Impact of Leverages on Share Price: Evidence from Cement Sector of Pakistan

Arslan Iqbal
Lecturer, Government Degree Boys College K.M.C Store Nishter Road, Karachi
M. Phil Fellow, Department of Commerce, University of Karachi

Hasan Raza
Assistant Professor, Department of Commerce, University of Karachi, Karachi, Pakistan

Muhammad Farrukh
Lecturer, Department of Commerce, University of Karachi

Muhammad Mubeen
M.Phil(Finance) Scholar, Department of Management, Bilkent University, Ankara, Turkey

Abstract:
This paper examines the impact of different leverage measures on the share price of Cement Sector in Pakistan Stock Exchange. The panel-data approach of fixed effect & random effect is used during the period of 2005 to 2015. To achieve the purpose of research share price is considered as a dependent variable. The results indicate that debt ratio and degree of financial leverage is negatively determining the share price while size has significant positive impact on the share. Debt to equity ratio is insignificant in effecting share price.
Keywords: share price, leverage, debt ratio,

Introduction:

Share price determination is a paradoxical task because it is very sensitive to various internal and external factors. Shareholders and managers are keen interested in factors effecting share price. Various studies are made on determinants of share price Iqbal et al. (2014) & Hashemijoo et al. (2012), impact of macroeconomic variables on the share price. Mohammad et al. (2009) and Sunde and Sanderson (2009), assorted studies are conducted on effect of capital structure on firm`s value. Varied researchers are made on the impact of capital structure on share price Buigut et al. (2013) & Barakat (2014). Partially share price depends on Capital structure of the company, so share price is a primary matter of interest for both internal managers of firm and external stockholders. Capital structure is the combination of equity and debts. If a company uses hundred percent equity so all the earnings after tax go to shareholders. If a company uses a combination of equity & debt both, so interest expense must be allocated to creditors from earning before tax then remaining is allocated to shareholders. Firms should set target capital structure where firm get stable share price and great future prospect. According to Brigham & Houston, if debt ratio is below the optimum level firm should increase debt on the contrary if debt ratio exceeds optimum so, a firm should rely on equity.

There are different leverage measures such as debt ratio, debt to equity ratio and a degree of financial leverage which uses a debt as proxy for leverage. The present study is an attempt to identify the impact of different leverage measures on the share price. The present study comprised on three sections. Section I comprised on an objective of the study and review literature. Section II deals with data collection, econometric model, and research methodology. Section III consists of descriptive statistics, correlation analysis, and regression results. Section IV committed to the discussion of conclusion.

Section I:
1.1 Objective & Significance of the Study:
The purpose of the study is to conduct the following analysis on leverage measures:
- ➢ To analyze the impact of debt ratio on share price
- ➢ To analyze the impact of degree of financial leverage on share price
- ➢ To analyze the impact of debt to equity ratio on share price
- ➢ To analyze the impact of size on share price

1.2 Literature Review:
Literature review consist of two parts first based on capital structure theories and a second one based on empirical studies made in different countries and sectors around the world.

Modigliani and Miller (1958) argues that there is no impact of capital structure on share value of a company. They suggested that capital structure decisions are irrelevant under their assumptions of no tax, no

bankruptcy cost, symmetric information and uniform interest rate for firm and individual. Sunder and Myers (1999) suggests that Pecking order theory portrays that debt financing should be the secondary source of finance for a company because profitable firms mostly rely on retained earnings. They argued that firm avoids equity as possible for it because of flotation cost. So, company tends to choose debt financing on equity financing because of a low acquiring cost of debt. However, manager prefers retained earning on debt financing on account of high cost.

Chowdhury et al. (2010) also conduct study on 77 non-financial firms of Bangladesh during period a of 1999 to 2003.The study used time series regression model. They believe that long-term debt to total asset has positive but insignificant impact on the share price.

Hussain et al. (2011) study revealed the impact of capital structure on share price of cement sector of Karachi Stock Exchange. They used multiple regression analysis on the data of eleven cement companies. They found that capital structure has negative impact on share price. Nirmala et al. (2011) used a fully modified least square method and found that leverage has significant positive impact on share price.

Uwuigbe et al (2012) studied the determinant of share price. The study comprises on 30 listed firms during the period of 2006 to 2010 in Nigerian stock market. They found that dividend payout and financial leverage are strong determinants of the share price.

Buigut et al (2013) used multiple regression model for the impact of capital structure on the share price in energy sector of Kenya. They concluded that debt & gearing ratio have significant positive and equity has significant negative impact on share price. It looks that debt is more attractive for Kenyan investors because a market is not saturated according to debt. Elangkumaran.P & Nimalathasan.B(2013) stated that there is no significant relationship between share price and degree of financial leverage.

Barakat (2014) examined the impact of financial leverage on market value of share price from 2009 to 2012 on Saudi industrial companies. He observed that leverage which used as a proxy for debt ratio has insignificant and weak negative relationship with share price. The author further argues that long-term liabilities to total asset have statistically significant in determination of share price in Saudi industrial companies. Abdullah et al (2015) analyzed selected manufacturing firms of Bangladesh. They revealed that leverage is significant negatively and size is significant positively impacting on stock returns in overall industrial data.

1.3 Data Collection & Research Methodology:

The study explores the impact of different debt measures on the share price of cement sector of P.S.E (Pakistan Stock Exchange) formerly, K.S.E (Karachi Stock Exchange). The data is collected from annual reports of all companies belongs to cement sector. The study uses eight year`s panel data ranging from 2005 to 2015. Closing share prices are collected from Karachi Stock Exchange`s official data. Descriptive statistics, correlation matrix and multiple regression model is employed to investigate the empirical relationship and to draw a conclusion. Hence, it's a panel data approach so fixed effect and random effect model are used to control all the stable attributes of the companies included in the study of over a fixed period of time. For this purpose market value used as dependent variable and debt ratio, debt to equity ratio and degree of financial leverage used as different measures of leverage. While size used as controlled variable. We build our econometric equation as follows:

$$SP_{it} = \beta_0 + \beta_1 DR_{it} + \beta_2 SIZE_{it} + \beta_3 DTOE_{it} + \beta_4 DFL_{it} + u_{it}$$

$$i = 1, \ldots \ldots, n \qquad t = 1, \ldots \ldots, t$$

Description of the above variables used in the equation is as follows:

Share Price (SP): Share price is used as dependent variable in said equation. It is collected on yearly basis for all the companies included in the study.

Debt Ratio (DR): Debt ratio measures the proportion of capital structure based on debt. It can be calculated by dividing total debts with total assets.

Size (Size): Size is a control variable which represents the volume of business. There are various proxies for size such as a log of total asset, log of sales, asset turnover etc. In this study log of a total asset used as a proxy for estimation of firm size.

Debt to Equity Ratio (DTOE): The D/E ratio explains how much debt is used by firm to fund its assets relative to the amount of value depict in equity. It can be calculated by dividing total debt with total equity.

Degree of Financial Leverage (DFL): Degree of financial leverage based on debt used in the capital structure. It depicts percentage change in earning before tax resulting from percentage change in earnings before interest and tax. It can be measured by earnings before interest and tax divided by earning before tax.

Variables	Description	Expected Signs
SP	Market Value of Share	+
DR	Debt Ratio	+/-
SIZE	Log of total assets used as proxy for Size	+
DTOE	Debt to Equity Ratio	+
DFL	Degree of Financial Leverage	+/-

In order to demonstrate a significance of variables, following hypothesis will be tested.

H_1:   There is a positive/ negative relation between share price and debt ratio.

H_2:   There is a positive relation between share price and size.

H_3:   There is a positive relation between share price and debt to equity ratio.

H_4:   There is a positive/ negative relation between share price and degree of financial leverage.

Section II
2.1 Empirical Results:

Table 2.1: Descriptive Statistics for all variables

Variables	Mean	Median	Maximum	Minimum	Std. Dev.
MV	45.66	24.08	519.62	1.29	62.04
DTOE	2.25	1.21	24.00	0.18	3.36
DFL	1.29	1.08	26.96	-12.00	3.49
DEBTR	0.58	0.56	1.64	0.15	0.24
SIZE	7.10	7.10	9.96	6.13	0.49

Table 2.1, postulate the descriptive statistics regarding all the variables used in the model. The data belongs to 17 cement companies listed in K.S.E during the period of 2005 to 2015. A sum of 170 observations was analyzed for investigation. It is found that average share price of cement industry came to 45.66. However, share price shows a huge volatility of 62.04% with a range of 1.29 to 519. Data of market value shows that K.S.E`s market is inconsistent subject to steep changes in share prices. The mean value of debt ratio is 0.58; it implies that cement companies believe in high leverage with a low standard deviation of 0.24. Furthermore, the average of DFL is 1.29 reveals that one percent change in EBIT cause 1.29 times changes in earning before tax. This leverage is favourable in increasing trend of company`s sale. While in decreasing trend leverage may negatively hurt the profits and returns of shareholders. The mean size of firm found by a logarithm of total asset came to 7.10.

Table 2.2: Correlation Analysis

Variables	MV	SIZE	DTOE	DEBTR	DFL
MV	1.000				
SIZE	0.260	1.000			
DTOE	-0.177	0.083	1.000		
DEBTR	-0.341	0.023	0.569	1.000	
DFL	-0.063	-0.086	-0.066	-0.051	1.000

Table 2.2, represents the association amid all explanatory variables i.e. market value, equity ratio, debt ratio and degree of financial leverage and dependent variable namely market value. This table illustrates that market value has weak positive relationship with size while it hold weak negative relationship with debt ratio and DTOE. Relationship of MV with DFL suggests the negative association. Overall correlation among explanatory is seemed to be very low, it indicates that assumption of no multicollinearity is valid in this model.

Table 2.3: Regression Results

Variable	Fixed Effects Model	Random Effect Model
C	-105.582 0.287	-106.032 0.224
DEBTR	-114.559 0.000*	-117.537 0.000*
DFL	-15.940 0.003*	-15.655 0.003*
DTOE	1.286 0.450	1.305 0.437
LOG(SIZE)	30.739 0.027*	30.566 0.0119*
Hausman Test	0.258 0.992	
R-square	0.550	0.220
Adj R-Square	0.478	0.198
Prob(F-statistics)	0.000	0.000

Table 2.3 portrays the outcomes of fixed effect and random effect model and significance of variables used in the model. To identify an appropriate model, we employed Hausman specification test which validates the random effect model since the p-value is insignificant and rejects the alternate hypothesis that company`s specific effects are uncorrelated.

The random effect model presents that debt ratio and degree of financial leverage is negatively significant at less than five percent level. This suggests that one percent change in debt ratio and DFL cause -117.53% and -15.66% changes in market value. Results also indicate that size is significant at 5 percent level with market value. Conversely, debt to equity ratio found insignificant in an estimation of the share price.

The study found that debt ratio is negatively significant in effecting share price. These findings are in line with Buigut et al (2013) and Hussain et al. (2011).From the results of above table, it is also found that coefficient of size is positively significant at 1% in impacting share price. Same findings of size being significant in impacting share price is found by Chowdhury et al. (2010), Nisa & Nishat(2012) and Abdullah et al (2015). Furthermore, a result of debt to equity ratio is found insignificant. The results are against the findings of Abdullah et al. (2015) because they found significant relation amid price and debt to equity ratio.

Conclusion:

The study investigates the impact of different leverage measures on the share price in K.S.E`s cement sector companies. For this purpose different leverage measures such as debt ratio, debt to equity ratio and degree of financial leverage are regressed with share price. Model is also expanded by adding size as a control variable because it also impacts on the share price. We applied fixed effect and random effect model. The result of the study is in line with those of some prior studies. We can conclude the study as:

I. Random effect model is significant for this data.
II. Debt ratio and degree of financial leverage have significant negative impact on share price.
III. Size is found significant in impacting share price.
IV. Results suggest that more debt is not beneficial for a market value of share. It also indicates that pecking order theory is not applicable for cement sector. Because average debt ratio may cross optimum point.

There is a direction for further research in an area to identify optimal debt ratio which maximizes the firm value.

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