### Research Design

This study adopts a quantitative and descriptive research design based on secondary data to analyze the impact of selected macroeconomic pointers on the share price of SBI Bank. Secondary data for macroeconomic variables and SBI's share price were collected from reliable sources such as the Reserve Bank of India (RBI), National Stock Exchange (NSE), and official government reports.

### Samples

The researcher employed a convenience sampling method for the study, covering the period from 2016 to 2025. The samples are IR (Interest Rate), IF (Inflation), MS (Money Supply), GP (Gold Price), and SBI (SBI Bank Share Price).

### Statistical tools

For the study statistical tools such as **descriptive statistics**, **correlation analysis**, and **multiple linear regression** and **diagnostic tests** were employed to assess both individual and collective impacts of the selected macroeconomic indicators on SBI's share price.

**Table No- 1**  
**Summary of Descriptive Statistics**

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
<b>IR</b>	10	4.00	6.75	5.6900	1.09793	-.943	.687	-1.108	1.334
<b>IF</b>	10	2.860	6.950	4.80150	1.245387	.050	.687	-.455	1.334
<b>MS</b>	10	116	272	184.60	52.466	.350	.687	-1.048	1.334
<b>GP</b>	10	27445.0	87550.0	50936.500	20575.7927	.621	.687	-.599	1.334
<b>SBI</b>	10	238.22	801.64	399.3490	194.46285	1.154	.687	.392	1.334
<b>Valid N</b>	10								

**Source: Authors Calculation Using SPSS**

The table-01 describes the descriptive statistics summary of the central tendency, dispersion, and distribution shape for the five variables: IR (Interest Rate), IF (Inflation), MS (Money Supply), GP (Gold Price), and SBI (SBI Bank Share Price), based on a sample size of 10 observations. The mean values indicate the average for each variable: IR (5.69), IF (4.80), MS (184.60), GP (50,936.5), and SBI share price (399.35). The standard deviation shows the variability in the data, with GP and SBI having the highest variation, indicating more fluctuation in gold prices and SBI share prices during the period.

In terms of skewness, IR (-0.943) and MS (0.350) show slight negative and positive skew respectively, while SBI (1.154) shows a more notable positive skew, indicating that the share price distribution is right-tailed. Kurtosis values are all below 3, suggesting that the distributions are platykurtic (flatter than a normal distribution), especially for IR (-1.108) and MS (-1.048), which have light tails and fewer outliers.

Overall, the data suggest that the variables have moderate variability and are approximately normally distributed, although there is some skewness present in SBI and IR. These descriptive insights help understand the nature and behavior of the variables before further statistical analysis.

### Hypothesis testing

- 1)  $H_0$ : There is no significant relationship between selected macroeconomic indicators and the share price of SBI Bank.

**Table No- 2**  
**Correlation Matrix**

Correlations						
		IR	IF	MS	GP	SBI
IR	Pearson Correlation	1	-.650*	-.057	.008	.232
	Sig. (2-tailed)		.042	.876	.982	.520
	N	10	10	10	10	10
IF	Pearson Correlation	-.650*	1	.129	.072	-.056
	Sig. (2-tailed)	.042		.723	.842	.878
	N	10	10	10	10	10
MS	Pearson Correlation	-.057	.129	1	.985**	.918**
	Sig. (2-tailed)	.876	.723		.000	.000
	N	10	10	10	10	10
GP	Pearson Correlation	.008	.072	.985**	1	.938**
	Sig. (2-tailed)	.982	.842	.000		.000
	N	10	10	10	10	10
SBI	Pearson Correlation	.232	-.056	.918**	.938**	1
	Sig. (2-tailed)	.520	.878	.000	.000	
	N	10	10	10	10	10

\*. Correlation is significant at the 0.05 level (2-tailed).  
\*\*. Correlation is significant at the 0.01 level (2-tailed).

Source: Authors Calculation Using SPSS

The table-02 explains the correlation analysis the relationships between key macroeconomic indicators—Interest Rate (IR), Inflation (IF), Money Supply (MS), and Gold Price (GP)—and the SBI Bank share price. The results show that **Money Supply and Gold Price** have a **very strong positive correlation** with SBI share price, with Pearson correlation coefficients of **0.918** and **0.938** respectively, both significant at the **0.01 level**. This implies that increases in money supply and gold prices are strongly associated with increases in SBI Bank's share price. Additionally, **Money Supply and Gold Price** are almost perfectly correlated with each other ( $r = 0.985$ ,  $p < 0.01$ ), suggesting a close relationship between these two variables. On the other hand, **Interest Rate and Inflation** show **weak or negative correlations** with the SBI share price, and their relationships are not statistically significant. Notably, Interest Rate and Inflation are moderately negatively correlated with each other ( $r = -0.650$ ,  $p < 0.05$ ), indicating that as one increases, the other tends to decrease. Overall, the data suggest that among the variables studied, **Money Supply and Gold Price are the most influential factors** related to the SBI share price, while Interest Rate and Inflation have minimal impact in this context.

**Hypothesis Testing:** The independent variables (MS, IR, GP, INF) do not significantly affect the SBI Bank share price.

**Table No- 4**  
**Multiple Regression Analysis on SBI Bank Share Price**

Dependent Variable: SBI Bank Share Price		
Constant	Coefficient	P-Value
	301.630	0.233
MS	2.693	0.664
IR	27.690	0.151
GP	0.007	0.443
INF	24.093	0.857
F-stat	17.509	
P-value	0.04	
R2	0.933	
Adj.R2	0.880	

Source: Authors calculation using SPSS

The table-03 shows the result of regression analysis aims to examine the influence of several macroeconomic variables—Money Supply (MS), Interest Rate (IR), Gold Price (GP), and Inflation (INF)—on the share price of SBI Bank. The overall model is statistically significant, as indicated by the F-statistic value of 17.509 and the associated p-value of 0.04, which is below the 0.05 threshold. This implies that, collectively, the independent variables have a meaningful impact on the SBI Bank share price. Furthermore, the coefficient of determination ( $R^2$ ) is 0.933, suggesting that approximately 93.3% of the variation in SBI's share price can be explained by the selected variables. The adjusted  $R^2$  of 0.880, which accounts for the number of predictors in the model, also indicates a strong explanatory power. However, when looking at individual variable significance, none of the predictors (MS, IR, GP, INF) show a statistically significant impact on the dependent variable, as all p-values are greater than 0.05. For instance, Interest Rate ( $p = 0.151$ ) and Money Supply ( $p = 0.664$ ) do not show individual significance. This suggests that while the model as a whole is effective in explaining share price movements, no single variable stands out as a significant predictor on its own within this dataset.

**Table No- 5**  
**Diagnostic Tests**

Tests	Dependent Variable SBI Share Price
Normality (Shapiro-Wilk)	<b>0.071</b>
Heteroskedasticity (Breusch-Pagan)	<b>0.281</b>
Autocorrelation (Durbin Watson)	<b>2.439</b>

**Source: Authors Calculation Using SPSS**

Table 05 indicates the regression model's validity is confirmed by the results of the diagnostic tests. The dependent variable (SBI), as indicated by the Shapiro-Wilk test p-value of 0.071, is normally distributed. Heteroskedasticity is not present, as indicated by the Breusch-Pagan test p-value of 0.281, which implies that the residuals' variance is constant. The residuals are roughly independent, and the model does not have significant autocorrelation problems, according to the Durbin-Watson value of 2.439, which shows a minor negative autocorrelation but is within an acceptable range.

### Conclusion

This study affirms that macroeconomic indicators—specifically Money Supply and Gold Price—exert significant collective influence on SBI's share price, despite individual statistical insignificance. The regression model reveals robust explanatory power ( $R^2 = 0.933$ ), indicating that the combined effect of selected variables explains a vast majority of stock price variation. Correlation analysis shows strong positive associations between MS and GP with SBI's performance, emphasizing their predictive value. Diagnostic tests validate the model's reliability, confirming normality, absence of heteroskedasticity, and minimal autocorrelation. By focusing on SBI—a major Indian public sector bank. The findings underscore the need for investors and policymakers in emerging markets to monitor macroeconomic trends closely to make informed decisions and enhance strategic financial planning.

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