Research Paper   **Management**

Non-Financial Determinants of Stock Market Prices – An Empirical Analyis

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ABSTRACT

Indian economy is a emerging economy. Such market are generally live under inflationary pressure. Such markets see typical trend-reversals in stock market. Even minor changes in interest rate has noticeable effects on share market. Understanding external factors affecting share market acts as a tool that investors must use to time the market. Predicting share price movements is hard even for pro investors. There are complex interrelated external factors affecting share market price. Investors must be aware of the external factors that affects share market. These factors interact deeply with the market. As a result, market tend to under-perform or over-perform. Hence in the present study an attempt is made to find out the relationship between Market Price of share and economic variables.

Introduction

Under non-financial determinants the macro economic factors are taken for the study. The macro economic factors are external to the company and affect all the listed companies in the market uniquely. It is important for investors to know about external factors affecting share market movements. Even small changes in price of crude oil effects common mans pocket. Increase in crude price does not only make us pay more for fuel but it has much wider impact. Almost all types of industry uses fuel in some form or the other. Increase in oil prices directly increases the cost of production of its products. This rise in cost of products is what's should worry us. The factor of worry is, the price rise can have two repercussions. The price rise can either be absorbed by the company, or it will be fully/partly passed on to the consumer. In both the case shareholders will be at loss. If company absorbs the rising cost, it leads to less profit. If price is passed on to consumer it will lead to higher inflation. Gold price also has lot of affect on share market prices. Share market and gold price is inversely related (generally). When share market is performing badly gold prices soaring towards sky. Not only on share market, gold effects anything which deals in paper currency. When people are buying gold they forget everything else, even share market. Gold price also directly influence on jewellery market in India and middle east. Volatility in commodity market affects share market prices. Commodities that use on daily basis (like edible oil, crude oil, metals, grains, basic foods etc) have almost direct relation with share market price reversals. If price of essential commodities increase consistently in decreases investors sentiments and leads to inflationary pressures. In order to control inflation, governments increase bank interest rates. With increased interest rates (both on deposits and lending rates), borrowing becomes costlier. Industrial sector greatly depend on bank loans to manage their cash flows. With interest rates high, surely their operating margin will fall. It means companies operating performance will go down. Immediately this will affect share price of company.

Fig: Factors Affecting Share Market is represented in the below diagram:

Share market theory basically became practical after paper currency became a legal tender for the whole world. But what happens when paper currency start getting devalued? The answer is simple, people try to move away from paper currency. Investors flee stocks market or for that instant anything which deals in paper currency. In such a situation people start parking their wealth in gold, silver, real estate, other hard assets (instead of paper currency). As paper currency is getting devalued people would like to hoard gold (which appreciates with time) instead of keeping paper currency in their savings account. This kind of investors-pessimism has severe impact on performance of share market. It was due to lack of faith of investors in paper currency that gold price touched its peak. The lack of trust in paper currency was so big that even big central banks of China and USA was hoarding gold like mad. Generally affecting factors are Gross Domestic Product, Inflation, Consumer Price Index, employment, Income levels, Industrial Production, Monsoons, Agriculture, Interest rates exchange rates, Purchasing Power Parity, Crude oil Prices, etc., We formulated five hypotheses based on the relationship between the five macro economic factors and Market Price of Share and applied multiple regression models to measure the strength of these relationships.

Review of Literature

The most comprehensive research into the linkage of stock prices and macroeconomic factors was conducted by Muradoglu, Taskin, and Bigan (2000), Diacogiannis, Tsiritakis, and Manolas (2001), and Wongbangpo and Sharma (2002), and Mukhopadhyay and Sarkar (2003). Muradoglu et al. investigated possible causality between 19 emerging market returns and exchange rates, interest rates, inflation, and industrial production from 1976 to 1997. Their results revealed that the relationship between stock returns and macroeconomic variables were mainly due to the relative size of the respective stock market and their integration with world markets. In their study of the Greek stock market between 1980 and 1992 and its relationship to 18 macroeconomic variables, Diacogiannis et al. found significant high loadings between stock returns and 13 of the 19 macroeconomic variables for both periods, 1980-1986 and 1986-1992. Wongbangpo and Sharma explored the relationship between the stock returns for the ASEAN-5 countries of Indonesia, Malaysia, the Philippines, Singapore, and Thailand and five macroeconomic variables. By observing both short and long run relationships between respective stock indexes and the macroeconomic variables of gross national product (GNP), the consumer price index (CPI), the money supply, the interest rate,

and exchange rate they found that in the long-run all five stock price indexes were positively related to growth in output and negatively to the aggregate price level. But a negative long-run relationship between stock prices and interest rates was noted for the Philippines, Singapore, and Thailand, and was found to be positive for Indonesia and Malaysia. In the end, causality tests detected an overall relationship between macroeconomic variables and stock prices for all five ASEAN equity markets. Lastly, Mukhopadhyay and Sarkar conducted a systematic analysis of the Indian stock market returns prior to and after market liberalization and the influence of macroeconomic factors on returns. Specifically for the post-liberalization period (since 1995), real economic activity, inflation, money supply growth, FDI, and the NASDAQ-index were significant in explaining variations in Indian stock return. Nominal exchange rate, while significant during the pre-liberalization period (1989-1995), was found to not be significant after liberalization.

Objectives
The main aim of the study is to study the relationship between stock prices and external factors based on the availability of the data such as Growth Rate of Gross Domestic Product(GDP), Consumer Price Index(Inflation),Industrial Production(IP),Crude Oil Prices(OIL) and exchange rates(ER) for the period of 2003-04 to 2012-13.

Sample size:
Selection of sampling has done in three stages using Multi-stage sampling method. Firstly, top performing listed companies with respect to market capitalization in the Bombay Stock Exchange are identified from different sectors. Secondly, four industries namely Agri-chemicals, Cement, Hotel and Steel industries are selected. Thirdly, while selecting sample of companies from selected four industries a company has been regarded as eligible for selecting as a sample if it satisfies the following conditions:

*   It is listed in Bombay Stock Exchange
*   The necessary financial data required for calculating the measures of dependent and independent variables pertaining to all the years 2003-04 to 2012-13 is available.
*   Only those companies whose price data is available.

Table 2.1: List of Sample companies

Name of the sector	Number of companies
Agri-Chemicals	5
Cement	5
Hotel	5
Steel	5
Total	20

Analysis
To analyse the relationship between the Market Price of Share and Macro economic factors during the period of study hypothesis will be framed as follows

H_9: There is a positive relationship between GDP and MPS

H_{10}: There is a negative relationship between INF and MPS

H_{11}: There is a negative relationship between IP and MPS

H_{12}: There is a positive relationship between ER and MPS

H_{13}: There is a positive relationship between OIL and MPS

Hypotheses will be tested based on Regression analysis

Regression Analysis
Regression Model: $MPS = a_0 + b_9\ GDP + b_{10}\ INF + b_{11}\ IP + b_{12}ER + b_{13}OIL + e$

Table 1: Calculation of Anova, Model Summary & Co-efficient for Each Variable (GDP,INF,IP,ER and OIL) with dependant Variable (MPS).

Model B	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Std. Error	Beta			
(Constant)	1527.943	1356.150		1.127	.323
GDP	147.539	128.454	.406	1.149	.315
INF	307.121	154.697	-1.663	1.985	.008
IP	-453.193	167.583	1.261	-2.704	.050
ER	-8.301	5.484	-1.280	-1.514	.205
OIL	14.399	24.435	.185	.589	.587
R-Square value	0.704				
F-Value	1.904				
F-Sig	0.046				
a. Dependent Variable: MPS					

Interpretation
Regression was used to find the coefficients and Analysis of variance (ANOVA) was used in testing the hypotheses and to measure the differences and similarities between the sample companies according to their different characteristics. From the above table 1, it is found that the R-Square which is called as coefficient of determination of the variables is 0.704. The R-Square which is also a measure of the overall fitness of the model indicates that the model is capable of explaining about 70.4% of the variability of the share prices of selected companies. This means that the model explains about 70.4% of the systematic variation in the dependent variable. That is, about 19.6% of the variations in MPS of the sampled companies are accounted by other factors not captured by the model.

Similarly, findings from the Fishers ratio (i.e. the F-Statistics which is a proof of the validity of the estimated model) as reflected in Table 1, indicates that, the F is about 1.904 and a p-value that is less than to 0.05 (P-value =0.046), this invariably suggests clearly that simultaneously the explanatory variables are significantly associated with the dependent variable. That is, they strongly determine the behavior of the market values of share prices.

However, further empirical findings provided in Table 1,shows that there is a significant negative relationship between INF and the MPS of the listed selected companies in Bombay Stock Exchange. This is evident in the t-statistics value of 1.985 with a P-Value of 0.008 which is significant at 5% level of significance. From this it is evident that the INF have a significant negative impact on the MPS. Hence we accept H_{10}.

Finally, other variables GDP, IP, ER and OIL have insignificant impact on MPS. Hence we do not accept H_9, H_{11}, H_{12} and H_{13}.

Conclusion
Out of the so many number of external factors based on the availability of the data, Growth Rate of Gross Domestic Product(GDP), Consumer Price Index(Inflation),Industrial Production(IP),Crude Oil Prices(OIL) and exchange rates(ER) are included in the study and examine the external factors responsible for affecting the company's performance listed at Bombay Stock Exchange in India. From the study it is observed that during the study period, the Market Price of the select company shares are affected by Inflation and Industrial Production the other variables like GDP, Crude oil prices, and Exchange rates are having insignificant relationship.

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