

## Market Price As An Influencer of Investment Decisions

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### ABSTRACT

Investment decision of corporations are to a large extent taken at the board level where the project proposal is analysed as to its profitability, tax benefits, cash flow, volume expansion competition etc. The corporate investor, therefore considers the future performance and the method of funding the venture in taking his investment decisions. The explanatory power of the individual variables can be analysed through beta values. The beta value for equity is the highest followed by net sales. The other two influencers of investment growth are cash flow and market price. The financing variable debt does not have any significant influence over the investment growth. Besides the influence of market price is indirect as has been proved by the theories and does not have any direct influence an investment growth. By influencing the fundamental variable and the finance variables equity, the market price influences the investment growth. This would also help manager in identifying the desired expansion of investment. But market price alone is not sufficient. Rather, it is interrelationship between cash flows, equity issues and market price that provides a better view of investor sentiments on business performance and guides managers in investment decisions.

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INVESTMENT DECISIONS OF corporations are to a large extent taken at the board level where the project proposal is analysed as to its profitability, tax benefits, cash flow, volume expansion, competition, etc. The future estimates of these aspects are then given appropriate weights based on their importance to the business entity and the economic scenario. This appraisal of future performance of the project and the desirability of the management to take possible risks to undertake the project leads to one or more view point of corporate investment decisions. This is mode of funding the project. Corporate funding in short is a combination of net worth and debt. The right combination in fact is also felt to improve the future performance of the company. The corporate investor, therefore, considers the future performance and the method of funding the venture in taking his investment decision.

Apart from these basic motives for the company, the boosting of the company image in the stock market is also a factor considered by the board in their investment decisions. With a large number of companies opting for

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public issues to raise their project finance now-a-days, it is all the more important for the company to consider the behaviour of the share price in making their investment decision. A substantial increase in the market price would indicate to the manager that the future prospects of the company as viewed by the market is good. On the other hand, if the market price shows a decreasing trend, it would indicate to the company that a further investment in the same project would not be favourably viewed by the investing public. He would in this case prefer to go in for diversification. In fact the decision to go in for public fund raising may depend to a large extent on the performance of the share price in the market. In short, the questions that have been raised for this research are as follow:

1. Do variables such as net sales, cash flow which measure the performance, and debt and equity holding influence the increase or decrease in the business investments of companies?
2. Does the market price influence the increase or decrease in the business investments of the companies?
3. Can the growth pattern of business investments be related to the growth pattern of these variables?

The major issue of this research paper through these questions is to identify if the managers of corporate entities considers stock price as an influencer of business investment decisions. The impact of market price on investment decisions can be better established by studying the growth patterns of historical figures reported by the company.

### **Theory Formulation**

Business investment is basically said to be influenced by fundamental/performance variable such as sales and cash flow. With increase in sales, which indicates a good market for the company, the investment of the company can also be expected to increase. The increase in cash flows also indicates higher returns from the investment growth.

Recent research findings increasingly suggest that apart from these fundamentals, the form of financing also influences the investment growth. The investment growth can be either through debt or equity.

Apart from these, the stock returns by themselves are found to influence the investment changes<sup>1</sup>. There is also evidence that investment growth has not always responded to sharp movements in stock prices<sup>2</sup>.

Four theories have been framed that explain the relationship between stock returns and investment growth. The first theory<sup>3</sup> advocates the view that the stock market is a passive predictor of future activity and therefore managers do not rely upon this to make investment decisions.

The second theory<sup>4</sup> says that in making investment decisions, managers rely on the stock market as a source of information, which may or may not be correct about future happenings. This gives room for signals to influence

their investment decisions. That is, if the stock returns reflect the future increase in fundamentals such as sales and profits, then managers might consider the market price to be a determinant of the investment growth.

The third theory<sup>5</sup> is of the view that stock market affects investment through its influence on the cost of funds and external financing. If this were true then market price would be a determinant in choosing the form of financing, either debt or equity.

The fourth theory<sup>6</sup> says that the stock market exerts direct pressure on investment growth apart from its informational and financing role. The managers in such a situation is supposed to keep track on the market price movements since, a low stock price may increase the probability of a takeover or a forced removal of top management. Also, if the market is pessimistic about the firm's profitability, the management may be deterred from investing further since they might perceive further deterioration of the stock price. Thus stock price is supposed to influence the business investment directly and indirectly.

### **Methodology**

The present empirical analysis looks for evidence for proving or disproving the four theories advocated here and in the process answering the questions raised in the research paper.

Business investment is defined as investment in fixed assets of the corporate entities. It is assumed that no revaluation of fixed assets have been done during the period of study and therefore the change in fixed assets over a year would indicate investment of additional capital for fixed assets acquisition.

Measures of company performance (fundamentals) taken for this research work are net sales and cash flows. There are also other variables which are used to measure performance such as dividend payout, and net profit. Dividend payout though a measure of performance, need not be a direct influencer of increase or decrease in business assets. Rather than net profit, cash flows which determine the payback of the projects has been taken to measure performance. Cash flows are arrived at by adding depreciation to net profit.

Financing variables equity and debt are not further subdivided into reserves, public issue, rights issue, promoters contribution etc. Debt indicates external financing such as debentures and long term loans and equity indicates share capital.

Market price is the average price of the firm on the last month of financial disclosure. This has been taken since all the other variables are accounting measures which are disclosed as on a particular date. If at all managers consider the market price they might be considering the yearly trend rather than the weekly or daily trends. Again representing yearly market price can also be through the average market price in a year. But stocks which are quoted frequently or infrequently have not been segregated and therefore an average price of a month corresponding to the financial

disclosure has been taken as the market price. Eleven companies had not recorded any trading in some of the years. Therefore, these years were removed from analysis.

Growth is defined as percentage change in variables over one year since we are observing and collecting accounting data. One year duration could show the short run changes in growth.

The data for the research are collected from company's profit and loss accounts and balance sheets. One hundred companies for this purpose have been selected. The securities of these companies are quoted in the 'A' list of the Bombay Stock Exchange. These companies are necessarily growth companies and most of the companies (92) are included in the Bombay Stock Exchange National Index. Companies in the BSE National Index representing hotel, shipping and finance industries were excluded since the definition of assets might vary in such cases. Ten year data from 1982 to 1993 for these companies were collected from the Bombay Stock Exchange Official Directory.

The analysis proceeds in several steps. First, the hypothesis relating to the theories were framed and to test each hypothesis equations were drawn. Second, the relationship between the growth pattern of the variables net sales, cash flow, debt, equity and market price with the growth pattern of business investment is tested. Here the growth is measured as one year growth. Third the indirect influence of market price on the fundamental variables and financing variables is also tested.

### **Hypotheses**

The hypotheses framed were as follows:

#### **Theory I**

1. Growth in market price is a direct influencer of growth in business investments.

#### **Theory II**

1. Growth in net sales and cash flows influence the growth in business investments.
2. Growth in market price influences the growth in net sales and cash flows.
3. Growth in net sales, cash flows and market price together influence the growth in business investments.

#### **Theory III**

1. Growth in debt and equity influences the growth in business investments.
2. Growth in market price influences the growth in debt and equity.
3. Growth in debt, equity and market price together influence the growth in business investments.

**Theory IV**

1. Growth in net sales, cash flows, debt, equity and market price together influence growth in business investments.

The type of analysis used is the multiple regression model. This model is capable of providing the influence of each variable as well as the total significance. Canonical correlation analysis has also been used to test the influence of a single independent variable on two dependent variables.

**Results of Analysis**

The variable introduced in the analysis are:

- I = business investments
- MP = market price
- NS = net sales
- CASHF = cash flows.
- DEBT = debt
- EQUITY = equity

Short run Growth Pattern (One Year Growth)

A multiple regression analysis was carried out with growth in investment as the dependent variable and growth in other variables as the independent variables. The equations framed to test the four theories are as follow:

Theory 1 :

Hypothesis 1:

$$\text{growth in I} = a + c1 * \text{growth in MP.}$$

Equation Number 1      Dependent Variable.. I

Variable (s) Entered on Step Number

1.    MP

Multiple R	.01427
R Square	.00020
Adjusted R Square	- .01000
Standard Error	122.81323

**Analysis of Variance**

	DF	Sum of Squares	Mean Square
Regression	1	301.06186	301.06186
Residual	98	1478142.84663	15083.09027

F = .01996      Signif F = .8879

**Variables in the Equation**

Variable	B	SE B	Beta	T	Sig T
MP	-.087083	.616380	-.014270	-0.141	.8879
(Constant)	38.366194	27.042846		1.419	.1592

This equation is not at all significant and the R square value for this equation is also very low. Hence, the hypothesis would be accepted and market price would not be a direct influencer of investment growth.

Theory 2:

Hypothesis 1:

growth in I = a + c1 \* growth in NS + c2 \* growth in CASHF

Equation Number 2      Dependent Variable.. I

Variable(s) Entered on Step Number

1..      CASHF

2..      NS

Multiple R                      .97188

R Square                         .94455

Adjusted R Square             .94341

Standard Error                 29.07155

#### Analysis of Variance

	DF	Sum of Squares	MeanSquare
Regression	2	1396463.88909	698231.94455
Residual	97	81980.01940	845.15484

F = 826.15861      Signif F =      .0000

#### Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
CASHF	.163785	.026962	.262242	6.075	.0000
NS	.679680	.039511	.742618	17.202	.0000
(Constant)	2.444450	3.015272		.811	.4195

This equation is significant at 1% level and individually growth in net sales is a better determinant of investment growth than cash flows as the beta coefficient is more for net sales than cash flows. The explanatory power of this equation is 94%. As per the expectations, the net sales and cash flows, which are considered as fundamental variables are significant influencers of investment growth and 94% variation in one year growth rate in investments are explained by these fundamentals.

Hypothesis 2:

growth in NS, growth in CASHF = a + c1 \* growth in MP

#### Canonical Correlations

Number	Eigenvalue	Canonical Correlation	Wilks Lambda	Chi-Square	D.F.	Sign. Level
1	5.276E-002	.2297	.9472	5.2574	2	.0722

Coefficients of Canonical Variables of the First Set

NS                      -1.70031

CASHF                 1.75214

Coefficients for Canonical Variables of the Second Set

MP	1.00000
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Since in this hypothesis two dependent variables are to be equated with one independent variable, a canonical correlation analysis was considered most suitable to test this hypothesis. The results show a canonical correlation of .2297, which when tested through the Wilks Lamda confirms significance at 10 % level. The coefficients or weights of net sales and cash flow are high but have opposite signs. The canonical correlation reveals that an increase in the market price is equated with a decrease in net sales and increase in cash flow. The positive sign in cash flows is self explanatory where an increase in market price is associated with increased returns from business investments. The negative sign observed for net sales could be because market price is more concerned with future developments. An increase in sales might not necessarily lead to future investment opportunities since it attracts competition. Therefore, movements in sales do not correspond to similar movements in market price as long as there is opportunity for growth. Cash flows reflects better the opportunity for growth, as cash flows provides investing capability to the company.

These two equations together suggest that market price is an indirect determinant of fundamentals and therefore managers might consider market price change to affect their investment decisions, if they consider sales and cash flows as influential variables.

Hypothesis 3:

$$\text{growth in I} = a + c1 * \text{growth in NS} + c2 * \text{growth in CASHF} + c3 * \text{growth in MP.}$$

Equation Number 3      Dependent Variable.. I

Variable(s) Entered on Step Number

- 1.. CASHF
- 2.. MP
- 3.. NS

Multiple R	.97190
R Square	.94460
Adjusted R Square	.94287
Standard Error	29.21026

**Analysis of Variance**

	DF	Sum of Squares	MeanSquare
Regression	3	1396532.92383	465510.97461
Residual	96	81910.98466	853.23942

F = 545.58071      Signif F = .0000

**Variables in the Equation**

Variable	B	SE B	Beta	T	Sig T
CASHF	.162020	.027792	.259416	5.830	.0000
MP	-.042846	.150629	-.007021	-.284	.7767

NS	.682190	.040668	.745360	16.775	.0000
(Constant)	.763351	6.641393		.115	.9087

This equation is significant at 1% level and the explanatory power of this equation is 94%. In fact the adjusted R square has reduced marginally by .00054. This leads us to the conclusion that market price does not add any direct explanatory power to the change in investments along with net sales and cash flows. Market price is only an indirect influencer of investment because it affects net sales and cash flows significantly.

The coefficients of this equation also confirm this. While net sales and cash flows are significant at 1% level, the coefficient of market price is not at all significant. This proves theorem II that managers consider market price for their investment decisions since they presume that market price predicts movements in performance variables such as sales.

Theory 3:

Hypothesis 1:

growth in I = a + c1 \* growth in DEBT + c2 \* growth in NW

Equation Number 4 Dependent Variable.. I

Variable(s) Entered on Step Number

1.. EQUITY

2.. DEBT

Multiple R	.98358
R Square	.96743
Adjusted R Square	.96676
Standard Error	22.27978

#### Analysis of Variance

	DF	Sum of Squares	MeanSquare
Regression	2	1430294.20733	715147.10367
Residual	97	48149.70116	496.38867

F = 1440.69989      Signif F = .0000

#### Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
EQUITY	.970748	.019253	.979344	50.420	.0000
DEBT	.005646	.008732	.012559	.647	.5194
(Constant)	7.240862	2.390206		3.029	.0031

This equation is significant at 1% level and equity as an individual variable also significantly (1%) contributes to the growth of investments. The other financial variable debt is not a significant influencer. The explanatory power of this equation is 97%. The contribution of debt to the growth in investment process is 0.

Hypothesis 2:

growth in DEBT, growth in EQUITY = a + c1 \* growth in MP

**Canonical Correlations**

Number	Eigenvalue	Canonical Correlation	Wilks Lambda	Chi-Square	D.F.	Sign. Level
1	2.535E-003	5.035E-002	.9975	.2462	2	.8842
Coefficient for Canonical Variables of the First Set						
	DEBT	-0.33160				
	EQUITY	-0.83980				
Coefficients for Canonical Variables of the Second Set						
	MP	1.00000				

The canonical correlation gives a 0 and there is no significant influence of debt and equity to market price. There seems to be no indirect relationship between market price and the financing variables debt and equity.

Hypothesis 3:

$$\text{growth in I} = a + c1 * \text{growth in DEBT} + c2 * \text{growth in NW} + c3 * \text{growth in MP}$$

Equation Number 5      Dependent Variable .. I

Variable (s) Entered on Step Number

- 1.. EQUITY
- 2.. MP
- 3.. DEBT

Multiple R	.98413
R Square	.96852
Adjusted R Square	.96754
Standard Error	22.01805

**Analysis of Variance**

	DF	Sum of Squares	MeanSquare
Regression	3	1431903.63614	477301.21205
Residual	96	46540.27235	484.79450
F = 984.54337		Signif F = .0000	

**Variables in the Equation**

Variable	B	SE B	Beta	T	Sig T
EQUITY	.972133	.019042	.980740	51.052	.0000
MP	.201600	.110645	.033036	1.822	.0716
DEBT	.005894	.008630	.013110	.683	.4963
(Constant)	-.703043	4.958671		-1.142	.8876

This equation is interesting in the sense the explanatory power of this equation has increased from the equation 4 which assessed the influence of only debt and equity. The marginal increase of adjusted R square is .00078. While looking at the individual variables contribution market price has a

significant influence in the equation at 10% level. Equity is significant at 1% level, but debt does not significantly contribute to the growth of investments. It can be concluded from this that market price might be an indirect influencer of equity than debt and therefore is significantly contributing in this model to the growth in investments.

These three equations taken together indicate that financing variable equity is a major determinants of investment growth. Market price is not influencing the financing variables, but indirectly influences only equity growth.

Theory 4:

Hypothesis 1:

growth in I = a + c1 \* growth in NS + c2 \* growth in CASHF +  
c3 \* growth in NW + c4 \* growth in DEBT + c5 \* growth in MP  
Equation Number 6      Dependent Variable .. I  
Variable (s) Entered on Step Number

1..      CASHF  
2..      MP  
3..      DEBT  
4..      NS  
5..      EQUITY

Multiple R                      .99042  
R Square                         .98093  
Adjusted R Square             .97992  
Standard Error                 17.31666

#### Analysis of Variance

	DF	Sum of Squares	MeanSquare
Regression	5	1450256.43347	290051.28669
Residual	94	28187.47503	299.86676
F = 967.26723		Signif F =	.0000

#### Variables in the Equation

Variable	B	SE B	Beta	T	Sig T
CASHF	.037968	.018908	.060792	2.008	.0475
MP	.176911	.089861	.028990	1.969	.0519
DEBT	.004458	.006790	.009918	.657	.5130
NS	.282991	.038353	.309195	7.379	.0000
EQUITY	.632265	.047635	.637863	13.273	.0000
(Constant)	-2.175270	3.985834		-.546	.5865

This final equation is significant at 1% level and the explanatory power of this equation is 97.99%. Almost a major portion of the variation in investment growth has been explained by the selected variables. The contribution of individual variables to the growth of investments can be identified from the

significance of coefficients. First net sales and equity are significantly contributing at 1% level. Second cash flow and market price are significant at 5% level. Debt is not a significant contributor to the explanation of variation in the growth of investments.

This finally proves theory 4 that market price is considered by managers while making their investments because market price significantly influences the fundamental variables and funding variable equity. Therefore, market price cannot be ignored by managers while deciding on short term growth strategy.

### **Discussions**

Business investments are influenced by fundamental variables such as net sales and cash flows and also the financing variable equity. All are indicating a positive influence on the investment growth as can be seen from the positive coefficients. The explanatory power of the individual variables can be analysed through the beta values. The beta value for equity (63.78%) is the highest followed by net sales (30.92%) and market price (2.9%). The financing variable debt does not have any significant influence over the investment growth. This could be because, most of the corporate entities are by and large depending on fresh issue in the primary market than depend on financial institutions for support. Debt as such therefore, seems to have no influence on investment growth. Besides, the influence of market price is indirect as has been proved by the theories and does not have any direct influence on investment growth. By influencing the fundamental variables and the finance variable equity, the market price influences the investment growth.

Acceptance of theories 2, 3, and 4 reveals that market price influences net sales, cash flows and equity. The rejection of theory 1 indicates that market price is not a direct influencer. Therefore, after considering the results of all the four theories the final conclusion that market price is an indirect determinant of investment growth has been arrived at.

The implication of this finding to the corporate entities is that market price movements cannot be ignored altogether by the managers while taking their investment decisions. The market price movement is a good indicator of the companies performance and also the extent of equity holding. A good manager would be able to predict his companies image on the stock market with these price movements. This would also help him in identifying the desired expansion of investment.

Market price is an indirect influencer, hence, observing movements in market price alone will not help us to take effective decisions. It is the interrelationship between cash flows, equity issues and market price that provides a better view of investor sentiments on business performance and guides managers in investment decisions.

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