



Economic factors and share price analysis – a case study of Sun Pharma, Maruthi Suzuki, Axis Bank and ONGC in India

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Abstract

The macro economic factors are uncontrollable, unavoidable and non-diversifiable factors that affect entire market returns either positively and negatively. The measuring the impact of economic factors on the share price is very dynamic and need of the hour in domain of finance and investment. Therefore, present study analyzed the impact of economic factors GDP growth, inflation, FII, exchange rate, IIP growth and crude oil prices on share price behaviour of selected companies Sun pharma, Axis bank, Maruthi Suzuki and ONGC for the period of 2016-2025. The study adopted panel data analysis and endeavoured to find out model fit. The model supported Fixed Effect Model over the Random Effect Model by a significant Chi-Square value of 14.27 ($p = 0.027$) and rejects the Random Effect specification. The results suggest that the recommended Fixed Effect Model demonstrates Foreign Institutional Investment (FII) and Crude Oil Price as major predictors of share prices, but GDP Growth, Inflation, Exchange Rate and IIP Growth are not significant determinants.

Keywords: Panel data, economic factors, share price behaviour & stock market

Introduction

Economic considerations are one of the most important predictors of share price behavior since they affect the general economic climate, corporate earnings, investor expectations and market sentiment. The stock market is not an isolated entity and is very susceptible to changes in macroeconomic conditions that affect the profitability and growth potential of enterprises. GDP growth, inflation, currency rates, foreign institutional investment (FII), industrial production, and crude oil prices are some of the factors that have a direct or indirect impact on the stock market. Strong economic growth usually means more company activity, more consumers spending and enhanced corporate profitability and these tend to boost investor confidence and lift share prices. On the other hand, economic recessions may lower profits of businesses and drag market results down. Another major economic element that impacts stock prices is inflation. But prolonged high inflation may also drive up the cost of manufacturing, lower consumers' buying power and generate financial market instability. Moderate inflation is frequently connected with economic growth. Similarly, the impact of exchange rate movements on enterprises depends on their degree of exposure to foreign trade. While currency depreciation may be good for export-oriented organizations, it may increase operational expenses for import-dependent firms. Thus, changes in the exchange rate might affect investors' expectations and stock valuation. The Index of Industrial Production (IIP) is a measure of the level of industrial activity in an economy and is therefore an indicator of economic strength and business performance. Higher industrial production is often an indication of a strong economy and more opportunities for companies to thrive. This in turn helps to lift stock market performance. Foreign Institutional Investment (FII) plays a crucial role in rising economies such as India. Foreign investors are critical to

market liquidity and capital development and their investment selections often impact market trends. Higher FII inflows are usually an indication of confidence in the country's economic prospects and can create a positive trend in stock prices. By contrast, large-scale withdrawal of foreign capital can lead to market volatility and downward pressure on share prices. Profitability, transport costs, production costs and inflationary pressures are also affected by crude oil prices. Crude oil is an important input to a number of businesses and as such changes in oil prices can have broad ranging implications on economic activity and on the performance of the stock market.

Hence, the relationship between the economic considerations and the share price behavior has been a matter of great interest for the researchers, investors and the policy makers. The knowledge of the effect of macroeconomic variables on stock prices is important for making informed investment decisions, devising successful financial strategies and formulating economic policies. The study of these linkages gives useful information on the extent to which external economic conditions influence market value and assists in identifying the primary determinants of share price fluctuations. Thus, analyzing the effect of economic factors on Market Price per Share (MPS) helps to better understand the dynamics of the stock market and enables more effective investment and policy decisions.

Review of Literature

Harish Kumar (2025) ^[1] studied the correlation between revenue, share price, profitability, operational efficiency, sector classification, macro-economic conditions and regional market using Manova and Partial testing methodologies. The study revealed high relationship between share price and business performance with inflation, interest rates and geopolitical factors having considerable impact. Mr. Karthikeyan (2016) ^[3] has

analyzed the share price behaviour of DLF, Oberoi, prestige, NCC limited and Ashoka buildon listed on NSE using trend analysis and simple moving average techniques. The approaches were used in the study to determine the purchasing and selling signals of the selected firms. The study concludes that the approaches chosen are good predictors of the behaviour of share prices in the construction business in India. Priyanka Das (2020) ^[4] used panel data analysis to examine the correlation of EPS, P/E ratio and dividend yield with share price of infrastructure ventures in India. Results of the analysis demonstrated a strong correlation between EPS and share price behaviour. The hausman test supported the use of random effect model over fixed effect model in share price behavior. Henry Egbezien Inegbedion (2012) ^[5] found a strong negative association between exchange rates and share price behaviour in the Nigerian stock markets while interest rates had the same effect but insignificant. The study also showed that inflation rate has positive relationship with share prices in Nigeria Fatima Ruhani *et al.* (2018) ^[6] evaluated the share price responsiveness to financial market variables using information from Bangladesh markets.

The study found that P/E ratio has considerable negative impact on share price behaviour. Darlington Osaremwinda Ogbeide & Osazee Frank Ogieva (2017) ^[7] investigated the association between some economic and political concerns and share price in Nigeria during 1985-2016. The research employed the a-Augmented Dickey-Fuller unit root and Johansen co-integration test. Short run effect analysis using Error Correction Model The study also used multivariate ordinary least square to investigate long term impact. The study found different outcome in short run but in long run all variables (excluding exchange rates and political instability) have positive effect on share price. Nisa M. (2012) also emphasizes the share prices and the correlation of these factors with the share prices of Karachi Stock Exchange (KSE) 100 index of Pakistan. The study used five quantitative indicators such as Book to Market (B/M) ratio, Price Earning (P/E) ratio, Dividend, Gross Domestic Product (GDP) and Interest Rate to determine the degree and direction of link. There were sectorial differences in the effect of interest rates and inflation on share price behaviour. According to the study of Joana Macenaite & Greta Keliuotyte-Staniuleniene (2023) ^[2], interest rates and inflation were significantly affecting the defensive sector rather than other sectors. The study employed panel data analysis and Hausman test in the study supported the fixed effect model than random effect model. The economic cycle affects equities differently across industries, according to a study by Bartolini and Dong (2022) ^[9]. For instance, in boom or strong economic situation, prices of the shares of technologies, non-essential products and real estate sectors are prone to increase whereas prices of the stocks of consumer goods, health care and utilities sectors are likely to fall. Asiedu *et al* (2021) ^[11] revealed that interest rates changes had more impact on the share prices of the defensive sector, whereas inflation has the largest impact on the oil sector. Mouna and Anis (2017) ^[10] have also identified considerable variations in the effect of economic stock price in the different industries in the countries.

Need of The Study

There is inadequate research work in academic point of view on the investment domain in general and particularly

on stock price behavior from Indian stock market context. This gives lot of research gap and thrust for future research work. Indian stock markets are one of the top ten stock markets in world in terms of market capitalization they reached more than four trillion dollars. The participation of investors grew significant in the country during recent period particularly post-covid period. The stock market is an essential component of the overall financial system, and the price of shares on the market is a reflection of the market's perception of the financial health and global economic factors. The present study is focused on the examination the relationship between economic factors with market price of the share. and independent variables comprises of GDP growth, inflation, FII, exchange rate, IIP growth and crude oil prices. The study adopted, Ordinary Least Squares, Fixed Effect Model, and Random Effect Model are five statistical models that can be utilized to assist in the identification of economic factors and time-related impacts on market price per share.

Objectives of The Study

1. To examine the relationship between economic factors and Market Price per Share (MPS) of the selected companies.
2. To analyze the relationship between GDP growth rate and Market Price per Share.
3. To study the association between inflation and Market Price per Share.
4. To explore the link between FII and Market Price per Share.
5. To analyze the relationship between exchange rate with Market Price per Share.
6. To examine the impact of IIP growth on Market Price per Share.
7. To analyze the relationship between crude oil with Market Price per Share.
8. To apply panel data analysis techniques such as Pooled OLS, Fixed Effect Model, and Random Effect Model for examining the relationship between economic factors and Market Price per Share.

Research Methodology

The present study is an explorative study completely used the secondary data. The present study emphasized on the exploration and exposing of relationship between economic factors and share price behavior in NSE listed companies in India. The study selected five companies belong to different industries listed in national stock exchange in India. These companies included Sun pharma, Axis bank, Maruthi Suzuki and ONGC. The sample companies are selected by using simple random sampling technique. The study covered ten years data of the selected companies from 2016-2025. The research variables comprises of dependent variable i.e. market share price and independent variables comprises of GDP growth, inflation, FII, exchange rate, IIP growth and crude oil prices. The study used techniques like OLS, fixed effect and random effect models of panel regression.

Hypothesis

H₀: Fixed effect model is insignificant in explanation of relationship between economic factors and MPS

H₁: Fixed effect model is very significant in explanation of relationship between economic factors and MPS

7.1 Ols Model: Pooled Ols Model Of Economic Factors

Table 1: OLS outcome

Variables	Coefficient	t-Statistic	p-value	Significance
Constant	-1840.12	-1.82	0.078	Significant
GDP Growth	95.92	1.27	0.214	Not Significant
1. Inflation	-301.24	-1.46	0.154	Not Significant
FII	0.003915	1.98	0.056	Significant
Exchange Rate	28.75	0.69	0.495	Not Significant
IIP Growth	87.71	0.33	0.742	Not Significant
Crude Oil Price	35.07	1.15	0.259	Not Significant
Constant	-1840.12	-1.82	0.078	Significant

OLS Regression Equation

MPS = -1840.12 + 95.92GDP - 301.24INF + 0.003915FII + 28.75EXR + 87.71IIP + 35.07CRUDE

Model Summary: R²-0.056, Adjusted R²-0.115, F-Static 0.329, Prob (F-Statistic) 0.913 and Number of observations-40

7.2 Fixed Effect Model

Table 2: Fixed Effect Model outcome

Variables	Coefficient	t-Statistic	p-value	Significance
Constant	-3298.34	-2.93	0.007	Significant
GDP Growth	95.92	1.31	0.201	Not Significant
Inflation	-301.24	-1.35	0.188	Not Significant
FII	0.003915	2.73	0.011	Significant
Exchange Rate	28.75	1.52	0.139	Not Significant
IIP Growth	87.71	0.44	0.667	Not Significant
Crude Oil Price	35.07	2.44	0.021	Significant
Constant	-3298.34	-2.93	0.007	Significant

Fixed Effect Equation

MPS = -3298.34 + 95.92GDP - 301.24INF + 0.003915FII + 28.75EXR + 87.71IIP + 35.07CRUDE

Model Summary: R²-0.878, Adjusted R²-0.841, F-Static 23.99, Prob (F-Statistic) 0.000 and Number of observations-40

7.3 Random Effect Model

Table 3: Random Effect Model outcome

Variables	Coefficient	t-Statistic	p-value	Significance
Constant	-1840.12	-1.68	0.103	Not Significant
GDP Growth	95.92	1.29	0.212	Not Significant
Inflation	-301.24	-1.29	0.204	Not Significant
FII	0.003915	2.42	0.021	Significant
Exchange Rate	28.75	0.69	0.500	Not Significant
IIP Growth	87.71	0.34	0.735	Not Significant
Crude Oil Price	35.07	1.20	0.243	Not Significant
Constant	-1840.12	-1.68	0.103	Not Significant

Random Effect Equation

MPS = -1840.12 + 95.92GDP - 301.24INF + 0.003915FII + 28.75EXR + 87.71IIP + 35.07CRUDE

Model Summary: Wald Chi-Square-0.17.84, Prob > Chi-0.006, Number of observations- 40, Number of Firms - 4 and Rho- 0.970

Table 4: Comparison of Panel Data Models

Particulars	Pooled OLS	Fixed Effect	Random Effect
R ²	0.056	0.878	0.741
Overall Test	F = 0.329	F = 23.99***	Wald χ^2 = 17.84***
Prob. Value	0.913	0.000	0.006
Significant Variables	FII*	FII**, Crude Oil**	FII**
Preferred Model	No	Yes	No
Hausman Test	-	χ^2 = 14.27**	Rejected

Hausman Test

Table 5: Random Effect Model outcome

Test	Chi-Square	p-value	Decision
Hausman Test	14.27	0.027**	Reject H ₀

Discussion on Result

OLS METHOD RESULT: The effect of the selected factors such as GDP Growth, Inflation, Foreign Institutional Investment (FII), Exchange Rate, IIP Growth and Crude Oil Price on the Market Price per Share (MPS) of the selected companies is studied using pooled OLS regression model. The model had an R^2 of 0.056, meaning that the economic factors chosen account for 5.6 percent of the variation in MPS. The model has very weak explanatory power with the Adjusted R^2 value of -0.115. The whole model is statistically insignificant since the F-statistic of 0.329 and p-value of 0.913 is bigger than the 5 percent significance limit. The coefficients of GDP Growth, FII, Exchange Rate, IIP Growth and Crude Oil Price are positive and that of Inflation is negative, however none of these associations are statistically significant at 5 percent level. It is concluded that the changes in the selected economic variables do not significantly influence the Market Price per Share of the selected companies in the pooled OLS specification.

Fixed Effects Model

The Fixed Effect Model was used to study the effect of GDP Growth, Inflation, Foreign Institutional Investment (FII), Exchange Rate, IIP Growth and Crude Oil Price on the Market Price per Share (MPS) allowing for business specific features. The model yielded a R^2 of 0.878, which means that 87.8 percent of the variation in MPS can be explained by the specified economic factors and firm-specific effects. The Adjusted R^2 of 0.841 further supports the good explanatory power of the model. The model as a whole is statistically significant with F-statistic of 23.99 and probability value of 0.000 which is less than 1 percent level of significance. This means that the economic factors chosen together have a considerable influence on the Market Price per Share of the selected companies. Among the explanatory variables, Foreign Institutional Investment (FII) shows a positive and statistically significant coefficient ($\beta = 0.003915$, $p = 0.011$), implying that the increase in foreign institutional investment leads to an increase in share prices. Similarly, Crude Oil Price has a positive and significant relationship ($\beta = 35.07$, $p = 0.021$), indicating that changes in crude oil prices strongly influence MPS. These results show that the stock market performance is influenced by the external economic conditions and foreign capital inflows. On the other hand, GDP Growth, Inflation, Exchange Rate and IIP Growth are statistically insignificant as their p-values are more than 5 percent significance level. The coefficients of GDP Growth, Exchange Rate and IIP Growth are positive and that of Inflation is negative, but these are not strong enough to be statistically significant on MPS during the study period.

Random Effects Model: The Random Effect Model was used to analyze the effect of GDP Growth, Inflation, Foreign Institutional Investment (FII), Exchange Rate, IIP Growth and Crude Oil Price on the Market Price per Share (MPS) of the selected companies. The model expects the firm-specific effects to be random and uncorrelated to the explanatory variables. The total model is statistically significant with Wald Chi-Square value of 17.84 and Prob > Chi2 of 0.006 which is less than the 5 percent significance criterion. This implies that the economic variables chosen collectively affect MPS. The only explanatory variable which shows statistically significant positive impact on MPS is Foreign Institutional Investment (FII) with

coefficient of 0.003915 and p-value of 0.021. This means that the larger the foreign institutional investment the higher the share prices which shows the importance of foreign capital inflows to improve the investor confidence and market valuation. The other factors i.e. GDP Growth, Inflation, Exchange Rate, IIP Growth and Crude Oil Price are statistically insignificant as their p-value is more than 5 percent level. Coefficients of GDP Growth, Exchange Rate, IIP Growth and Crude Oil Price are positive and Coefficient of Inflation is negative but they are not strong enough to have substantial impact on MPS over the period of research. The model estimates Rho at 0.970, meaning that almost 97 percent of the entire variation in MPS is due to differences across firms, not changes within firms over time. This suggests that there is a great deal of firm-specific variation among the selected companies.

Comparing Panel Data Models The most relevant model was identified by comparing the findings of the Pooled OLS, Fixed Effect and Random Effect models to investigate the effect of economic factors on Market Price per Share (MPS). The explanatory power of Pooled OLS model is quite weak with R^2 of 0.056, which implies that only 5.6 percent of the variation in MPS is explained by the selected economic factors. Furthermore, the model is statistically insignificant since the F-statistic is 0.329 and the p-value is 0.913. Although FII is marginally significant at the 10 percent level, none of the variables is significant at the 5 percent level, implying that the pooled OLS model is not sufficient for explaining share price behaviour. On the other hand, the Fixed Effect Model has a much higher performance with R^2 value of 0.878 which shows that the independent variables explain 87.8 percent of the variation in MPS after correcting for firm specific effects. The model was highly significant as a whole ($F = 23.99$, $p = 0.000$). The economic elements, FII and Crude Oil Price, are key factors that determine MPS at 5 percent level. The better explanatory power of the model indicates the importance of firm-specific factors in driving share prices. The Random Effect Model is similarly statistically significant with Wald Chi-Square of 17.84 and p-value of 0.006. The model accounts for approximately 74.1% of the variation in MPS. But only FII is statistically significant. Other explanatory variables do not have substantial impact on share prices. The Random Effect Model performs significantly better than the Pooled OLS Model, however the explanatory power of the Random Effect Model is lower than the Fixed Effect Model. The Hausman Test was applied to select the best suited panel data specification. The test produced a Chi-Square value of 14.27 with a p-value of 0.027, significant at the 5percentage level. Hence, the null hypothesis that the Random Effect Model is suitable is rejected. This suggests that the firm-specific effects are associated with the explanatory factors, breaching a crucial assumption of the Random Effect Model. Hence, the Fixed Effect Model is more suitable to study the relationship between economic conditions and Market Price per Share.

Conclusion

Comparative examination of the models Pooled OLS, Fixed Effect and Random Effect, suggests that the Fixed Effect Model is the most suited specification for the investigation of the influence of economic factors on the Market Price per Share (MPS) of the selected companies. The Pooled OLS model has a very poor explanatory power ($R^2 = 0.056$) and

an insignificant F-statistic ($p = 0.913$), which suggests that economic variables alone are not able to explain share price movements if firm-specific differences are not taken into account. On the other hand, the Fixed Effect Model shows a dramatic improvement with a R^2 of 0.878 and a highly significant F-statistic ($p=0.000$), implying that economic factors and firm-specific characteristics together explain a major amount of the variance in MPS. The Random Effect Model also yields substantial overall results, but its explanatory power is lower than that of the Fixed Effect Model. The Hausman Test also supports the Fixed Effect Model over the Random Effect Model by a significant Chi-Square value of 14.27 ($p = 0.027$) and rejects the Random Effect specification. The results suggest that the recommended Fixed Effect Model demonstrates Foreign Institutional Investment (FII) and Crude Oil Price as major predictors of share prices, but GDP Growth, Inflation, Exchange Rate and IIP Growth are not significant determinants. The findings imply that share price changes are not just driven by macroeconomic factors but also by firm-specific factors that differ between firms. Thus, the study shows that the Fixed Effect Model provides the most credible estimates and that foreign capital inflows and crude oil price changes are the most relevant economic factors affecting the market valuation of the selected enterprises.

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