Relationship between Long Term Debt-to-Equity ratio and Share Price – a study on NSE, INDIA (2007-2010)

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Abstract:

The models most-frequently applied for prediction of the Share Price include the Capital Assets Pricing Model, the socalled CAPM, Market Model, Arbitrage Pricing Model, and the Factor Model. The empirical studies carried out on the factors and variables affecting the Share Price demonstrate that there exist numerous variables capable of predicting the Share Price with greater precision. Included among such variable is Long Term Debt-to-Equity ratio. Financial statements are widely used by stakeholders to assess the economic value of firms on the assumption that accounting numbers have a certain relationship with equity market values. The present study has aimed at describing the relationship between accounting variables, Share Price, Ratio

Introduction:

Accounting plays a significant role within the concept of generating and communicating wealth of companies. Financial statements still remain the most important source of externally feasible information on companies. The models most-frequently applied for prediction of the Share Price include the Capital Assets Pricing Model, the so-called CAPM, Market Model, Arbitrage Pricing Model, and the Factor Model. The empirical studies carried out on the factors and variables affecting the Share Price demonstrate that there exist numerous variables capable of predicting the Share Price with greater precision. Included among such variable is Long Term Debt-to-Equity ratio. An important variant of this type of research has become known in the literature as relating to the 'value relevance of accounting variables'. This study has aim at identifying the variable affecting the Share Price in(NSE).

Review of the Literature:

Sinaei. H (2010) The purpose of this research is determining and empirical testing of fundamental variables role in a collection of selected models of stock evaluation. In this research we are trying to test five regression models: economic value created (EVC), EBO simplified model, P/E model, P/S model and P/B model. In each model the effect of independent variables on dependent variable as well as the coefficient of determination (R2) and relative importance of each independent variable were tested empirically. The period of this research is three year from 2001 to 2004 and its statistical population is all companies listed in Tehran Stock Exchange (TSE) that their stock has been exchanged in the mentioned time period in TSE.

Meyer (2007) Accounting plays a significant role within the concept of generating and communicating wealth of companies. Financial statements still remain the most important source of externally feasible information on companies. In spite of their widespread use and continuing advance, there is some concern that accounting practice has not kept pace with rapid economic and hightechnology changes which in invariably affects the value relevance of accounting information.

The importance of Meyer's assertion is reinforced by massive accounting fraud in developed countriesespecially US, rapidly changing business environment and reports by some researchers that value relevance of accounting information has declined (Lev and Zarowin, 1999and Francis and Schipper, 1999).

However, a number of researchers claim that accounting information has not lost its value relevance (Vieru, Perttunen and Schadewitz, 2005 and Collins, Maydew and Weiss, 1997).

Bhandari. R, Galabe. S. A and Ngucko.K . L(2006) Despite the increase in the global trend in R&D cost especially in the manufacturing and pharmaceutical industries, the two main standards setting bodies still maintain controversial treatment of this intangible. This thesis has as purpose to explore the relationship existing between R&D cost, Earnings and stock price of manufacturing and pharmaceutical companies. With the help of a developed model, the authors use primary and secondary data collected, to clearly demonstrate this relationship using simple correlation and regression analysis. Questionnaires were sent to all four companies and the answers gotten from interviews were reviewed. The results supports a direct correlation between R&D cost and earnings and an indirect correlation between R&D cost and stock prices as postulated in our model. The variables are highly influenced by the lag period. It was realized that R&D spending is vital for the survival of this companies with that of pharmaceuticals being inevitable. Besides the economic benefits, investment in R&D cost is relevant for maintaining competent human resource, and goodwill appreciation.

Anderson. K. (2005) The price-earnings effect has been thoroughly documented and widely studied around the world. However, it has always been calculated on the basis of the previous year's earnings. We show that the power of the effect has until now been seriously underestimated, due to taking too short-term a view of earnings. We look at all UK companies since 1975, and using the traditional P/E ratio we find the difference in average annual returns between the value and glamour deciles to be 6%, similar to other authors' findings. We almost double that gap by calculating P/E ratios using earnings averaged over the last eight years. Averaging, however, implies equal weights for each past year. We widen the gap further by optimising the weights of the past years of earnings in the P/E ratio. Graham and Dodd (1934) suggested that multiple years of earnings should be used to assess the long-term value of a company. However, whether multiple years of earnings are more useful than earnings from the most recent year in predicting returns has not, to our knowledge, been investigated until now. Our results are clear: multiple years of earnings are a better predictor of returns than the traditional one-year P/E. An eight-year average is twice as effective.

Lewllen (2004) studied the dividend yield, BV to MV ratio as well as P/E ratio in the companies listed in New York Stock Exchange. To calculate the stock return, he used the data applicable to the years 1946-2002, a period which was divided into two sub-periods of 1946-1972 and 1973-2000. He obtained some reliable evidences as for the prediction power of the dividend yield in the period of 1946-2000. However, the evidences he collected with respect to BV/MV as well as the P/E ratio were not reliable to some extent demonstrating that they generally had a limited prediction power.

Lam (2002) observed that Beta was not apparently capable of explaining the average stock return in Hong Kong Stock Exchange in the period of1984-1997. This finding is compatible with the earlier research findings. However, it so seems that the three variables including the size, BV/MV and P/E ratio can explain the cross-sectional changes in the stock return average during the said period.

Dreman(1998) provided evidence of both size and P/E effects, although the P/E effect seemed more pronounced than the size effect. They divided companies on the Compustat tapes from 1970-1996 into both P/E and market capitalisation quintiles. Returns increased monotonically as the P/E decreased and as the size decreased, giving, for example, 18.6% returns for companies in the low P/E quintile with market capitalisations between \$100m and \$500m, compared to only 8.7% returns for companies larger than \$5bn in the highest P/E quintile.

Lakonishok, Schleifer and Vishny (1994) ('LSV' hereafter) defined value strategies as buying shares with low prices compared to some indicator of fundamental value such as earnings, book value, dividends or cash flow. They looked at stock prices between 1963 and 1990, and divided firms into 'value' or 'glamour' stocks on the basis of past growth in sales and expected future growth as implied by the then-current P/E ratio. They found that the differences in expected future growth rates between the two types of share, as shown by P/E ratios, were consistently overestimated by investors. Glamour stocks grew faster for the first couple of years but after that the growth rates of the two groups were essentially the same. Value strategies using both past low growth and low current multiples outperformed glamour strategies by an impressive10-11% per year. Among the various measures of fundamental value, P/E did not produce as large an effect as Price-to-book value or price-to-cash flow, possibly because "stocks with temporarily depressed earnings are lumped together with well-performing glamour stocks in the high expected growth/low E/P category. These stocks with depressed earnings do not experience the same degree of poor future stock performance as the glamour stocks, perhaps because they are less overpriced by the market." (page 1550). LSV argued that such strategies provide higher returns because they exploit the sub-optimal behaviour of investors. They found little, if any, support for the view that value strategies were fundamentally riskier. Value stocks outperformed glamour stocks quite consistently and did particularly well in 'bad states of the word.'

Fama and French (1992) observed that the positive relationship established earlier to be existing between Beta and the average stock return, was the product of the negative correlation between Size and Beta. However, when this correlation was taken into consideration, the relationship between Beta and stock return disappeared. With respect to other variables, Fama and French concluded that there existed the greatest relationship between BV/MV ratio and size. Under such circumstances, when these two variables were introduced, the prediction power of other variables reduced to a great extent, and the cross-sectional stock return average may simply be explained by these two variables.

Reinganum (1981) first noted the fact that small companies give better returns on average than larger companies, and he concluded that the P/E effect was in fact due to a small-cap effect; low P/E stocks only beat the market because small companies generally displayed low P/E ratios.

Nicholson (1960) considered 100 mainly industrial stocks over five-year periods from 1939 to 1959. Portfolio of lowest P/E quintile stocks, rebalanced every five years, would have delivered an investor 14.7 times his original investment at the end of the twenty years, as compared to 4.7 times for the highest P/E quintile. In 1968 Nicholson extended his earlier work by looking at the earnings of 189 companies between 1937 and 1962. Dividing companies into five groups by P/E ratio, he found that average returns over seven years were 131% (12.71% per annum) for companies with a P/E below ten, decreasing almost monotonically to 71% (7.97% per The annum) for those with a P/E over 20. He concluded: The purchaser of common stocks may logically seek the greater productivity represented by stocks with low rather than high price earnings ratios.

Hypothesis:

There is significant relationship between Long Term Debt-to-Equity ratio and Share Price.

Methodology

The present study has aimed at describing the relationship between accounting variable with the Share Price using the cross sectional - correlation.

The statistical population study in this research includes all companies listed in NSE companies which have the following condition:

1. They have been a member of NSE Market in a period from 4-year 2007 to 2010.

2. The fiscal year of the companies should have ended at March 31.

3. The stock of the companies should have been traded in the entire period of study.

4. Companies which are classified in service industries financial and insurance services (financial and investment company) are not considered in the population. According to Fama & French (1992) the relationship between the value and accounting variable are different for these companies.

5. The Sample of this research has been determined through not replacing sampling method.

6. According to this method, sample size determine as 317 companies.

Method analysis consist of hypothesis such as Correlations, Pearson correlation, Regression, multiple correlation coefficient, ANOVA, with the help of SPSS(16) and the relevant statistical tools will be adopted to arrive at meaningful conclusions.

Finding :

1. The multiple correlation coefficients between the variables of Long Term Debt-to-Equity ratio in four years and share price is equal to:

R=.11 and R2=0 that indicates that Long Debt-to-Equity Ratio in four years couldn't specify the percentage of the share price. The amount F resulted from ANOVA's model in the direction of the meaningfulness of regression is equal to .144 which from the statistical viewpoint has no sense.

Table -2: multiple coefficients of correlation between Long Term Debt-to-Equity ratio and share price

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.011 ^a	.000	.000	945.07131

a. Predictors: (Constant), Long Term Debt Equity Ratio

Table -3: ANOVA between Long Term Debt-to-Equity ratio and share price

Model		Sum of Squares	D f	Mean Square	F	Sig.
1	Regression	129016.376	1	129016.376	.144	.704 ^a
	Residual	1.131E9	1266	893159.788		
	Total	1.131E9	1267			

- a. Predictors: (Constant), Long Term Debt Equity Ratio
- b. Dependent Variable: Share Price
- c. Weighted Least Squares Regression Weighted by Year

As it is seen in the table no., the Pearson Correlation shows that there is meaningful relationship between Long Term Debt to Equity Ratio and share price in the year 2007(R=.129) , in the year 2008 (R=.223) and for both years in the level of P<5%.

Table yearly:
Table -10: Pearson's Coefficient of Correlations between Long Term Debt Equity Ratio and share
price

Years	of study		Share Price	Long Term Debt Equity Ratio
2007	Share Price	Pearson Correlation	1	129 [*]
		Sig.(2tailed)		.022
		Ν	317	317
	Long Term Debt Equity Ratio	Pearson Correlation	129 [*]	1
		Sig. (2-tailed)	.022	
		Ν	317	317
2008	Share Price	Pearson Correlation	1	223 [*]
		Sig.(2-tailed)		.126
		Ν	317	317
	Long Term Debt Equity Ratio	Pearson Correlation	223 [*]	1
		Sig.(2-tailed)	.023	
		Ν	317	317
2009	Share Price	Pearson Correlation	1	080
		Sig.(2-tailed)		.156
		N	317	317
	Long Term Debt Equity Ratio	Pearson Correlation	080	1
		Sig.(2-tailed)	.156	
		N	317	317
2010	Share Price	Pearson Correlation	1	065
		Sig.(2-tailed)		.252
		Ν	317	317
	Long Term Debt Equity Ratio	Pearson Correlation	065	1
		Sig.(2-tailed)	.252	
		Ν	317	317

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			Share Flice	Ralio
2007	Share Price	Pearson Correlation	1	129 [*]
		Sig.(2tailed)		.022
		N	317	317
	Long Term Debt Equity Ratio	Pearson Correlation	129 [*]	1
		Sig. (2-tailed)	.022	
		Ν	317	317
2008	Share Price	Pearson Correlation	1	223 [*]
		Sig.(2-tailed)		.126
		Ν	317	317
	Long Term Debt Equity Ratio	Pearson Correlation	223 [*]	1
		Sig.(2-tailed)	.023	
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2010	Share Price	Pearson Correlation	1	065
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		N	317	317
	Long Term Debt Equity Ratio	Pearson Correlation	065	1
		Sig.(2-tailed)	.252	
		Ν	317	317

 Table yearly:

 Table -10: Pearson's Coefficient of Correlations between Long Term Debt Equity Ratio and share price

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Conclusion & suggestion:

The multiple correlation coefficient between the variables of Long Term Debt-to-Equity ratio in four years and share price that indicates that Long Debt-to-Equity Ratio in four years couldn't specify the percentage of the share price. The amount of F resulted from ANOVA's model in the direction of the meaningfulness of regression which from the statistical viewpoint has no sense. As it is seen in the table the Pearson

Correlation shows that there is meaningful relationships between Long Term Debt to Equity Ratio and share price in the year 2007 and 2008 for both years in the level of P<5%.

The yearly models of the multiple variable has more ability for specification than the periodical multi yearly models and therefore the analyzers and the investors had better use the further samples companion with further time periods for predicting the price of the share. One probable reason for this issue is that changes in the macro economic conditions. Also, as a result of the instability of the relationships between each of variables and share price in the course of time ,it is required to avoid unnecessary emphasis on some variables and a collection of variables-that at any time can reflect the situation of the company-should be used.

The suggestion is the repetition of this research with a sample of the companies that has the highest number of transactions in the stock exchange market.

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