

Analysis of the Determinants of Shareholders Value Creation: A Study of Infosys

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ABSTRACT

The financial efficiency and effectiveness of a company can be examined by applying several traditional financial tools like Return On investment (ROI), Return On Invested Capital (ROIC), Return On Total Assets (ROTA), Earning Per Share (EPS), etc. These measures lack power to exhibit the extent of the value created from view of point of ultimate owners (Shareholders) of the company. Shareholder value creation has gained momentum as the sole measure of wealth added to the shareholders funds after meeting the return expected by the shareholders for the sacrifice of their funds. The study deals with an analysis of the determinants of shareholders value creation on the basis of the operating and financial data collected from the annual reports of the infosys for the study period from 2008-2009 to 2017-18.

Keywords: Shareholder value creation; Return on equity; Financial leverage multiplier

INTRODUCTION

Business is basically a process of adding value, financial or physical, to the resources that are available in the Nature with the application of knowledge, skill, technology, time, etc., in a judicious manner so as to achieve the predefined firm's goals and also to contribute fairly to Socio-Economic Development of the economy. This spirit or philosophy behind business is the well accepted reality across the globe. Creation of or adding value to the financial resources deployed by the corporate entities is not an exception. Corporate entities are characterized by the divorce between the owners' of funds and the users of funds. Unless the financial return, achieved by the managerial people through the process of mobilization and deployment of funds governed by the sound cannons of financial flows into, within and out of the business enterprise, is in consonance with the relevant risk (i.e., the return expected by the owners of the fund). If not, the shareholders will not mind to continue to be the shareholders of such company and the probable outcome in such a situation would be outflows of funds from the firm with an adverse impact on financial health of the company. Hence, the capacity of the company in adding value to the shareholders' funds through the process of risk-return trade off (i.e., shareholders' value creation) has gained momentum in recent years to judge the financial prudence of users of funds [1].

Need for the study

In today's competitive environment, creating and maintaining a fair

value of addition to the wealth of ultimate owners of the company has become a challenging task. The shareholder value creation is basically affected by two variables, viz., Return On Equity (ROE) and Cost of Equity (Ke). The relationship among ROE, Cost of Equity and addition to the wealth of Shareholders is structured as follows:

- If $ROE > K_e$, Shareholders' wealth is increased
- If $ROE < K_e$, Shareholders' wealth is destroyed
- If $ROE = K_e$, Shareholders' wealth is maintained.

In view of the above, analytical and empirical studies relating to efficient and effective management of financial flows of the company, identification of the value drivers, assessing their impact on the shareholder value creation process of the company, streamlining the whole process of value creation in the light of those value drivers which are found to be neutral or negative in their capacity to add value, etc., would become most relevant [2].

Review of literature

There are several studies relating to EVA, MVA and shareholder value creation. To mention a few most related studies are:

- 1) Based on the sample 613 companies in the USA, examined the linkage between EVA and MVA and concluded that there was a high level of correlation between EVA and MVA in case of companies with positive EVA.

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2) Relating to EVA and MVA in US Computer industry found that the EVA was the best booster of the MVA when compared with other variables.

3) Made the comparative study of old and new generation companies and concluded that old generation companies created more shareholder value than new generation companies.

4) Studied Shareholder Value Creation and Financial Performance of selected Automobile Companies in India by applying some selected ratios.

5) Analyzed the trends of and relationship between EVA and EPS in private sector banks in India.

The review reveals that the most of the studies have focused on the application of financial and accounting tools drawn from managerial accounting, managerial finance, managerial cost accounting, etc., without looking at shareholder value drivers from econometrics perspective or quantitative finance perspective. Hence, the present study is quite different from earlier studies.

Statement of the research problem

Shareholder Value is a multi-variable phenomenon. Broadly, it is influenced by the micro value-drivers and macro-value drivers. Micro value drivers are spread over all the function areas like production, marketing, HRM and finance. The ultimate effect of the interplay of these micro-variables is measured in financial term i.e., the earnings available to the shareholders. Finance is the life blood of the business. All other micro drivers get activated by the value drivers in the area of finance. However, the strength of the value drivers in the area of finance depends upon the quality of financial strategies or policies, viz; financing policies, investment policies, and dividend policies adopted by the firm. Poor management of finance may totally neutralize the positive effect of other micro-value drivers in the area of production, marketing, HRM (which is measured in terms of Earnings before interest and tax, i.e., EBIT) due to faulty financing decision of the company and the EBIT after interest obligation may turn out to be zero. Consequently, the firm's earnings available to the shareholders would also be zero. Attaining or reaching such an alarming situation is not the objective of a commercial business enterprise. Exploration of the variables which are affecting the ultimate wealth of shareholders is of paramount importance [3,4].

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Objectives of the study:

- 1) To identify the shareholder value drivers or the drivers of ROE.
- 2) To test the statistical significance of each value driver in the process of Shareholder Value Creation.
- 3) To test the statistical significance or explanatory power of Multiple Regression Model in the process of value creation.
- 4) To test the optimality of the regression model.

METHODOLOGY

Scope of the study

The study is confined to testing the significance of the different

value drivers individually and collectively on the shareholder value creation process of the Infosys.

Nature of the data

The study is based on secondary data collected from the annual reports of the study unit for a decade period from 2008-09 to 2017-18.

Tools used for analysis

The main tools used in the study are simple regression, multiple regression analysis, ANOVA, ratio analysis, etc.

Drivers of return on equity

Shareholder value is the function of two variables, viz; return on equity and the cost of equity. However, the ROE is the most influencing factor affecting the shareholder value and this ROE itself is influenced by the following factors (or drivers):

- (a) Operating Profit Margin (=EBIT/Sales)
- (b) Capital (or Investment) Turnover (=Sales/Invested Capital)
- (c) Finance Cost Ratio (=EBT/EBIT)
- (d) Financial Structure Ratio (=Invested Capital/Owners' Capital)
- (e) Tax Effect Ratio (=EAT/EBT)

Where, EBIT=Earnings before Interest and Tax

EBT=Earnings before Tax

EAT=Earnings after Tax

EBIT=Sales-Cost of goods sold-Fixed operating expenses

EBT=EBIT-Interest (I)

The above drivers are denoted by X1, X2, X3, X4 and X5 respectively in the present study.

Multiple regression model used

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \beta_5 X_{5t} + E_t$$

Where, Y_t =Dependent Variable.

β_0 =Y Intercept (i.e., value of Y when the influence of all independent variables together is zero)

β_1 =Partial regression coefficient of X1.

β_2 =Partial regression coefficient of X2.

β_3 =Partial regression coefficient of X3.

β_4 =Partial regression coefficient of X4.

β_5 =Partial regression coefficient of X5.

E_t =Random Error, (with $t=1, \dots, 10$)

Hypotheses formulated

(1) For testing MLRM

$$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$$

H1: At least one β_1 is not equal to zero.

(2) For testing partial regression coefficients

i. Operating Profit Margin Ratio (X1)

H0: $\beta_1=0$

H1: $\beta_1 \neq 0$

ii. Investment Turnover Ratio (X2)

H0: $\beta_2=0$

H1: $\beta_2 \neq 0$

iii. Finance Cost Ratio (X3)

H0: $\beta_3=0$

H1: $\beta_3 \neq 0$

iv. Financial Structure ratio (X4)

H0: $\beta_4=0$

H1: $\beta_4 \neq 0$

v. Tax Effect Ratio (X5)

H0: $\beta_5=0$

H1: $\beta_5 \neq 0$

Analysis and interpretation of data

It is plausible from the literature of financial theory or any other discipline of study that anything or everything under the sky has a tendency to depend on one or more variables or factors or causes. The present study is centered around the aforesaid idea and aims at examining the relation that exists between different variables (called as value drivers in the study) identified by analyzing the firm’s financial statements and its ROE. In other words, the analysis is centered around the evolution (or the change) in the ROE depending on the evolution (i.e., change) in the key value drivers at the firm’s level [5,6].

Input data: The values of the Return On Equity (ROE) and the five independent variables (i.e., Value drivers) of the sample for the period under the study are exhibited in Table 1. The input data are fed in the MS-Excel software and the excel output for MLR Model is shown in Table 2.

Table 2 reveals that:

i. All the shareholder value drivers taken together are capable of contributing to the extent of 99.9% (approx. 100%) in the process of shareholder value creation. Hence, the model has strong explanatory power which is evident from R2 value. Therefore, the null hypothesis that all independent variables together do not contribute to shareholder value creation is rejected (Table 2A). This

is also in consonance with priory reasoning in the area of corporate finance theory and literature. This priory reasoning the ROE is the product all the value drivers and every value driver is expected to have a positive influence on the Return On Equity (ROE);

ii. All the independent variables except variable X3 have taken positive partial regression coefficients and their P values are also less than the threshold significance value of 0.05 (Table 2B). Hence, the null hypotheses of all the partial regression coefficients except the variable X3 are not supported by the test results for acceptance; and

iii. The partial regression coefficients ($\beta_1, \beta_2, \beta_4$ and β_5) of operating profit margin ratio (X1), capital turnover ratio (X2), financial structure ratio (X4) and tax effect ratio (X5) are positive and their P values are also less than the threshold P-value of 0.05 (Table 2C). Therefore, the null hypotheses of X1, X2, X4 and X5 are not supported by the test results and support in favor of their respective alternative hypotheses. It implies that the value drivers X1, X2, X4 and X5 have capacity to contribute towards increase in EPS. Moreover, their presence in the regression model would also be in consonance with the priori reasoning in corporate finance, i.e., the Y variable, ROE, is the result of inter relationship among all the independent variables (value drivers).

iv. The financial cost ratio, with a quotient value of 1 in the input data, does not have positive influence on ROE as its partial regression coefficient is zero. Hence, it needs to be eliminated as per the principles of econometrics.

Analysis of effect of deleting an independent variable, X3, in the model

The partial regression coefficient of finance cost ratio (X3) is zero as is evident from Table 2C. Hence, it needs to be deleted from the regression model structure as per the principles of econometrics.

The resultant excel output, if X3 is eliminated, appears as shown in Table 3.

Table 3 signifies that there will not be any impact on R2 and R2 values even if X3 is eliminated. The status of the explanatory power of the model remains unaffected. Hence, it is reiterated that the Variable X3 needs to be eliminated from the model (Table 3A). But such a blind conclusion without referring to the financial prudence that the presence of debt in the capital structure would bring in added advantage in the form of interest tax shield, i.e., gain from leverage. Such elimination would prevent the firm from enjoying the gain from leverage (Tables 3B and 3C).

Table 1: Input data relating to regression model variables.

Year	Return on equity (Y)	Operating margin ratio (X ¹)	Capital turnover ratio (X ²)	Financial cost ratio (X ³)	Financial structure ratio (X ⁴)	Tax effect ratio (X ⁵)
2008-09	0.3280	0.2965	1.5083	1	0.7878	0.9306
2009-10	0.2718	0.3473	1.2080	1	0.8167	0.7932
2010-11	0.2631	0.3390	1.3199	1	0.8020	0.7329
2011-12	0.2659	0.3282	1.1329	1	1.0039	0.7121
2012-13	0.2481	0.2996	1.2022	1	0.9352	0.7366
2013-14	0.2392	0.2789	1.1749	1	1.0090	0.7235
2014-15	0.2258	0.3045	1.0322	1	1.0037	0.7158
2015-16	0.2215	0.2894	1.0556	1	1.0059	0.7205
2016-17	0.2080	0.2787	1.0320	1	1.0052	0.7194
2017-18	0.2468	0.2749	1.1205	1	1.0132	0.7907

Table 2: Excel output for multiple linear regression model for analysis of shareholder value drivers.

(A) Analysis of shareholder value drivers for regression statistics

Regression statistics	
Multiple R	0.999540364
R Square	0.999080938
Adjusted R Square	0.798345689
Standard Error	0.001371674
Observations	10

(B) Analysis of shareholder value drivers for ANOVA.

ANOVA					
	df	SS	MS	F	Significance F
Regression	5	0.010226526	0.002045305	1358.83305	1.51377E-06
Residual	5	9.40745E-06	1.88149E-06		
Total	10	0.010235933			

(C) Analysis of shareholder value drivers for ratio analysis

10	Coefficients	Standard Error	t stat	P-value	Lower 95%	Upper 95%
Intercept	-0.731626925	0.030147914	-24.26791186	2.21449E-06	-0.809124605	-0.654129244
Operating profit margin(X1)	0.804485451	0.031022904	25.93198389	1.59305E-06	0.724738537	0.884232365
Capital turnover(X2)	0.206067608	0.007576885	27.19687563	1.2573E-06	0.186590604	0.225544612
Financial cost ratio(X3)	0	0	65535	NUM	0	0
Financial structure ratio(X4)	0.272256237	0.013657368	19.93475193	5.86964E-06	0.237148856	0.307363618
Tax effect ratio(X5)	0.317817175	0.012882712	24.67005226	2.04098E-06	0.28470111	0.35093324

Table 3: Excel regression output without X3 variable.

(A) Excel regression output without X3 variable for regression statistics

Regression statistics	
Multiple R	0.999540364
R square	0.999080938
Adjusted R square	0.798345689
Standard error	0.001371674
Observations	10

(B) Excel regression output without X3 variable for ANOVA

ANOVA					
	df	SS	MS	F	Significance F
Regression	4	0.010226526	0.002557	1358.83305	8.95662E-08
Residual	5	9.40745E-06	1.88E-06		
Total	9	0.010235933			

(C) Excel regression output without X3 variable for ratio analysis

	Coefficients	Standard error	t stat	P-value	Lower 95%	Upper 95%
Intercept	-0.731626925	0.030147914	-24.2679	2.21449E-06	-0.809124605	-0.654129244
Operating profit margin(X1)	0.804485451	0.031022904	25.93198	1.59305E-06	0.724738537	0.884232365
Capital turnover(X2)	0.206067608	0.007576885	27.19688	1.2573E-06	0.186590604	0.225544612
Financial structure ratio(X4)	0.272256237	0.013657368	19.93475	5.86964E-06	0.237148856	0.307363618
Tax effect ratio(X5)	0.317817175	0.012882712	24.67005	2.04098E-06	0.28470111	0.35093324

RESULTS AND DISCUSSION

The major findings of the study and the suggestions relating thereto are listed below:

All the shareholder value drivers (except financial cost ratio, X3), *viz.*, operating profit margin ratio (X1), capital turnover ratio (X2), financial structure ratio (X4) and tax effect ratio (X5) together have contributed positively to the extent of 99.99% to the explanatory power of the model.

The financial cost ratio (X3) is found to have zero effect on the explanatory power of the model [7,8]. However the elimination of this variable from the model would be against the priori reasoning in finance theory; because all the independent variables are expected to contribute positively in influencing the positive change in the dependent variable, *i.e.*, ROE.

Partial regression coefficient of capital turnover ratio (X2) is no doubt, positive but it is relatively less when compared with the coefficients of other independent variables with the positive partial regression coefficients. Therefore, the firm has to improve the capital turnover ratio.

CONCLUSION

In view of the research results evinced from the study, it is concluded that an optimum debt equity mix with an eye on reaping positive financial benefits from financial leverage and productive utilization of invested operating capital would definitely improve the overall contribution power of the firm in maximizing the shareholders' wealth. These measures lack power to exhibit the extent of the value created from view of point of ultimate owners (Shareholders) of the company. Shareholder value creation has gained momentum as the sole measure of wealth added to the shareholders' funds after meeting the return expected by the shareholders for the sacrifice of their funds. In view of no contributory power of the financial cost

ratio(X3), the firm is suggested to examine the possibility of taking the advantage of the financial leverage.

LIMITATIONS OF THE STUDY

The study is confined to an analysis of five independent variables or value drivers of ROE in the area of finance. Analysis is based on secondary data collected from sample firm for 10years.

SCOPE FOR FURTHER RESEARCH

There is ample scope for undertaking studies relating to analysis of shareholder value drivers by selecting a fair number of sample firms, *i.e.*, inter-firm inter-period analysis or inter-firm intra-period analysis, etc. Further, the studies may also be undertaken by analyzing both micro-value drivers and macro-value drivers at the firm level or software industry level.

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