Impact of Non-Financial Determinants on Indian Banking Stocks – An Empirical Analysis

ABSTRACT

Aims: This study aims at analysing the influence of some of the most important external factors (macro economic variables) on the stock prices particularly the banking stocks of India listed in stock exchanges of the country.

Sample design: multistage design

Place and Duration of Study: Public and private sector banks of India listed in stock exchanges of the country for a 12 year period i.e. 2006-07 to 2017-18.

Methodology: On the basis of market capitalisation the top performing five banks from each sector i.e. public and private are selected and the data on stock prices is collected from the annual reports for the period. The data of the explanatory variables is collected for the period from the reports of Central Statistics Office, financial journals etc.,

Results: The impact of the explanatory macroeconomic variables on the market prices of these banking stocks for the period is analysed with the help of suitable statistical techniques viz., Mean, Standarad Deviation, correlation, and Multiple Regression Analysis.

Conclusion: Some of the macroeconomic variables are influencing the stock prices of the banks.

Key words: GDP, Inflation, Industrial Production, FIIs, Oil prices, Market price

1. INTRODUCTION

The main non-financial determinants are the macroeconomic factors which will influence the stock prices in the market. It is very important for the investors both individual and institutional to consider the effect of these factors on the stock prices before making any investment decisions. For example the inflationary trends will have influence on the firms. Some firms may absorb the repercussions and some may not be in a position to control the repercussions. Similarly the oil prices will affect the markets because every firm uses fuel for some purpose or the other. The exchange rate will have a telling effect particularly on the import export industries. Likewise the effect of these macro economic factors has got a significant influence on the markets and stock prices of the firms. All these facts make it clear that there is a need for the investors to analyse the impact of these non-financial determinants on the stock prices of the firms.

Literature overview

Several research studies were conducted to study and analyse the impact and influence of different macro economic variables on the stock prices.

Narayana Rao K.V.S.S. & Bhole L.M (1990), in their study analysed that the equities provided a partial hedge against inflation. [1] Chakrabarthi R (2001), observed that in the pre-Asian crisis a positive impact was observed on the stock prices due to changes in the FIIs investments whereas in the post-Asian crisis the changes in FII investments was due to changes in the equity returns. [2]

Batra, Amita (2003), observed that there was no destabilising impact from the changing behaviour of FIIs with regard to their investments in India. [3] Taulbee N (2005), studied the effect of some macroeconomic variables and their relationship with the MPS and concluded that unemployment levels and inflationary pressures had not exercised any influence on share prices, whereas GDP has shown considerable influence on MPS. [4] Chandrasekhar S & Pal Parthaprathim (2006), in the post election scenario, the holding patterns of different sensex based companies were affected by withdrawal of foreign portfolio capital. [5] Al Tamimi (2007), in his study on UAE markets concluded that besides fundamental factors influencing the stocks some external factors' influence (GDP, OIL prices, CPI etc) can also be seen. [6] Jaskiran Arora & Ravinder Vinayek (2007) in their study revealed that the FIIs are contributing to major stock trading and there is a need for the retail investors to take an active participation in trading so as to avoid potential danger in case of withdrawal of funds by FIIs at any point of time in future. [7] Anokye .A & Tweneboah. G (2008) in their study of stocks in Ghana stock exchange, observed that the exchange rate has long run influence on the stock prices , whereas other macro economic factors viz., inflation, FDI and interest rates are found to be key determinants of the prices of selected stocks in the exchange. [8] Sunde. T and Sanderson (2009), in their study on factors affecting stock prices in Zimbabwe stock exchange, concluded that besides fundamental factors some economic factors viz., management, lawsuits, acquisitions and mergers, takeovers, liquidity in the market, availability of substitutes, Government policy, sentiments of the investors, opinion of the analysts are showing impact on the stock prices.[9] Somoye R.O.C., Akintoye, I.R. & Oseni, J.E., studied stock price movements in Nigerian stock exchange and found that besides EPS, some macro economic variables viz., Exchange Rate, GDP and internal lending rates, are influencing stock prices. [10] Ghosh. A, Roy. S, Bandopadhyay G, & Choudhary K (2010) studied the impact some macroeconomic variables viz., Oil prices, Gold Prices, CRR of Banks, Food price Inflation, Call Money rates, Dollar price, FDI, Foreign portfolio investment and Forex reserves, on the selected stock prices listed in BSE. [11] The Hindu Business Line, Wednesday, March 3, 2010, published a news item that the SENSEX jumps to a 2 month high due to FII trading. [12] Bitok. J, Kiplanghat. A., Tenai. J, & Rono.L (2011) observed the significant influence of investor psychology on stock price movements. [13] Khan M.N. and Amanullaha (2012), studied the influence of company specific internal factors on stock prices along with some external factors and concluded that GDP has got high influence on the prices of stocks listed in Karachi stock exchange. [14] Rahul Dhiman (2012) observed that besides FIIs investments there are several other economic variables viz., budgets, government policies etc., and exerting high degree of influence on stock prices. [15] Gideon Boako, Maurice Omane & Adjepong Joseph Magnus Frimpong (2015) observed that there is a very good association between stock prices and exchange rates. [16] S. Sundaram, Dr. M. Rajesh (2016) observed high degree of relationship between prices of stocks listed in BSE and external factors inflation and industrial production. [17] Vishruthi Gupta and Pooja Sharma (2018) studied the influence of macroeconomic variables in the 2008 crisis period and observed that oil prices exerted positive influence on the prices of selected stocks. [18]

This study takes into account some of the most important macro economic variables and attempts to analyse their impact on the banking stocks listed in Indian stock exchanges for the period 2006-07 to 2017-18.

Objectives of the study

The main aim of the study is to analyse the relationship between stock prices of the top performing public and private sector banks of India and external non-financial variables (macroeconomic) viz., GDP, Inflation, Industrial production, exchange rate, crude oil prices, FIIs investments in stock markets and interest rates, for the period of 2006-07 to 2017-18.

2. METHODOLOGY

2.1 Sample size

Top performing 5 banks each from the private and public sector banks of the country will constitute the sample. The names of the selected banks are as follows

Selected Banks

Sector	Name of the Bank
PUBLIC	1. State Bank of India
	2.Bank of Baroda
	3.Punjab National Bank
	4.Canara Bank
	5. Bank of India
PRIVATE	1.HDFC Bank
	2. ICICI Bank
	3. Axis Bank
	4. Indusind Bank
	5. Yes Bank

2.2 Statistical tools:

Statistical tools viz., Mean, Standard Deviation, Co-efficient of Correlation and linear Multiple regression analysis are used.

2.3 Hypotheses

The following hypotheses are formulated for testing in the present study.

H_1**:** There is a positive relationship between GDP and MPS
H_2**:** There is a negative relationship between INF and MPS
H_3: There is a negative relationship between IP and MPS
H_4: There is a positive relationship between ER and MPS
H_5: There is a positive relationship between OIL and MPS
$H_{6:}$ There is a positive relationship between FII investments and MPS
$H_{7:}$ There is a negative relationship between rate of interest and MPS

Hypotheses will be tested based on Pearson's Correlation analysis and Regression analysis

Table No. 2.1 Coefficient of Correlation between MPS and, GDP, INF, IP and ER

Variables	MPS	GDP	INF	IP	ER
MPS	1.00	-0.27	-0.40	-0.50	0.85*
GDP	-0.27	1.00	--	--	--
INF	-0.40	--	1.00	--	--
IP	-0.50	--	--	1.00	--
ER	0.85*	--	--	--	1.00

Source: Calculations
* significant at 5% level

Regression Model: $MPS = a_0 + b_1 GDP + b_2 INF + b_3 IP + b_4 ER + e$

Table No. 2.2 ANOVA Model Summary & Co-efficient for Each Variable (GDP, INF, IP, and ER) with dependent Variable (MPS).

Model	Unstandardised coefficients		Standardised coefficients	t	Sign
	B	Std. Error	Beta		
Constant	-2051.231	1002.706		-2.045	0.081
GDP	54.673	85.111	0.183	0.641	0.540
INF	11.981	32.066	0.081	0.373	0.721
IP	17.98	57.491	0.108	0.313	0.762
ER	46.311	11.006	1.085	4.206	0.003
R-Square value	0.806				
F - value	7.351				
F -Sig	0.013				

Source: Calculations

Table No. 2.3 Coefficient of Correlation between MPS and, OIL, FII and Interest rates

Variables	MPS	OIL Prices (US $ per barrel)	FII	Interest rates
MPS	1.00	-0.38	0.22	0.69
OIL Prices (US $ per barrel)	-0.38	1.00	--	--
FII	0.22	--	1.00	--
Interest rates	0.69*	--	--	1.00

Source: Calculations * significant at 5% level

Regression Model: $MPS = a_0 + b_1\, OIL + b_2\, FII + b_3\, INT + e$

Table No. 2.4 ANOVA Model, Summary & Co-efficient for Each Variable (OIL, FII, and INT) with dependent Variable (MPS).

Model	Unstandardised coefficients		Standardised coefficients	t	Sign
	B	Std. Error	Beta		
Constant	20.199	543.19		0.037	0.971
OIL (US $ per barrel)	-6.194	3.444	-0.385	-1.798	0.110
FII	0.001	0.001	0.207	0.963	0.364
Interest	186.973	60.873	0.653	3.072	0.015
R-Square value	0.645				
F - value	4.85				
F -Sig	0.033				

3. RESULTS AND DISCUSSION

From Table No. 2.1, Exchange rate has got high degree of significant positive relationship with the dependent variable MPS. All other variables viz., GDP, Inflation, Industrial production and Exchange rate are showing insignificant negative correlation with the MPS of the banking stocks during the study period.

From Table No. 2.2, it can be analysed that $R^2 = 0.806$ i.e. 80.6 per cent of variation is explained by the model and the remaining variation is due to factors not included in the model. Since the F – value is significantly low the model is valid and the explanatory variables have the power to influence the explained variable.

The t-value of GDP is not significant and the hypothesis H_1 (There is a positive relationship between GDP and MPS) is rejected.

The t-value of INF (inflation) is not significant and the hypothesis H_2 (There is a negative relationship between INF and MPS) is rejected

Since the t-value of IP is not significant the hypothesis H_3 (There is a negative relationship between IP and MPS) is rejected.

The t-value of exchange rate is significant and the hypothesis H_4 (There is a positive relationship between ER and MPS) is accepted.

From Table No. 2.3, it can be analyzed that the explanatory variable ‘oil prices’ has a negative relationship with the MPS of the selected banking stocks. This relationship is not significant.

The explanatory variable FII has got positive relationship with the MPS of the banking stock prices. This relationship is also not significant.

The explanatory variable interest rate has shown a positive relationship with the MPS of the banking stocks. This relationship is significant.

From Table No. 2.4, it is observed that $R^2 = 0.645$. It means the model explains that 64.5% of the variation in the dependent variable is due to systematic variation and the remaining variation is due to factors not covered by the model.

The Fishers ratio (F-statistic) stands as a proof for the validity of the model estimated. F value which is 4.85 with the *P*-value of 0.033 (which is less than 0.05) points to the stark reality that the explanatory variables are associated with the dependent variable.

The variable OIL is negatively associated with the dependent variable MPS of the banking stocks. Since the t-value of OIL is not significant, the hypothesis i.e. H_5 **(**There is a positive relationship between OIL and MPS) is rejected.

For 1% variation in FII there will be a corresponding 20.7% positive variation in the MPS of the banking stocks. Since the t-value is not significant, the hypothesis, H_6 (There is a positive relationship between FII and MPS) is rejected.

For 1% variation in the explanatory variable 'interest rate' there will be a corresponding 65.3% positive variation in the MPS of the banking stocks. Since the t-value of Interest rate is significant, the hypothesis i.e. H_7 **(**There is a negative relationship between Interest rate and MPS) is accepted.

4. CONCLUSION

Out of the seven external variables (viz., GDP, inflation, industrial production, exchange rate, oil prices, FIIs investments and interest rates) considered in this study only two variables i.e. industrial production and exchange rate have significant positive impact on the stock prices of banking stocks both public and private during the study period 2006-07 to 2017-18, whereas the variable interest rate is showing negative significant influence on the stock prices during the study period.

Competing interests

There are no competing interests exist.

All authors read and approved the final manuscript.

CONSENT (WHERE EVER APPLICABLE)

Since this paper is based on the secondary data no consent is required

ETHICAL APPROVAL (WHERE EVER APPLICABLE)

not applicable

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ABBREVIATIONS

MPS: Market Price of the Share

GDP: Gross Domestic Product

INF: Inflation

IP: Industrial Production

OIL: Crude oil prices

FII: Foreign institutional investors

Int.: Interest Rates