Share Market Analysis Using Various Economical Determinants to Predict Decision of Investors

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Abstract. The following paper tries to develop six major hypotheses in Bombay Stock Exchange (BSE) in India. The paper tries to proof the hypothesis by collecting data from the fields on six sectors: oil prices, gold price, Cash Reserve Ratio, food price inflation, call money rate and Dollar price. The research uses these data as indicators to identify relationship and level of influence on Share prices of Bombay Stock Exchange by rejecting and accepting the null hypothesis.

Key words: Share market, Predict, Decision, Bombay stock exchange, Regression analysis, Correlation analysis, Path analysis, Economical determinants.

INTRODUCTION

Stock market is one of the main economical sectors of India; whose economy is currently progressing rapidly due to the economical boost on South Asian region. Due to low labor cost and skillful manpower sectors like textile, garments, manufacturing, banking and insurance has made a significant contribution to foster the growth potentials of the economy. The Structural Adjustment Program adopted in 1991 had focused on stabilization and structural reforms in this respect the changeover from inward orientation to outward strategies has generated euphoria in the stock market. Hence the "opening "up of the economy has been successful in spreading its tentacles over the economy. There are several factors which are directly or indirectly related to stock prices. Here while observing stock market behavior we have taken into consideration Bombay Stock Exchange Sensitive Index(BSE) in our database.

In this research on BSE, we have tried to find out which factors are affecting most to change the price of share prices. To find out those factors, we have done a market analysis by investigating various economical sectors of our country which are directly or indirectly related to share business.

After market analysis, we have chosen six factors in primary level to find out whether they have an effect on BSE Sensex: dollar price , oil price, food price inflation, call money rate,

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gold price and cash reserve ratio. The paper is divided into two sections. In section one an attempt has been made to discuss the scope, the importance of selecting the determinants affecting the stock market. In section two the methodology has been applied to examine the significance of those determinants.

SCOPE AND OBJECTIVE

It is a well known fact that Dollar price or money exchange rate has a great influence on changes of share price. Our research identifies the level of influence of dollar price on share prices. The oil price of India is dependent on International Oil market. Any developing economy like India is dependent on Oil price, so we tried to find out if oil price influences the BSE. If the interest rate is high then people may want to deposit their money in bank rather than to invest in share market which involves fair amount of risks. The strength and stability of the host country's currency measured by the level and volatility of call money rates. Domestic currency depreciation makes local firms more competitive, leading to an increase in their exports. This in turn raises their stock prices. Gold price is included in the model as an additional variable, to examine whether gold price contain any additional significant relation with share price movements. Since gold has an asset value it works as an important savings material.

LITERATURE REVIEW

In the past decades, many researchers attempted to use different methods in order to predict decision regarding share markets. Here we have described some previous research works related to our analysis sectors and tried to find out their limitations to improve the analysis process better then before.

Firstly we reviewed on those papers/ articles where relation between stock prices and call money rate were analysed. One attempt at estimating such relationship for use in simulating monetary effects within a macroeconomic model is described in the research of Robert H. Rasche and Harold T. Shapiro(1968). A fuller discussion of this common stock valuation formula can be found in Burton G. Malkeil (1963), Martin Feldstein (1980) discussed a crucial cause of the failure of share prices to rise during a decade of substantial inflation. The analysis here indicates that this inverse relation between higher inflation and lower share prices during the past decade was not due to chance or to other unrelated economic events. One of the analyses by Franco Modigliani and Richard Cohn (1979) also shows that it is unnecessary to invoke a theory of systematic error of the type.

To improve the analysis of checking the relationship between share price and call money rate, We have done our analysis using some more dynamic model like correlation analysis, regression analysis, factor analysis, path analysis etc.The lacking of Martin Feldstein (1980) analysis was, a complete analysis of the effect of inflation on share prices requires considering a wider range of alternative investments and incorporating the possibility that perceived risk varies with inflation which was absent here. So we tried to consider a big range of alternative investments on monthly basis data to make the analysis more efficient.

The Global Economic slow down had a recessionary impact on the financial Market leading to decline in share prices and indices. In the recovery phase the economy has adopted expansionary fiscal policy to accelerate aggregate demand. In this respect RBI has adopted a

contractionary monetary policy overcome the crisis which led to higher interest rate on bank deposits. Then we have tried to review on those papers/ articles which have done analysis to check whether stock prices and oil price are related to each other or not.

RESEARCH MODEL

In this paper we have considered a Multiple-Regression model to examine the impact of certain factors that affect BSE Sensex such as oil prices, food price inflation, gold price, Cash Reserve Ratio , call money rate and Dollar price.

After that we have collected each sector's three years database on monthly basis from specific sources. There are some holidays which didn't match in both share market & bank or exchange office. So we had to take previous working day's closing price as those days share price.

On the contrary, we have divided our analysis process into several ways. At first we have done the analysis on all the 29 BSE companies for which data is available for last 3years.After that we have done our research on the basis of whole BSE to find out some useful hypothesis which is related to share price.

BACKGROUND OF EMPIRICAL STUDIES

Generally the efficient market hypothesis states that markets are efficient if prices fully reflect all available factors. Our analysis was based on some strong statistical methods like correlation analysis, regression analysis.

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EMPIRICAL STUDIES AND RESULTS

Data

The sample includes data of BSE share price, dollar price, oil price, gold price, call money rate and bank deposit interest on monthly basis for the period from 2006 to 2009.We collected secondary data of all the sectors. There are some holidays which didn't match in both share market & bank or exchange office. So we had to take previous day's closing price as those days share price. To verify accurate gold price, we had to convert international price rate (which was in dollar) into IRS.

Hypothesis

We have developed some null hypothesis on the basis of our data and analysis process and our study seeks evidence whether these hypothesis are accepted or rejected.

Hypothesis 1: Share price does not depend on Dollar price

Hypothesis 2: Share price does not depend on Oil price.

Hypothesis 3: Share price does not depend on Food price inflation.

Hypothesis 4: Share price does not depend on Gold price.

Hypothesis 5: Share price does not depend on Call money rate.

Hypothesis 6: Share price does not depend on CRR.

Empirical results and discussions

The empirical results are presented here in the different subsections.

Correlation analysis

Here we used Pearson correlation analysis. It assumes that the two variables are measured on at least interval scales, and it determines the extent to which values of the two variables are "proportional" to each other.

TABLE 1. Correlation analysis of different determinants in comparison to BSE Sensex. **Correlations**	
Pearson Correlation Method	
Share Price	1.000
Dollar Price	-0.705820539
Oil Price	0.530762551
Food Price Inflation	-0.032220835
Gold Price	0.213896051
Call Money Rate	0.199697234
CRR	0.38248643

Regression analysis

We have done the regression analysis to justify the relation's strength or weakness like as we found that there is a significant relation between BSE Sensex and other specific factors but we don't know how strong the relationship are. So by this analysis we have tried to figure it out.

Overall Analysis Table Regarding The Impact On Bse Sensex

TABLE 7.

	Pearson correlation (r)	**R square**	**F**
Dollar price	-0.705820539	.498182633	36.73200374
Oil price	0.530762551	.281708886	14.51114816
Food Price Inflation	-0.032220835	.001038182	0.038452664
Gold price	0.213896051	.045751521	1.773967994
Call Money Rate	0.199697234	.039878985	1.536808837
CRR	0.38248643	.146295869	6.34054315

Here we used correlation analysis to check If there is any relationship exists between BSE Sensex and other factors. After that we have done regression analysis to analyze how strong or weak the relationship is.

Hypothesis 1: BSE Sensex does not depend on dollar price.
Conclusion: Hypothesis is rejected. ($F = 36.73200374$, $F_{37,37} = 2.2$)

From the analysis it is observed that BSE Sensex has a highly significant dependence on dollar price. If dollar price increases, BSE Sensex decreases significantly (r = -0.705820539). Around 0.498182633% of the variation of BSE Sensex is due to variation of dollar price. (R square change = 0.498182633). Here the value of un standardized coefficients B is -513.4026763. It means for 1 unit of dollar price change, BSE Sensex decreases -513.4026763units.

Hypothesis 2 BSE Sensex does not depend on oil price.

Conclusion: Hypothesis is rejected. (F = 14.5114816, $F_{37,37}$ = 2.20)

It is observed that BSE Sensex is significantly dependant on oil price. If oil price increases, BSE Sensex increases moderately (r =0.530762551). Around .281708886% of the variation of BSE Sensex is due to variation of oil price. (R square change =.281708886) .

Hypothesis 3: BSE Sensex does not depend on Food Price Inflation .

Conclusion: Hypothesis is accepted. (F =.038452664, F Table value at 37 degrees of freedom = 2.20)

It is observed that BSE Sensex does not depend on Food Price Inflation. If Food Price Inflation increases, BSE Sensex decreases insignificantly (r = - 0.033). Around .001038182% of the variation of share price is due to variation of Food Price Inflation . (R square change =.001038182).

Hypothesis 4: BSE Sensex does not depend on gold price.

Conclusion: Hypothesis is rejected. (F =1.773967994, $F_{37,37}$ = 2.20)

It is observed that BSE Sensex does not depend on gold price. If gold price increases, BSE Sensex increases marginally (r = 0.213896051). Around .045751521% of the variation of BSE Sensex is due to variation of gold price. (R square change = 0.045751521).

Hypothesis 5: BSE Sensex does **not depend on call money rate.**

Conclusion: Hypothesis is accepted. (F = 1.536808837, F Table value at 37 degrees of freedom = 2.20)

It is observed that BSE Sensex does not depend on call money rate. If call money rate increases, BSE Sensex increase negligibly (r = 0.199697234). Around .039878985% of the variation of share price is due to variation of call money rate. (R square change =.039878985).

Hypothesis 6: Share price does not depend on CRR.

Conclusion: Hypothesis is rejected. ($F = 6.340542315$, $F_{37,37} = 2.20$)

It is observed that BSE Sensex is significantly dependent on CRR. If CRR increases, BSE Sensex increases very marginally ($r = 0.38248643$). Around .04126295869% of the variation of BSE Sensex is due to variation of CRR. (R square change =.04126295869).

CONCLUSION

In our research, we have tried our best to find out the relationship between BSE Sensex and some other important economical factors and got some interesting results related to this. We have used statistical methods to do the analysis based on monthly basis database of different economical and social sectors. Finally we got some relationships of those factors with BSE Sensex changing. In our analysis we found that dollar price is the mostly effected factor which is responsible for changes of BSE Sensex. Here we saw that dollar price and BSE Sensex have a negative relationship that means if dollar price or exchange rate decreases, BSE Sensex increases at that time. Factors like oil price affects BSE Sensex moderately. If Oil price increases, BSE Sensex increases If oil price increases, BSE Sensex increases moderately. Some other factors like gold price, CRR does not have a linear relationship with BSE Sensex. It means if gold price or fixed deposit interest increases, BSE Sensex will not get affected significantly. We also checked whether Call Money Rate and BSE Sensex has any relation, but we saw a significant relationship between them. There was another economical factor in our analysis which is Food Price Inflation, and we found a non significant negative relationship between Food Price Inflation and BSE Sensex.

Several other factors like FDI, Government Policies and social variables affects fluctuations in BSE Sensex which can be analyzed statistically for further research. Due to the constraint on data base we have not considered the impact of political factors along with economic policies on BSE Sensex. Here we have analyzed Linear estimated relationship between dependent and independent variables but they can have a nonlinear dimension this creates the scope of further research.

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