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Determinants of Return on Equity: Evidence from the Cement Industry of Pakistan

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Abstract

In the current era according to the floating industrial ratings the top most industry of Pakistan is the cement industry. This sector has been able to earn high returns over the investment which has created more interest to determine major factors which are needed to be focused on while evaluating the profitability of the cement companies. DuPont Model was one of the most significant equation presented in 70's which stated that Returns on Assets (ROA) is to be considered for evaluating firm's performance but later the researchers figured out that Return on Equity (ROE) is the major factor which should be considered for assessing profitability and growth of the company. The purpose of the study is to investigate the most influencing factors which affect the Returns on Equity (ROE) for the cement sector of Pakistan. Data from 2006 to 2015 is taken for the analysis from annual reports of 03 listed cement companies in Pakistan Stock Exchange. Regressions model with the Panel Least Squares method and Period random effects will be used for the measurement of the data. The results of this research will be beneficial for future researchers who aim to focus on investigating the determinants of the Return on Equity (ROE). The study will also describe the impact of various financial ratios on ROE which will also assist cement companies to work on their full potential and acquire large market share which will ultimately result in better profitability. The research is concluded with the recommendations and suggestions for the selected companies and this study provides tool for companies to identify the main factors of the return on equity.

Key Words: Cement Industry, Return on Equity, Profitability, Financial Ratios.

Introduction

In the general the most common purpose of any business is to earn good revenue and high profits, it has been observed that there is a complexity in calculating the profitability and to compare it with the other's profits within the industry. If we talk about the Analysis of Financial Statements specially the topic of trend analysis so we can easily compare the profitability of the firms within the industry. According to the base researches the profitability can be measured by some factors for the interpretation of which the elements of balance sheet and income statement are integrated.

During the last decades the common goal for the corporate was to maximize their ROA and obviously ROA is always influenced by profitability and operational control and this was the dominant financial analysis since last four decades. (Blumenthal & Robin, 1998)

The general motive of the financial managements have been changed as the first is to maximizing the wealth of the company and the secondly the motives has shifted from ROA to ROE, this led to the first major modification of the original DuPont model. If we talk about the returns so the on the ROE so we have some factors which became a concentration for the financial managers now a days.

The DuPont model have some modifications and it has also been observed by the different financial analysis that the Returns on Equity has many different factors by improving which the company's profitability and efficiency can be increase by this ratio and in this research the researcher is trying to find the major factors which have a vast and most significant impact on ROE. (Mubin, Iqbal, & Hussain, 2014).

Statement of the Problem:

Generally the performance of the companies is evaluated by the profitability but the main concentration in this regards is returns of the company on equity and it has been observed from the last decades that ROE has been considered for profitability rather than ROA, so the ROE has some factors which have a major influence in the variation of profitability of the cement companies of Pakistan, the study will investigate that very factors.

Objectives of the Study:

To determine factors influencing variation in the profitability of the companies associated with the Cement Sector.

Limitations:

The only limitation of time period as it was only about 1.5 month which is too short to do work on the large scale.

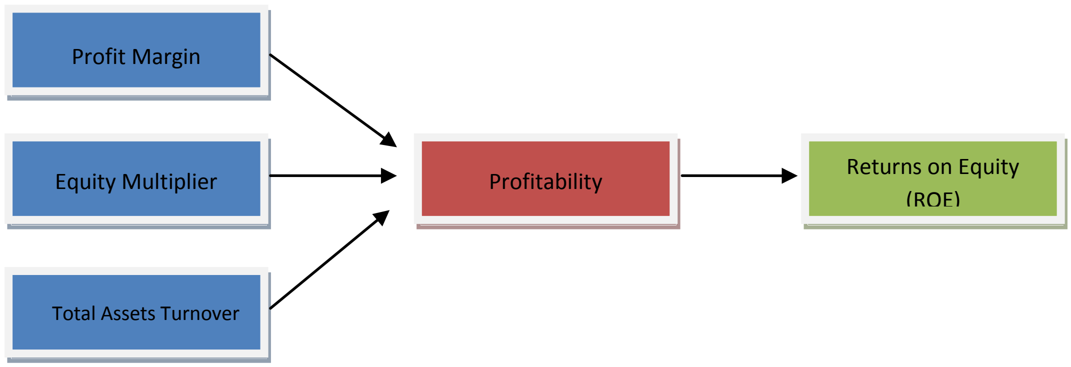
Scope:

1. The future researchers can use the research.
2. It will be helpful for the cement industries to find out the actual factors behind the profitability.

Research Questions:

- What are the top most factors among all three factors?
- Is the possible factors of ROE varies industry wise?
- What are the outstanding roles of the selected factors in the variation of Profits?

Research Model:



Hypothesis:

H1A: Profit Margin is an influencing factor for the Returns on Equity (ROE).

H1O: Profit Margin is not an influencing factor for the Returns on Equity (ROE).

H2A: Total Assets Turnover (TAT) has an impact on Returns on Equity (ROE).

H2O: Total Assets Turnover (TAT) has not an impact on Returns on Equity (ROE).

H3A: Equity Multiplier (EM) influences Returns on Equity (ROE).

H3O: Equity Multiplier (EM) doesn't influence Returns on Equity (ROE).

Literature Review

Saleem & Rehman (2012) found that the oil and gas companies with high leverages generally have lower profitability, but they were failed to prove the positive relationship between financial leverage and profitability. They were also tested that there is more risk in terms of ROE and investment in highly leveraged businesses but the results were opposite to their claim that the highly leveraged firms were less risky in both market-based and accounting-based measures.

Other researchers Taani & BanyKhaled (2011) conducted the study to investigate the relationship between the cash flow and profitability. They developed the model which includes earning per share as a dependent variable and 08 financial ratios as independent variables. To find out the relationship they used regression analysis through which they concluded that financial ratios, price to book value, debt to equity, return on equity and cash flow from operating activities altogether affect earnings per share.

To get rid of the financially worst from the portfolio of borrowers the two said sources were considered, the leaving out of the subsidies and cost recovery would only force MFIs because poorest are precisely the most solid and costly to attend. (D & P, 2000). Exclusively of aids and grants return of equity is measured with respect to net income and the findings of the study in actual relates with the return on equity, due to the low level of leverages the MFIs make less return on equity compared to commercial banks in growing countries. The predictable measure of success is return on equity. The industrial income turnover is improving with respect to the time and ROE is the measuring factors for MFIs that are operational sustainable.

There are three proportions about ROA, furthermore ROE together demonstrated a solid What's more certain relationship for offer costs for 45.7% association. He likewise attempted will identify the singular impact from claiming ROA, roe Furthermore ROE Also succeeded in finishing up that ROA Furthermore ROE need certain Anyway low relationship with market share cost anyway fizzled will get those relationship from claiming roe for business sector impart cost separately. To this they detract information starting with jordanian protection general population organizations for those time from claiming 2002 on 2007. (Majid, Ali, Dahmash, & M, 2012)

Qadir & Rehman (2012) have hypothesized that there is lower profitability of the oil and gas companies which have highly leverages. However, they were unsuccessful to prove the positive relationship between profitability and financial leverage. They also investigate that highly leveraged businesses are riskier in terms of their investments and return on equity, the results were against to the phenomena that highly leveraged firms were less risky in both accounting-based measures and market-based.

Pricing strategy of the management is reflected through the net profit margin that shows the income from a solitary financial unit, how the company utilizes its monetary assets is determined with the help of asset turnover and finally how a company uses debt to finance its assets is determined by the last factor, equity multiplier. The company to a better extent is financed by debt is due to the higher this ratio, the higher the financial leverage. The three attributes – productivity, profitability and leverage are integrated by the Three-Step DuPont model that means the investors return on equity is influence by these three aspects. Without serious decreasing in the other ratios the one or two raise with the help of various courses of action as the objective of the firm financial strategy is to maximize the ROE in the long run. The possible strategies can be determined by observing changes in the value of these three factors. Although rarely company performs only one strategy; usually it is combination of two or three strategies (Primljeno & Strukovni, 2016).

The pioneers of capital structure research Franco Modigliani and M.H.Miller (1958) demonstrated that a firm cannot increase its value by using leverage as a part of its capital structure. Following their research more number of researches has taken place in this area. Supported the traditional view that shareholder wealth is enhanced by the firm’s judicious use of fixed commitment financing, the determinants of capital structure are reported that debt levels are negatively linked to the ‘uniqueness’ of a firm’s line of business. It has been analyzed the determinants of capital structure of Japanese companies and concluded that profitability is the most significant determinant of capital structure. The most critical factors that influence the capital structure of a company are liquidity, size efficiency, and growth, quality of assets, profitability and service diversification. The corporate capital structure in India and reported that, return on equity is the significant factor which is linked with debt equity ratio. The most important determinants of capital structure of Indian companies. The study identified that profitability, growth, asset tangibility, size, cost of debt, tax rate and debt serving capacity have significant impact on the leverage structure of the Indian companies. The Government policies have been changed in the post liberalized era, competition and environment which influence the performance of a company. To study the corporate capital structure in the post liberalization period is the purpose of this study. (Pandian & P, 2015)

Mubin, Iqbal, & Hussain (2014) find out in their research that rather than the other indicators the improved predictor of the financial performance of the companies is price to earnings ratio. For this purpose they evaluate twelve indicators of 86 companies which were related to financial as well as market indicators. Return on equity cannot completely indicate the profitability of a company. There are many other variables which are associated with return on equity such as earning per share, return on assets and return on investment, price to earnings ratio and return on assets. Moreover, it is also find out that profitability ratios, cash flow from operating activities, market value ratio and leverage ratio are consistently significant on earning per share.

Methodology

In this Research secondary source of information has been used in order to generate appropriate data. To give the strong support to the research model many of the research articles and research papers have been referred in this report which shows the significant factors of Return on Equity in Cement Companies. To defend the Hypothesis developed here in this report secondary data were collected through the official websites of Attock Cement, DGK Cement & Kohat Cement with the intention of getting financial data the annual reports were taken.

The data gathered was tested for Hypothesis with the help of EViews and Regression with the Panel Least Squares method and Period random effects method was used as a Statistical tool to reach some concrete conclusion.

Sample Design

Population

All Cement Companies listed in Pakistan Stock Exchange.

Sample

Three top most companies with respect to their market capitalization.

Data Collection Methods

Data collection for research is based on secondary data.

Secondary Data Gathering

- Website of Attock Cement.
- Website of DGK Cement.
- Websites of Kohat Cement.
- Website State Bank of Pakistan.
- Financial Research Journals.

Statistical Tool and Software for Data Analysis and Processing

Standard statistical techniques are used to organize and analyze the data and to generate some meaningful results from the data gathered.

Statistical Tool

These standard statistical techniques are used to analyze different hypothesis.

- Regression (Panel Least Squares method and Period random effects method)

Software

E-Views software is used for processing and analyzing of data.

Research Findings:

With respect to companies

Dependent Variable: ROE
Method: Panel Least Squares
Date: 03/13/16 Time: 13:18
Sample: 2006 2015
Periods included: 10
Cross-sections included: 3
Total panel (balanced) observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.941375	7.341334	-0.128229	0.8990
PM	0.601110	0.137033	4.386612	0.0002
TAT	25.06510	6.054087	4.140196	0.0004
EM	-4.309760	2.339908	-1.841850	0.0779

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.900666	Mean dependent var	14.91833
Adjusted R-squared	0.879972	S.D. dependent var	15.62346
S.E. of regression	5.412766	Akaike info criterion	6.392254
Sum squared resid	703.1527	Schwarz criterion	6.672493
Log likelihood	-89.88381	Hannan-Quinn criter.	6.481905
F-statistic	43.52188	Durbin-Watson stat	1.129012
Prob(F-statistic)	0.000000		

According to the above results the significance value of Profit Margin (PM) is 0.0002 and the significance value of Total Assets Turnover (TAT) is 0.0004 both of the values are less than 0.05 and the t-values of both the variables are greater than 2 which means the PM & TAT have an significant impact on the ROE among all three selected cement companies. The significance value of Equity Multiplier (EM) is 0.0779 which is greater than 0.05 and t-value is less than 2 which implies that there is no effect of EM on the ROE in all three companies.

With the consideration of the above results the **H1o** and **H2o** are rejected and the **H3o** is accepted.

As per the conclusion the trend of PM& TAT is same in all three companies within a cement industry while the EM has different effects with respect to cross sections.

With respect to time

Dependent Variable: ROE
Method: Panel EGLS (Period random effects)
Date: 03/13/16 Time: 13:21
Sample: 2006 2015
Periods included: 10
Cross-sections included: 3
Total panel (balanced) observations: 30
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-12.49948	5.487837	-2.277670	0.0312
PM	0.851239	0.147133	5.785516	0.0000
TAT	21.71848	4.270167	5.086097	0.0000
EM	1.307576	1.856207	0.704434	0.4874

Effects Specification

	S.D.	Rho
Period random	0.000000	0.0000
Idiosyncratic random	6.845328	1.0000

Weighted Statistics

R-squared	0.851269	Mean dependent var	14.91833
Adjusted R-squared	0.834108	S.D. dependent var	15.62346
S.E. of regression	6.363418	Sum squared resid	1052.820
F-statistic	49.60400	Durbin-Watson stat	1.027198
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.851269	Mean dependent var	14.91833
Sum squared resid	1052.820	Durbin-Watson stat	1.027198

According to the above results the significance value of Profit Margin (PM) is 0.0000 and the significance value of Total Assets Turnover (TAT) is 0.0000 both of the values are less than 0.05 and the t-values of both the variables are greater than 2 which means the PM & TAT have an impact on the ROE with respect to time among all three selected cement companies. The significance value of Equity Multiplier (EM) is 0.4874 which is greater than 0.05 and t-value is less than 2 which implies that there is no effect of EM on the ROE in all three companies according to the different periods.

With the consideration of the above results the **H1o** and **H2o** are rejected and the **H3o** is accepted.

As per the conclusion the trend of PM& TAT is same in all three companies as there is a continues impact with the changing in the time period as it is proved with the period random effect method while the EM has an impact it changes with the huge variation with respect to time period.

Conclusion & Recommendations

This research has analysis of impacts of Profit Margins (PM), Total Asset Turnover (TAT) and Equity Multiplier (EM) on Return on Equity (ROE).

The study indicates that the Profit Margins (PM) and Total Asset Turnover (TAT) have impacts on the Return on Equity (ROE) as there has not changed observed in the comparison of data with respect to companies and also with respect to the time period. While the Equity Multiplier (EM) has not an impact on the Return on Equity (ROE) and which have the same results in the comparison of data with respect to companies and also with respect to the time period.

Which means that the more considerable factors for the Return on Equity (ROE) are Profit Margins (PM) and Total Asset Turnover (TAT) by improving which the Cement Companies of Pakistan can attain more profits and the Equity Multiplier (EM) is a factor which not cause any effect on the return of the companies, so it is required for the cement companies to consider and work on their total assets as by increasing total assets their financial leverage can be good and by improving their profit margins their returns can be more on the basis of their sales.

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