

THE IMPACT OF FINANCIAL LEVERAGE ON FIRM PERFORMANCE: A CASE STUDY OF LISTED OIL AND GAS COMPANIES IN ENGLAND

Nhung Thi Hong Bui

Department of Finance, Faculty of Accounting and Business Management, Vietnam

National University of Agriculture. Hanoi, Vietnam

nhungbui.hua@gmail.com

Abstract

The study has investigated the effects of debt ratios on the firm performance through employing a data of 99 financial statements of 18 British Gas and Oil companies from 2009 to 2014. There were two dependent variables used in this research including ROA (return on assets), ROE (return on equity), while three independent variables were STD (short term debt to total asset), LTD (long term debt to total asset), TD (total debt to total asset). Besides, the author also used one control variable which is GROWTH (growth of assets). The result revealed that there were strong negative impacts of financial leverage measured by LTD and TD on performances of ROA and ROE, while STD had insignificant effects on ROA and ROE of these firms. Based on the results, the firms having high level of long term debt and total debt tend to show poorer performance of return on assets and return on equity. Hence, In order to obtain a wealthy performance, these firms should consider carefully deciding an “optimal capital structure” where both elements of bankruptcy cost and cost of capital can be minimized.

Keywords: Financial leverage, capital structure, debt ratios, firm performance, Oil and gas industry.

INTRODUCTION

One of the most crucial decision of financial managers is capital structure to maximize the firm value. There are several ways to define capital structure, for examples, capital structure is defined as the balance of debt and equity which is able to be used with the purpose of financing

a firm's assets (Zane Swanson, 2003). While, as found in another research produced by (Kent Baker, 2011), all the sources which are used by a company to finance its assets, its operation and its growth in the future, can be considered as capital structure. In the paper of (TUDOSE, 2012), the author stated that in the financial field the notion of features of capital structure are variously as financing structure or financial structure.

There are two main benefits of debts which has been recognized are “tax shield” and discipline managers introduced by Jensen (1976). More and more there are several of studies examining the relationship between financial leverage and the corporate performance. However, no consensus is recorded in the results of these studies when some of them showed negative association and others revealed a positive correlation or no significant relationship of debt ratios and firm value. This research was going to test the association of financial leverage and performance of listed Gas and Oil companies in England. Following (bbc.co.uk, 2015) poor performances were recorded in the industry of Gas and Oil with price's falling as well as costs increasing in the period of time from 2009 to 2014. The research was going to test the effects of capital structure on the Gas and Oil firm's performances in this period. The hypothesis was supposed that debt ratios tend to affect negatively to performances of Gas and Oil firms. The study had been released with the purpose of providing an evidence of how capital structure is extremely important in firms.

Research objectives

- (1) To discuss the current literature as well as theories in the field of financial leverage and corporate performance.
- (2) To analyze the impacts of debt ratios on the performances of listed Gas and Oil companies in England.

LITERATURE REVIEW

Capital structure theories

The Modigliani – Miller Model (MM): The authors provided two results of relationship between financial leverage and firm's value. The first one was showed with the information of no relationship between them if no taxes, perfected capital market and no bankruptcy cost would be applied. Few years later, they revealed a different outcome that debts could generate positive effects on firm value due to “tax shield” (Kent Baker, 2011).

Trade off theory: The theory of capital structure called Trade off theory was introduced by Litzenberger and Kraus presented that companies are possible to balance the tax advantage from debt (tax saving benefits) against costs of bankruptcy (Miglo, 2016).

Pecking order theory (POT): The theory is extremely influential theory of Myers and Majluf which displayed a theory of “pecking order” of capital structure. Firms which use less debt will tend to be more profitable as well as create sufficient cash flows. In a simple view, firms are likely to employ less risk option before finding a more risky funding option (Eckbo, 2008).

Empirical Evidence

According to (Mahfuzah Salim, 2012), this revealed a negative association between financial leverage and firm value when testing a data of financial statements of 237 Malaysian companies from 1995 to 2011. In this research, return on equity, return on asset, Tobin’s Q and earning per share were used to measure dependent variables. Besides, growth of the firm and debt ratios of short term, long term and total debts to total assets were considered as independent variables of the study.

Following (Mohammad Fawzi Shubita, 2012), the authors given a result of a strong negative relationship of debts and profitability of firms by analyzing a data of 39 Industrial Jordanian companies. Based on the result, it was stated that profitable companies tend to depend more on equity financing rather than debt funding, thus these companies should look for an optimal structure of capital to gain more quality of profitability.

As found in (Abor, 2005), the paper was published to reveal a result of a positive relation between capital structure and profitability with the evidence from Ghana Stock Exchange (GSE) in the five year period.

The research published in 1995 of Roden and Lewell examined how capital structure of 48 American firms affects these firm’s performances. After analyzing, the result was stated that there was a positive correlation of debt ratios and firm value in the sample.

METHODOLOGY

Research approach

The research applied the deductive approach which is considered as a method of progressing a “certain hypothesis” based on already current knowledge as well as existing theory (Saunders, 2009).

Research Hypotheses

H1: Total debt ratio can decrease firm performance

H2: Short term debt ratio can decrease firms’ performance

H3: Long term debt ratio can decrease firm’s performance

Research variables

The *dependent variables* used in this research are return on asset (ROA) and return on equity (ROE) as measurement of profitability's performance of a firm. Whereas, financial leverage ratios are short term debt to total asset (STD), long term debt to total asset (LTD) and total debt to total asset (TD) which are used as *independent variables*. Moreover, based on (Mahfuzah Salim, 2012), growth of a firm is able to affect significantly to firm's performance, thus growth of the firm measured by changes in total assets (GROWTH) should be existed in the model as a *control variable*. It is expected that GROWTH have positive effects on firm performance.

Specification of Model

Linear regression analysis based on (Shashazrina Roslan, 2012)

$$\text{Performance 1: a) } ROE_{i,t} = \beta_0 + \beta_1 STD_{i,t} + \beta_2 LTD_{i,t} + \beta_3 Growth_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$\text{b) } ROE_{i,t} = \beta_0 + \beta_1 TD_{i,t} + \beta_2 Growth_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$\text{Performance 2: a) } ROA_{i,t} = \beta_0 + \beta_1 STD_{i,t} + \beta_2 LTD_{i,t} + \beta_3 Growth_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$\text{b) } ROA_{i,t} = \beta_0 + \beta_1 TD_{i,t} + \beta_2 Growth_{i,t} + \varepsilon_{i,t} \quad (4)$$

Where: STD is "short term debt to total assets", LTD is "long term debt to total assets", TD is "total debt is total assets", Growth is "changes in total assets", ROA is "net income to total assets", ROE is "net income to total equity", ε is the error term, in year t and company I.

Data collection

The research collected secondary data of 99 financial statements from 18 British Gas and Oil companies from 2009 to 2014. The data was provided by FAME organization in United Kingdom.

ANALYSIS AND FINDINGS

As can be seen from the table 1, there was a moderate negative association of ROA and LTD (with $r = -0.29$ and $p=0.003$ meaning significant at confident level of 99.97%). In other word, when a firm raised long term debt, then the return on asset tended be go down.

Similarly, ROA and TD had a modest negative correlation (with $r= -0.27$, $p= 0.006$ meaning of significant at confident level of 99.94%). It means that when a firm increased total debt, return on asset was likely to decrease.

Besides, no significant relationship of STD (short term debt) and ROA (return on asset) was found (due to result of $r = -0.088$ and $\text{sig.} = 0.385$).

Table 1: Correlations of ROA and STD, LTD and TD

		STD	TD	LTD	GROWTH	ROA
STD	Pearson Correlation	1	.851**	-.550**	.030	-.088
	Sig. (2-tailed)		.000	.000	.769	.385
	N	99	99	99	99	99
TD	Pearson Correlation	.851**	1	-.071	-.048	-.274**
	Sig. (2-tailed)	.000		.482	.634	.006
	N	99	99	99	99	99
LTD	Pearson Correlation	-.550**	-.071	1	-.204*	-.293**
	Sig. (2-tailed)	.000	.482		.043	.003
	N	99	99	99	99	99
GROWTH	Pearson Correlation	.030	-.048	-.204*	1	.237*
	Sig. (2-tailed)	.769	.634	.043		.018
	N	99	99	99	99	99
ROA	Pearson Correlation	-.088	-.274**	-.293**	.237*	1
	Sig. (2-tailed)	.385	.006	.003	.018	
	N	99	99	99	99	99

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

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

Besides, table 2 has showed result of testing regression of ROA as a dependent variable and STD, LTD as two independent variables, Growth of assets as a control variable. There was an insignificant negative relationship of STD and ROA due to $B = -0.085$ and significant levels at 99%, whereas a moderate negative association was recorded in LTD and ROA due to $B = -0.244$ and significant levels at 99%. The result proposed that when increasing the level of short term debt and long term debt, firm performance measured by return on assets tended to decrease. In other words, when short term debt increased 1%, return on asset tended to reduce slightly 0.085% with confident level at 99%. In addition, if long term debt grew 1%, return on asset was likely to go down 0.244 % with confident level at 99%.

Table 2: Regression result of ROA and STD, LTD

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	18.16	2.40		7.56	.000
STD	-.085	.028	-.340	-3.0	.003
LTD	-.244	.062	-.448	-3.9	.000
GROWTH	.081	.049	.156	1.65	.101

a. Dependent Variable: ROA

Table 3 presented the regression of ROA as dependent variable and TD as the independent variable, Growth of assets as a control variable. Table 3 illustrated that TD had a negative effect on ROA with $B = -0.1$ and $\text{sig.} = 0.007$ meaning the confident level at 99.3%. The result demonstrated that total debt ratio rising can lead a reduction of firm performance measure by return on asset. In other words, if the total debt raised 1%, the performance of return on asset tends to reduce 0.1% with the confident level at 99%.

Table 3: Regression result of ROA and TD

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	16.248	2.564		6.3	.000
TD	-.10	.036	-.263	-2.	.007
GROWTH	.116	.049	.225	2.3	.021

a. Dependent Variable: ROA

Similarly, table 4 displays moderate negative correlations of LTD and TD and ROE. In other words, an increase of long term debt and total debt can result in a decrease of return on equity (with presented outcomes $r = -0.2$, $\text{sig.} = 0.04$ and $r = -0.17$, $\text{sig.} = -0.09$ respectively). In contrast, STD and ROE had an extremely weak relationship (with $r = -0.086$ and $\text{sig.} = 0.39$).

Table 4: Correlations of ROE and STD, TD, LTD

		STD	TD	LTD	GROWTH	ROE
STD	Pearson Correlation	1	.851**	-.550**	.030	-.086
	Sig. (2-tailed)		.000	.000	.769	.395
	N	99	99	99	99	99
TD	Pearson Correlation	.851**	1	-.071	-.048	-.171
	Sig. (2-tailed)	.000		.482	.634	.090
	N	99	99	99	99	99
LTD	Pearson Correlation	-.550**	-.071	1	-.204	-.206
	Sig. (2-tailed)	.000	.482		.043	.041
	N	99	99	99	99	99
GROWTH	Pearson Correlation	.030	-.048	-.204	1	.251
	Sig. (2-tailed)	.769	.634	.043		.012
	N	99	99	99	99	99
ROE	Pearson Correlation	-.086	-.171	-.206	.251	1
	Sig. (2-tailed)	.395	.090	.041	.012	
	N	99	99	99	99	99

***. Correlation is significant at the 0.01 level (2-tailed) ** Significant at the 0.05 level (2-tailed)

Table 5 presented the regression of ROE as dependent variable and STD and LTD as two independent variables, Growth of assets as a control variable. It can be concluded that STD and LTD affected negatively to ROE with $B = -0.17$ and $B = -0.44$ and significant at confident levels at 98% and 99% respectively. In other words, when these firms raise financial leverage of 1% long term debt and short term debt, the firm performance measured by return on equity would go down 0.44% and 0.17% respectively.

Table 5: Regression result of ROE and STD, LTD

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	35.790	6.507		5.500	.000
STD	-.171	.075	-.264	-2.295	.024
LTD	-.443	.167	-.311	-2.655	.009
GROWTH	.263	.132	.195	1.992	.049

a. Dependent Variable: ROE

Table 6 displayed the regression result of ROE as dependent variable and TD as the independent variable, Growth of assets as a control variable. Table 6 showed that TD can influence negatively ROE with $B = -0.155$ and $\text{Sig.} = 0.01$. It means that when total debts increase 1%, it can lead to a reduction of firms' performance, measure by return on equity 0.155%.

Table 6: Regression result of ROE and TD

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	29.864	6.836		4.369	.000
TD	-.155	.095	-.159	-1.633	.010
GROWTH	.328	.132	.243	2.489	.015

a. Dependent Variable: ROE

CONCLUSION AND RECOMMENDATIONS

The research has presented the results of examining how debt ratios affect firm's performance. It proposed that in British Gas and Oil industry, companies possessing a high level of short term debt, long term debt and total debt are likely to show poorer performances measured by return on assets and return on equity than that of less debt's firms. When a firm employs more 1% of short term debt, the performance of return on asset can decrease 0.085% and return on equity

can reduce 0.17%. Besides, When long term debt ratio was used more 1%, return on asset goes down 0.24%, return on equity decrease 0.44%. Finally, with each 1% increased total debt, return on asset reduce 0.1% and return on equity fall down 0.15%.

There are some recommendations can be suggested for these firms. Firstly, it is vital for these firms to consider and pick one “optimal capital structure”. In other words, the “best” ratio of debt can satisfy a requirement of minimum cost of capital as well as reduce the bankruptcy cost. Secondly, financial managers should do flexibly in borrowing because debts are able to bring some benefits such as gaining tax deductible expense and then cut down tax burden, but the research’s results also revealed that increase level of financial leverage can affect negatively return on asset and return on equity. As found in (Jie Yang, 2011), the “optimal capital structure” is able to occur when the marginal advantage of debt equal the margin cost of debt, then firm value can be maximized.

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