

# Factors Influencing Investment Decisions In Indian Stock Market

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## Abstract

This research paper is an attempt to understand the relationship between factors that influences the investors decisions in the stock market. For this purpose, the data is gathered from young and active stock market investors using convenient sampling technique. Hypotheses are tested using t-test, Factor Analysis is used for analysis of results. It is evident that company related factors referred to as Microeconomic variables is one of the latent variables that includes many sub-variables. Country related factors referred to Macroeconomic variables is another latent variable that includes many sub-variables are considered by the investors before making the investments in the stock market. Finding suggest that, these sub-variables are highly correlated with each other. Investors also considers valuation ratios of the company and government stability as important factors for making investment decision.

**Keywords**— Microeconomic variables, Macroeconomics variables, Investment Decisions

## INTRODUCTION

Returns have been the center point of all the investments and the stock markets are no exception. Stock market investments have been attracting the investors in recent past due to its capacity to earn higher returns although the estimation of stock prices remains complicated. There are various theories that have been developed to understand the factors that actually affects the stock prices, theories such as Arbitrage Pricing Theory (Roll, R., & Ross, S. A. 1980) and Dividend Valuation and Growth Model (Gordon 1952) illustrates the factors that affect the stock prices but the investors decisions are usually based on fewer factors. Capital Structure Theory (Modigliani and Miller 1950) has an argument that profitability of the

company has an impact on its market value and debt has nothing to do with the valuation of the company. Inflation rate, Money supply and exchange rate has been some of the important determinant in stock market that affect the investors decisions (Misra, P. 2018). In case of developing economies like India the major factors that affect the stock's return are industrial production, wholesale price index and interest rate (Srivastava, A. 2010). Quick Ratio, Money supply and Debt to Equity ratio has an impact on the stock returns (Sayedy, B., & Ghazali, M. Z. 2017). Financial ratios have a relationship stock prices of the companies and especially profitability of the company has a close linkage with stock prices (Ligocká, M., & Stavárek, D. 2019).

The present study is an attempt to understand the relationship between the microeconomic variables and macroeconomic variables, important factors that investors consider making investment decisions.

## LITERATURE REVIEW

### Macroeconomics Variables:

Giri & Joshi (2017) examined the relationship between stock price and macro-economic factors and found that Economic growth, inflation and exchange rate has positive influence on stock prices. In a study conducted by Somoye, Akintoye, & Oseni, (2009) identified four factors EPS, GDP, Lending interest rates and Exchange rates and established the relation between stock prices and concluded that forces of demand and supply directly influences the stock prices while all other factors affect the demand and supply forces. Kumar & Padhi, (2012) examined BSE Sensex and different macroeconomic variables, the major variables considered were industrial production index, wholesale price index, etc. and concluded that macroeconomic variables and stock market are co-integrated. Money supply and industrial production are positively related to stock prices while whole sale price index is negatively correlated also short-term interest rate is not significant when determining the stock prices. Chaudhuri & Koo, (2001) found that domestic macroeconomic variables and international variables have an impact on stock return volatility also the role of government in deciding the fiscal and monetary policy is crucial for smooth functioning of stock market. Aydemir & Demirhan, (2009) clarified that there has been evident relationship between macroeconomic variables and stock prices and investment decisions but the direction of the causality isn't clear. In another study based on panel data approach was conducted by Srinivasan, (2012) concluded that factors such as dividend per share that affect stock prices in pharmaceutical, energy and infrastructure sector, while, earnings per share and price earnings ratio are important for manufacturing, energy, infrastructure, commercial banking and pharmaceutical sector and size of the firm is important factor in determining the share prices

in all the sectors. On the contrary Tangjitprom, N. (2011) suggests that macroeconomic factors are less important to predict future stock returns. Rjoub, H., Türsoy, T., & Günsel, N. (2009) examined another variable that affect stock market was unemployment rate in addition to interest rate, risk premium, exchange rate and money supply. Stock market returns are correlated with macroeconomic factors such as inflation and money supply but "it is difficult to establish" as stated by Flannery, M. J., & Protopapadakis, A. A. (2002). Long term relationship between the stock return and microeconomic factors such as industrial production, consumer price index is investigated by Nishat, M., Shaheen, R., & Hijazi, S. T. (2004). In a study conducted in the East Asian and Pacific countries by Phuong, L. (2020) indicated that inflation and interest rate have a negative impact on the stock capitalization. Nicholas Molodovsky (1995) established relationship between current earnings, earning power, P/E ratio and stock value.

### Microeconomic Variables:

In a study conducted on Indian stock market, National Stock Exchange by Malhotra & Tandon, (2013) concluded that the firm's book value, earnings per share and price-earnings ratio have a positive association with stock price. In another study conducted in Bahrain Financial market by Sharif, Purohit, & Pillai, (2015) resulted in identifying sub factors such as return on equity, book value per share, dividend per share, dividend yield, price earnings ratio, and size of the firm are significant in determining the share prices. Heins and Allison, (2017) claimed that stock price variability has no connection between average stock price if certain factors are such as variability of the stock, price earnings ratio, activity or turnover and exchanges where the stock is listed is kept constant. In another study conducted by George Bittlingmayer, (2016) states that stock volatility, output and political uncertainty are directly related to each other while political instability affects both stocks as well as output. Friend and Puckett, (1964) concluded that dividend is a significant factor for determining stock prices. Investors appreciate nonzero dividend payout

ratio. Ozlen, S. (2014) and Sadeghzadeh, K. (2018) established the relationship between share prices and liquidity ratios to understand the impact of microeconomic factors on the stock exchange in Istanbul and concluded that increase in current ratio, proprietary ratio, debtor's turnover ratio, net profit ratio and other financial ratio increase the share price in short term and debt to asset ratio and asset turnover ratio decreases the earnings on the share in the short run. Thuy, V., Thu, T., Thu, T & Viet, H. (2019) investigated the impact of profitability, and capital structure on the abnormal return in the Vietnam stock market

### RESEARCH METHODOLOGY

Research is the systematic approach to generalize and formulate the theory (Kothari, C. R. 2004). Research Methodology is described as an orderly and structured effort to investigate a specific problem and research design is the blue print created to answer the research question. Research is a systematic way of finding the solution to the problem under consideration. It is a systematic and organized effort to find solution to the problem under consideration. (Sekaran, U., & Bougie, R. 2019)

#### Hypothesis:

Research Hypothesis helps in finding solution to the problem under consideration. It is needed for a well-developed study Toledo, A. H., Flikkema, R., & Toledo-Pereyra, L. H. (2011). For the present study, following hypothesis was made.

Ho: There is no significant relationship between macroeconomic variables and investment decisions.

H1: There is significant relationship between macroeconomic variables and investment decisions.

Macroeconomic variables that were considered for the study were Demand Supply forces in Market, Regulatory Policies, Government Stability, Interest Rate, Inflation Rate, Exchange Rate and GDP.

Ho: There is no significant relationship between microeconomic variables and investment decisions.

H2: There is significant relationship between microeconomic variables and investment decisions.

Microeconomic variables measured for this study were Size of the company, Profitability, Stock Price, EPS, Dividend per share, P/E ratio, Stock volatility, Market Volatility.

#### Target Population and Sampling Method:

The target population for this research was young investors from Mumbai city who regularly invest in the stock market as the study was conducted in the context of Indian investors. This research is a part of pilot survey conducted to understand the factors influencing investors decision in Indian stock market. For the current research purpose, questionnaire was circulated among 50 investors out of which, data was collected from 30 respondents who are actively trade the stock market.

### RESULTS AND DISCUSSION

#### Reliability Test:

To test the reliability and internal consistency of the data, Cronbach's alpha was calculated. Cronbach's Alpha value greater than 0.7 indicates that the data is reliable.

Table 1. Result of Reliability Test

Variables	Cronbach's Alpha
Macroeconomic Variable	0.820
Microeconomic Variable	0.705

From the above table, it is clear that the data is reliable and the items included in the variables are reliable for further analysis.

#### Hypothesis Testing:

To test the hypothesis, one sample t-test was used. One sample t -test is also known as a student's test to be used for hypothesis testing, it can be applied when sample size is less than 30. In the present research, one sample t-test is conducted to find the relationship between factors and investment decisions. p value less than 0.05 is considered to be statistically significant.

Table 2.t – test statistics for *Macroeconomic* variables

<b>Macroeconomic Variable</b>	<b>t statistics</b>	<b>Sig.</b>
Demand Supply forces in Market	6.000	0.004
Regulatory Policies	6.000	0.004
Government Stability	2.799	0.049
Interest Rate	2.900	0.044
Inflation Rate	2.753	<b>0.051</b>
Exchange Rate	2.588	<b>0.061</b>
GDP	3.446	0.026

The above table indicates the p-value for the Demand Supply forces in Market is 0.004, Regulatory Policies is 0.004, Government Stability is 0.049, Interest Rate is 0.44, Inflation Rate is 0.051, Exchange Rate is 0.061 and GDP is 0.026.

For most of the variables, p-value is less than 0.05 therefore the null hypothesis is rejected.

From the t-test results, it is concluded that except for inflation rate and Exchange rate, investors consider all other items for making investment decisions and these factors are having significant relationship the investment decisions.

Table 3. t– test statistics for *Microeconomic* variables

<b>Microeconomic Variable</b>	<b>t statistics</b>	<b>Sig.</b>
Size of the company	6.000	0.004
Profitability	3.281	0.030
Stock Price	8.232	0.001
EPS	4.147	0.014
Dividend per share	6.000	0.004

Table 4. Correlation Matrix

P/E ratio	4.000	0.016
Stock volatility	4.147	0.014
Market Volatility	4.147	0.014

The above table indicates the p-value for Size of the company is 0.004, Profitability is 0.030, Stock Price is 0.001, EPS is 0.014, Dividend per share is 0.004, P/E ratio is 0.016, Stock volatility is 0.014 and Market Volatility is 0.014.

For all the variables, p-value is less than 0.05 therefore the null hypothesis is rejected.

From the table it is concluded that all the items are having significant relationship the investment decisions.

#### **Demographic data:**

It is observed that 38% of the respondents are from the age group of 18 to 25 followed by 33% from the age group of 26 to 35. Out of the total respondents, 80% of the respondents are male and post graduate having good financial knowledge and 54% of the respondents are employed in either multinational companies or are private employees having an investment experience of more than 3 years and 33% of them are currently having an investment in more than 20 companies.

#### **Correlation Matrix:**

Below table gives the correlation between the variables that are considered important for the investment decisions in the stock market, correlation above 0.5 is considered as the high correlation between the variables. Size of the company is positively correlated with the profitability and stock price. Profitability of the company has a negative correlation with dividend per share, interest rate, inflation rate, exchange rate. EPS and P/E ratio are highly correlated. GDP has a high correlation with interest rate and inflation rate.

Variables	Size of the company	Profitability	Stock Price	EPS	Dividend per share	P/E ratio	Stock volatility	Market Volatility	Demand Supply forces in	Regulatory Policies	Government Stability	Interest Rate	Inflation Rate	Exchange Rate	GDP
Size of the company	<b>1</b>	<b>0.559</b>	0.089	0.061	-0.159	-0.052	0.356	0.271	0.188	-0.119	0.053	-0.073	-0.189	-0.241	-0.185
Profitability	<b>0.559</b>	<b>1</b>	<b>0.419</b>	0.362	-0.017	0.159	<b>0.534</b>	0.321	0.112	0.052	0.198	-0.049	-0.013	-0.114	0.019
Stock Price	0.089	<b>0.419</b>	<b>1</b>	0.294	0.020	0.142	<b>0.467</b>	<b>0.516</b>	0.094	0.131	0.133	-0.187	-0.207	0.111	0.062
EPS	0.061	0.362	0.294	<b>1</b>	0.344	<b>0.615</b>	-0.039	0.206	0.117	0.201	0.290	<b>0.419</b>	0.146	0.154	0.045
Dividend per share	-0.159	-0.017	0.020	0.344	<b>1</b>	0.324	-0.066	-0.092	-0.388	-0.088	-0.269	0.097	-0.038	-0.184	-0.304
P/E ratio	-0.052	0.159	0.142	<b>0.615</b>	0.324	<b>1</b>	-0.016	0.346	0.199	0.289	0.225	<b>0.498</b>	0.220	0.262	-0.016
Stock volatility	0.356	<b>0.534</b>	<b>0.467</b>	-0.039	-0.066	-0.016	<b>1</b>	<b>0.441</b>	0.234	0.005	0.124	-0.227	-0.173	-0.041	0.007
Market Volatility	0.271	0.321	<b>0.516</b>	0.206	-0.092	0.346	<b>0.441</b>	<b>1</b>	<b>0.613</b>	0.387	0.170	0.123	-0.132	0.300	0.167
Demand Supply forces in Market	0.188	0.112	0.094	0.117	-0.388	0.199	0.234	<b>0.613</b>	<b>1</b>	<b>0.585</b>	<b>0.475</b>	0.257	0.195	0.380	0.315
Regulatory Policies	-0.119	0.052	0.131	0.201	-0.088	0.289	0.005	0.387	<b>0.585</b>	<b>1</b>	<b>0.559</b>	0.365	<b>0.456</b>	<b>0.536</b>	<b>0.443</b>
Government Stability	0.053	0.198	0.133	0.290	-0.269	0.225	0.124	0.170	<b>0.475</b>	<b>0.559</b>	<b>1</b>	-0.045	0.162	0.251	0.267
Interest Rate	-0.073	-0.049	-0.187	<b>0.419</b>	0.097	<b>0.498</b>	-0.227	0.123	0.257	0.365	-0.045	<b>1</b>	<b>0.553</b>	<b>0.428</b>	0.113
Inflation Rate	-0.189	-0.013	-0.207	0.146	-0.038	0.220	-0.173	-0.132	0.195	<b>0.456</b>	0.162	<b>0.553</b>	<b>1</b>	<b>0.546</b>	<b>0.640</b>
Exchange Rate	-0.241	-0.114	0.111	0.154	-0.184	0.262	-0.041	0.300	0.380	<b>0.536</b>	0.251	<b>0.428</b>	<b>0.546</b>	<b>1</b>	<b>0.776</b>
GDP	-0.185	0.019	0.062	0.045	-0.304	-0.016	0.007	0.167	0.315	<b>0.443</b>	0.267	0.113	<b>0.640</b>	<b>0.776</b>	<b>1</b>

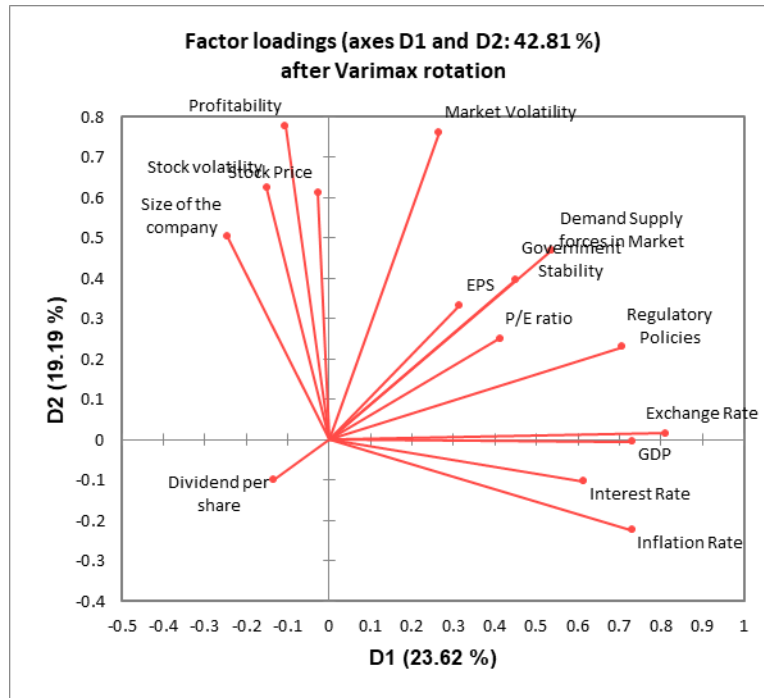
Values in bold are different from 0 with a significance level  $\alpha=0.05$

### Factor Analysis:

Factor analysis is a method to identify the important variables and is used to reduce the

number of variables into fewer variables or latent variable. For the factor analysis, variables are extracted using Principal components.

Figure 1. Biplot after Varimax Rotation



For this research, latent variables are Macroeconomic variable that includes Market volatility (0.581), Demand Supply forces in Market (0.708), Regulatory Policies (0.791), Interest Rate (0.513), Inflation Rate (0.564), Exchange Rate (0.748), GDP (0.632). These variables are not in control of the investors and changes in these factors affects the volatility of the stock and usually named as systematic risk. The second latent variable is Microeconomic variable that constitutes Size of the company (-0.638), Profitability (-0.706), Stock Price (-0.614), Stock volatility (-0.730) and it is mostly

a choice variable for the investors and usually named as unsystematic risk. The third latent variable is valuation ratios and it includes EPS (-0.698), Dividend per share (-0.763) and P/E ratio (-0.678). Investors assume these ratios to be important for investment decisions in stock market. Another important latent variable is Government stability (-0.676).

### CONCLUSIONS

The present study concludes the major variable that affect the decision making in the stock market. From the above, it can be concluded that

the investor can group the variables as uncontrollable and controllable. Uncontrollable would include the macroeconomic variables as supported by Olweny, T., & Omondi, K. (2011) and controllable would include the microeconomic variable and it is a choice variable for the investors as supported by Sadeghzadeh, K. (2018) in similar study using panel data analysis method. Another set of important variables are valuation ratios as reported by Sharif, T., Purohit, H., & Pillai, R. (2015) and government stability that investors assume to be important for the investment decisions.

### FUTURE SCOPE

The study is based on few factors, in future some more factors may be considered for the same and it can be tested on the large sample to understand the variability in the result.

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