DOES CAPITAL STRUCTURE INFLUENCE COMPANY PROFITABILITY?

HERCIU Mihaela
Lucian Blaga University of Sibiu, Romania

OGREAN Claudia
Lucian Blaga University of Sibiu, Romania

Abstract:

Every company has a different structure of balance sheet. Some of the companies have more liabilities than equity. Considering the industry or debt-to-equity ratio, the balance sheet structure affects the company profitability measured by DuPont system. The main objective of the paper is to analyze the structure of balance sheet and to identify some optimal levels in order to increase company profitability. The DuPont returns like ROA (return on assets) and ROE (return on equity) will be used to measure the company profitability, while the debt-to-equity ratio will be used as a measure (reflection) of capital structure. The samples consist on the most profitable non-financial companies ranked in Fortune Global 500. The companies will be grouped in clusters (based on industry or debt-to-equity ratio) in order to identify the signification of the correlation between the profit and the balance sheet structure. The main results of the paper refer to the company profitability that can be increased by using an optimal structure of liabilities and equity.

Key words: *capital structure, ROA, ROE, liabilities, equity, company profitability*

1. Introduction

Company profitability is influenced by multiple factors and can be measured in different ways. When we analyze the profitability we have to consider the company`s results/outcomes that are placed into the company`s balance sheet, income statements or cash-flow statements. But, most important profitability ratios are related to the balance sheet because there are presented company`s assets (that represent the company`s wealth), debt and equity (that represent the company`s financing options).

This study was designed to examine if there are significant correlations between capital structure (as it is presented into the balance sheet) and company profitability (measured with DuPont system ratios).

The paper is structured into four parts: the literature review part by considering state of art and developing the research question; the methodology that describes the sample and the variables; the results section where the findings are presented; the conclusion part by summarizing the answer to the research question.

2. Literature review

Every action, activity, function or process at the firm level will influence the firm profitability, positively or negatively, directly or indirectly. Information technology (Stoneman and Kwon, 1996; Mithas et al., 2012), corporate governance (Jon, 2003; Rose, 2016) and ownership structure (Gedajlovic and Shapiro, 2002), working capital (Sharma and Kumar, 2011; Engvist, Graham and Nikkinen, 2014) and capital structure (Abor, 2005; Gill, Biger and Mathur, 2011) represent (along with many other) convergent determinants of firm profitability.

The extensive literature relates firm profitability or firm financial performance to: the DuPont Analysis, more precisely by ROA and ROE (Christensen and Montgomery, 1981; Dewenter and Malatesta, 2001; Cho and Pucik, 2005; Kabajeh et al. 2012; Bockova and Zizlavsky, 2016; Pastusiak et al. 2016; Batchimeg, 2017), on one hand, and to the company capital structure (Abor, 2005; Gill, Biger and Mathur, 2011, Velnampy and Niresh, 2012).

Capital structure is defined as "the specific mix of debt and equity a firm uses to finance its operations" (Abor, 2005, 2008) or as "a mixture of different securities" (Gill, Biger and Mathur, 2011). According to Abor (2008), the relationship between capital structure and firm profitability can be very easy to explain by considering the pecking order theory, that demonstrate the firm's preferences for internal sources of finance instead of external one.

Welch (2009), named the capital structure a financing pyramid in which most of the funding sits in the most senior claims (at the bottom), and very little funding would be equity (at the top).

The optimal capital structure have been investigated or analyzed by many authors or specialists starting with Modigliani and Miller (1958) and Scott (1976) in the early 80' and continuing with others like Myers (1984), Bradley, Jarrell and Kim (1984), Titman and Wessels (1988).

Modigliani and Miler (1958) have suggested that "the capital structure of a firm is a matter of indifference". However, in the same time, they also provided some clarifications: preferring one type of capital structure to another is depending on the investment opportunity and to the cost of capital.
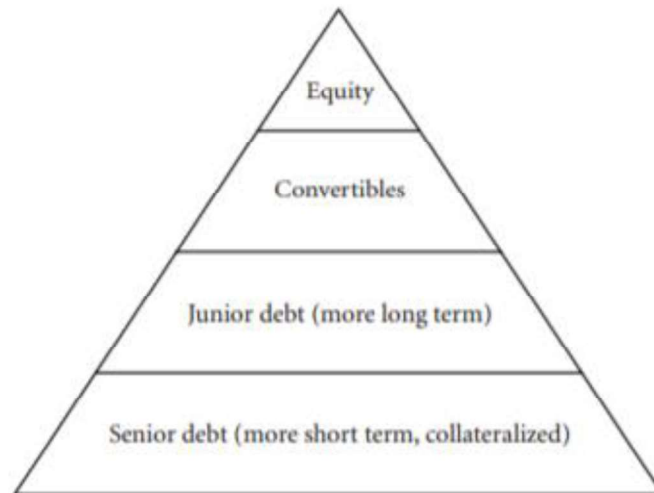
Figure 1. A Hypothetical Financing Pyramid (Welch, 2009)

A theory of optimal capital structure have been developed by Scott (1976) showing that an optimal capital structure can exist by presenting a multi-period model of debt, equity and firm valuation. Later, Myers (1984) discovered that "capital structure changes convey information to investors" and designed conditional theories of capital structure (Myers, 1984, 1989, 2001):

(1) "***The tradeoff theory*** – firms seek debt levels that balance the tax advantages of additional debt against the costs of possible financial distress…

(2) ***The pecking order theory*** – firms will borrow, rather than issuing equity, when internal cash flow is not sufficient to fund capital expenditures…but are willing to sell equity when the market overvalues it

(3) ***The free cash flow theory*** – dangerously high debt levels will increase value, despite the threat of financial distress, when a firm's operating cash flow significantly exceeds its profitable investment opportunities" (Myers, 2001).

(4) ***An organizational theory of capital structure*** – "that is a promising alternative to capital structure theories based on shareholder wealth maximization" (Myers, 1989).

Nevertheless, which factors are reliably important in capital structure?

A growing body of literature suggests that there are many factors/attributes/determinates for an optimal capital structure, such as collateral value of assets, non-debt tax shields, growth, uniqueness, industry classification, size, volatility and profitability (Timan and Wessels,1988), industry leverage, market-to-book assets ratio, firm size, tangibility, inflation (Frank and Goyal, 2009; Oztekin, 2015). In our opinion, the most important conclusion about optimal capital structure was emphasized by Weston and Brigham (1990), as being the one that maximizes the market value of the firm's outstanding shares (Abor, 2005).

Nowadays, capital structure still represents a subject of debate in finance field. Specialists are searching for a pattern of optimal capital structure, or to demonstrate that capital structure is relevant. Ardalan (2017) argues that by making more realistic assumptions, capital structure can become relevant, especially if the stock price is

considered (Seo and Chung, 2017). Moreover, Miglo (2017) highlights that "asymmetric information about the timing of earnings affects capital structure and profitable firms may be interested in issuing equity".

As a conclusion of literature review in the field of capital structure, firms prefer to raise their capital, first from retained earnings, second from debt, and third from issuing new equity (Brealey and Myers, 2000) because of the cost of capital, in one hand, and due to the past profitability, on the other hand.

However, it is not very easy to diagnose the financial performance of a company based on capital structure. Abor (2005) have investigated the relationship between capital structure and profitability of listed firm on the Ghana Stock Exchange by relating the return on equity (ROE) with measures of capital structure. The findings "reveal a significantly positive relation between the ratio of short-term debt to total assets and ROE, while a negative relationship between the ratio of long-term debt to total assets and ROE was found".

Gill, Biger and Mathur (2011) stated that "the relationship between capital structure and profitability cannot be ignored because the improvement in the profitability is necessary for the long-term survivability of the firm". They have examined the effect of capital structure on profitability of the 272 American firms. Their findings show a positive relationship between: short-term debt to total assets and profitability; long-term debt to total assets and profitability; and total debt to total assets and profitability in the manufacturing industry.

The main objective of the present study is to analyze the impact of capital structure on company profitability. In order to measure the profitability were selected indicators like return on assets (ROA) and return on equity (ROE) as performance indicators, while profit (net income), total assets, shareholders equity, liabilities or shareholders equity ratio (weight/percent of shareholders equity to total assets) were selected as explanatory variables. To reveal capital structure it will be used financial leverage ratio (debt-to-equity).

3. Data and Results

This paper investigates if there are some correlations between analyzed variables, capital structure and profitability, of the most profitable companies in the world, considering Global Fortune 500. From 100 The most profitable companies in the world were selected 59, the non-financial one. All variables have been collected and were calculated using balance sheet values for the fiscal year 2016 (Appendix 1). Table 1 provides descriptive statistics of the collected variables.

Table 1: Descriptive Statistics

Variables (mil. USD)	N	Minimum	Maximum	Mean	Std. Deviation
PROFIT	59	4818.2	45687.0	9458.920	6071.3316
TA	59	32906	1221649	176977.86	175803.179
SE	59	4333	209456	61016.75	46778.386
ROA%	59	.4	23.7	7.642	4.5670
ROE%	59	4.6	183.6	25.800	29.2592
%SE of TA	59	3.52	91.12	38.67	17.83
DEBT/EQUITY	59	.097	27.33	2.73	3.99
Valid N (listwise)	59				

Where, TA – Total assets; SE – Shareholders` equity; ROA – Return on Assets; ROE – Return on Equity; %SE of TA – percent of Shareholders` equity of Total assets; Debt/Equity – Debt-to-equity (financial leverage: total debt/total shareholders' equity)

Table 2 provides the Pearson correlation for all variables that we used to answer to the research question.

Table 2: Pearson Bivariate Correlations and significance

		PROFIT	TA	SE	ROA%	ROE%	%SE of TA	DEBT/ EQUITY
PROFIT	Pearson Correlation	1	.150	.456**	.288*	.018	.215	-.147
	Sig. (2-tailed)		.258	.000	.027	.895	.103	.268
	N	59	59	59	59	59	59	59
TA	Pearson Correlation	.150	1	.455**	-.515**	-.274*	-.241	.622**
	Sig. (2-tailed)	.258		.000	.000	.036	.066	.000
	N	59	59	59	59	59	59	59
SE	Pearson Correlation	.456**	.455**	1	-.370**	-.467**	.445**	-.276*
	Sig. (2-tailed)	.000	.000		.004	.000	.000	.035
	N	59	59	59	59	59	59	59
ROA%	Pearson Correlation	.288*	-.515**	-.370**	1	.558**	.226	-.151
	Sig. (2-tailed)	.027	.000	.004		.000	.086	.253
	N	59	59	59	59	59	59	59
ROE%	Pearson Correlation	.018	-.274*	-.467**	.558**	1	-.455**	.395**
	Sig. (2-tailed)	.895	.036	.000	.000		.000	.002
	N	59	59	59	59	59	59	59
%SE of TA	Pearson Correlation	.215	-.241	.445**	.226	-.455**	1	-.632**
	Sig. (2-tailed)	.103	.066	.000	.086	.000		.000
	N	59	59	59	59	59	59	59
DEBT/EQUITY	Pearson Correlation	-.147	.622**	-.276*	-.151	.395**	-.632**	1
	Sig. (2-tailed)	.268	.000	.035	.253	.002	.000	
	N	59	59	59	59	59	59	59

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

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

According to the Table 2, considering all 59 analyzed companies, there are 14 significant correlations between variables, such as:

➢ Positive correlations (with green): profit with shareholders` equity and ROA; total assets with shareholders` equity and debt-to-equity; shareholders` equity with percent of shareholders` equity to total assets; ROA with ROE; ROE with debt-to-equity.

➢ Negative correlations (with red): total assets with ROA and ROE; shareholders` equity with ROA, ROE and debt-to-equity; ROE with percent of shareholders` equity of total assets; percent of shareholders` equity of total assets with debt-to-equity.

If we lock closer to the relation between ROA, ROE and debt-to-equity it can be observed that there is a positive correlation between ROE and debt-to-equity, which means that the capital structure influences company` profitability.
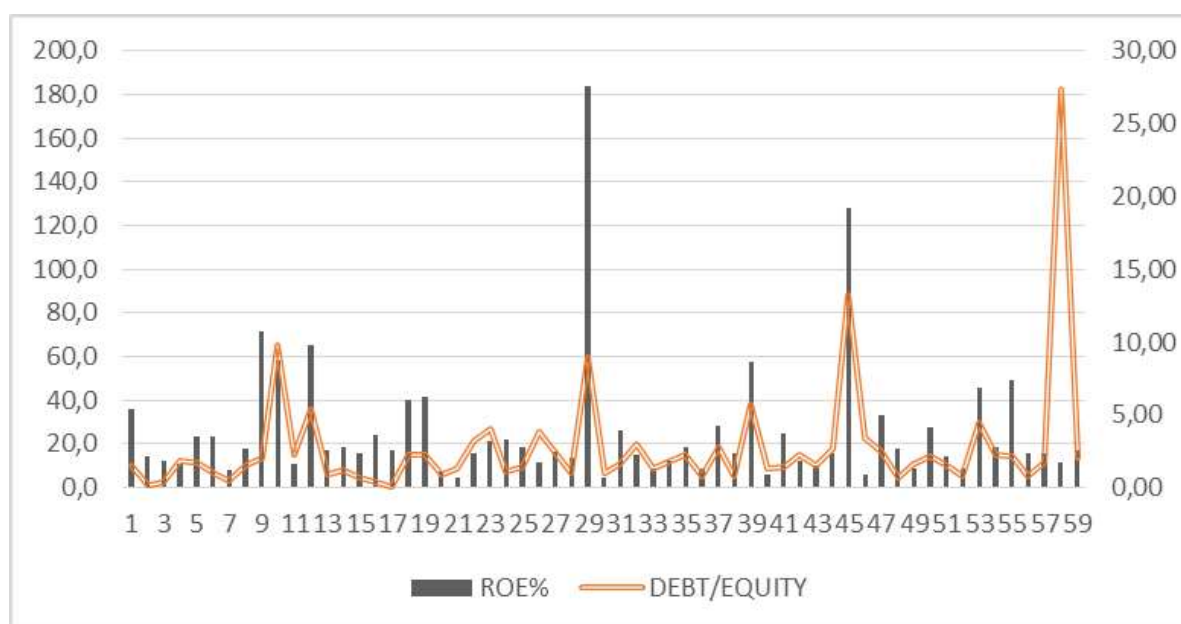

Figure 1. ROE and Debt-to-equity for analyzed companies

For more accurate results, the companies will be grouped in clusters (based on industry or debt-to-equity ratio) in order to identify the signification of the correlation between the profit and the capital structure.

Sector Analysis

All considered companies are grouped according to their activity sector (Table 3).

Table 3: Analyzed companies by Sector

Technology (TH)	Health Care (HC)	Motor Vehicles & Parts (MVP)	Energy (E)	Telecommunications (TC)	Other (O)
APPLE	JOHNSON &	TOYOTA	GAZPROM	VERIZON	NESTLE
ALPHABET	JOHNSON	MOTOR	NATIONAL	AT&T	COCA COLA
SAMSUNG	GILEAD	DAIMLER	GRID	CHINA MOBILE	PEPSI CO
ELECTRONICS	SCIENCES	GENERAL	STATE GRID	COMMU	WALMART
MICROSOFT	ROCHE	MOTORS	GENERAL	COMCAST	PROCTER&GAMBLE
IBM	GROUP	BMW GROUP	ELECTRIC	NIPPON	DISNEY
CISCO	AMGEN	NISSAN	EXXON	TELEG&TELEPH	HOME DEPOT
SYSTEMS	PFIZER	MOTOR	MOBIL	KDDI	ALIBABA GROUP
INTEL	UNITED	VOLKSWAGEN	TOTAL		HOLDING
TAIWAN SEMIC	HEALTH	HONDA			SIEMENS
MAN	GROUP	MOTOR			UNILEVER
FACEBOOK	NOVARTIS	SAIC MOTOR			MCKESSON
ORACLE	ANNVIE				UNITED
TENCENT	CVS				TECHNOLOGY
HOLDING	HEALTH				3M
QUALCOMM	SANOFI				CHINA POST
HUAWEI	BAYER				GROUP
					KOREA ELECTRIC
					POWER

We formulate hypotheses:
  H_0: *There is no relation between ROE and debt-to-equity*
  H_1: *There are some relations between ROE and debt-to-equity*

To test the hypotheses we use t-Test.

Table 4: t-Test: Paired Two Sample for Means (by Sector)

	Technology		Health Care		Motor Vehicles & Parts	
	ROE%	*Debt/Equity*	*ROE%*	*Debt/Equity*	*ROE%*	*Debt/Equity*
Mean	24,13256158	1,302351928	33,51159988	2,637759565	13,41017	2,675411481
Variance	191,492367	1,940145835	1326,152928	12,67755821	24,89057	0,75938616
Observations	13	13	11	11	8	8
Pearson Correlation	**0,932032548**		**0,892220648**		**0,425204**	
Hypothesized Mean	0		0		0	
df	12		10		7	
t Stat	6,558997493		3,076974543		6,48027	
P(T<=t) one-tail	1,34691E-05		0,005850428		0,00017	
t Critical one-tail	1,782287556		1,812461123		1,894579	
P(T<=t) two-tail	2,69382E-05		0,011700857		0,00034	
t Critical two-tail	2,17881283		2,228138852		2,364624	
	Energy		Telecommunications		Other	
	ROE%	*Debt/Equity*	*ROE%*	*Debt/Equity*	*ROE%*	*Debt/Equity*
Mean	12,47780603	1,704473331	19,53466133	2,910880223	36,03328	4,40529223
Variance	186,811751	1,385597821	372,9562672	11,97822276	1880,848	44,90316779
Observations	6	6	6	6	15	15
Pearson Correlation	**0,360948998**		**0,972612516**		**0,14135**	
Hypothesized Mean	0		0		0	
df	5		5		14	
t Stat	1,985872246		2,55037656		2,852886	
P(T<=t) one-tail	0,051898033		0,025621289		0,006388	
t Critical one-tail	2,015048373		2,015048373		1,76131	
P(T<=t) two-tail	0,103796065		0,051242578		0,012777	
t Critical two-tail	2,570581836		2,570581836		2,144787	

Table 4 presents the results of t-Test for correlation between ROE and debt-to-equity considering sectors. According to the results, there are very strong and positive relationships (over 0.5) between ROE and debt-to-equity in Technology, Health Care and Telecommunications (only at one tail) Sectors. In Energy and Motor Vehicles & Parts Sectors, the correlations are positive, but not very strong. In these cases the null hypotsesis is rejected. The Other group is divers and mixed and the correlation is very weak. The Technology sector has an average ROE of 24% with a 1.3 average for debt-to-equity, while Energy sector has a 1.7 average for debt-to-equity but the lowest average of ROE, only 12%. On the opposite side, in terms of debt-to-equity, are Health Care, Motor Vehicles & Parts and Telecommunications sectors. The Health Care sector has the highest average of ROE, above 33%, with a high debt-to-equity ratio of 2.63, while the Motor Vehicles & Parts sector has registered an average of 2.67 for debt-to-equity but with a 13% average level of ROE.

As Bradley, Jarrell and Kim (1984) stated over 30 years ago "the strong finding of intra-industry similarities in firm leverage ratios and of persistent inter-industry differences, together with the highly significant inverse relation between firm leverage and earnings volatility, tends to support the modern balancing theory of optimal capital structure".

Debt-to-equity analysis

In order to develop our findings, the analyzed companies have been divided into four groups based on debt-to-equity ratio. First group includes companies with a debt-to equity ratio lower than 1. The second group is reserved to the companies that have registered a debt-to-equity ratio higher than 1 and lower than 2. In the third group are companies with a debt-to-equity ratio between 2 and 2,99. The last group is for the companies that have a debt-to-equity ratio higher than 3.

Also, we have calculated the Pearson correlation between ROE and debt-to-equity and applied t-Test for each group.

Table 5: t-Test: Paired Two Sample for Means (by debt-to-equity)

	0-0,99		1-1,99		2-2,99		over 3	
	ROE%	Debt/Equity	ROE%	Debt/Equity	ROE%	Debt/Equity	ROE%	Debt/Equity
Mean	13,41901	0,635304667	16,56522	1,449975241	28,53738	2,297774996	51,67314	7,709006836
Variance	28,72534	0,073585606	62,16305	0,059115562	293,987	0,044773376	2948,677	48,25384032
Observations	14	14	19	19	14	14	12	12
Pearson Correlatio	-0,42769		-0,08371		-0,34174		0,141117	
Hypothesized Mea	0		0		0		0	
df	13		18		13		11	
t Stat	8,726747		8,331101		5,701649		2,832728	
P(T<=t) one-tail	4,26E-07		6,84E-08		3,64E-05		0,008146	
t Critical one-tail	1,770933		1,734064		1,770933		1,795885	
P(T<=t) two-tail	8,52E-07		1,37E-07		7,27E-05		0,016292	
t Critical two-tail	2,160369		2,100922		2,160369		2,200985	

By considering debt-to-equity ratio as an inflection point (Table 5), the Pearson correlations between ROE and debt-to-equity of the analyzed companies are negative, significant for group 1, and 3. A mean of 0.635 in the first group for debt-to-equity is associated with a mean of 13.419% for ROE. A lower level of debt-to-equity can drive to a higher level of ROE. Similar findings are available for the third group, with a debt-to-equity ratio between 2 and 2,99.

ROE Analysis

What will be the result if we consider ROE in order to split companies?

According to own calculations, companies can be divided into two groups: first, with a ROE lower than 20% and second, with a ROE higher than 20%.

Table 6: t-Test: Paired Two Sample for Means (by ROE)

	lower than 20%		higher than 20%	
	ROE%	*Debt/Equity*	*ROE%*	*Debt/Equity*
Mean	12,95261587	2,226761085	49,04795	3,643038365
Variance	17,99776789	18,30065847	1568,307	11,09007902
Observations	38	38	21	21
Pearson Correlation	**-0,047431036**		**0,764265**	
Hypothesized Mean	0		0	
df	37		20	
t Stat	10,72302789		5,605539	
P(T<=t) one-tail	3,30709E-13		8,69E-06	
t Critical one-tail	1,68709362		1,724718	
P(T<=t) two-tail	6,61419E-13		1,74E-05	
t Critical two-tail	2,026192463		2,085963	

By considering ROE as an inflection point (Table 6), the Pearson correlation between ROE and debt-to-equity for the second group in very strong, positive and significant (0.764). A mean of 3.643 for debt-to-equity is associated with a mean of 49% for ROE. A higher level of debt-to-equity can drive to a higher level of ROE.

Summarizing the findings of our study, it is very difficult to identify if there is an optimal capital structure in order to impact the company's profitability. Different capital structure drives to different level of profitability when sector/industry, debt-to-equity or ROE are considered. However, it is obvious that the capital structure affects the company profitability because a high level of debt-to-equity ratio could indicate both a strong financial performance and a financial stringency (Brigham, 1991). Our findings are supported also by previous studies and research conducted by Myers (2001), Abor (2005, 2008), Margaritis and Psillaki (2010), Gill, Biger and Mathur (2011), Danis, Rettl and Whited (2014), Singh and Singh (2016).

4. Conclusion

The capital structure is very important for any company. This present study attempted to answer to the research question (does capital structure influence company profitability) based on literature and findings reviews. The main results of the paper reveal significantly correlations between ROE and debt-to-equity, positively or negatively, if different circumstances are considered. With regard the sector analysis, there are very strong and positive relationships (over 0.5) between ROE and debt-to-equity in Technology, Health Care and Telecommunications Sectors. In Energy and Motor Vehicles & Parts Sectors, the correlations are positive, but not very strong. When debt-to-equity and ROE have been considered as inflection points, the results were significant, but divergent: either situation, a low or a high level of debt-to-equity, can drive to a higher level of ROE. In conclusion, it is very difficult to identify an optimal capital structure at any level. The capital structure is an issue at company financing decision level. Every company has to identify the own optimal capital structure by mixing the financing sources in order to increase its own profitability.

References

Abor, J. (2005). The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana. *The journal of risk finance*, *6*(5), 438-445.

Abor, J. (2008), *Determinants of the capital structure of Ghanaian firms*, AERC Research paper 176, African Economic Research Consortium, Nairobi.

Ardalan, K. (2017). Capital structure theory: Reconsidered. *Research in International Business and Finance*, *39*, 696-710.

Batchimeg, B. (2017). Financial Performance Determinants of Organi-zations: The Case of Mongolian Companies. *JOURNAL OF COMPETITIVENESS*, *9*(3), 22-33.

Bockova, N., & Zizlavsky, O. (2016). Innovation and financial performance of a company: a study from Czech manufacturing industry. *Transformation in Business & Economics*, *15*(3).

Bradley, M., Jarrell, G. A., & Kim, E. (1984). On the existence of an optimal capital structure: Theory and evidence. *The journal of Finance*, *39*(3), 857-878.

Brealey, R.A. & Myers, S.C. (2000). Principles of Corporate Finance, 6th ed. Burr Ridge, IL: Irwin McGraw-Hil

Brigham, E. F. (1991). *Financial management theory and practice*. Atlantic Publishers & Distri.

Cho, H. J., & Pucik, V. (2005). Relationship between innovativeness, quality, growth, profitability, and market value. *Strategic management journal*, *26*(6), 555-575.

Christensen, H. K., & Montgomery, C. A. (1981). Corporate economic performance: Diversification strategy versus market structure. *Strategic Management Journal*, *2*(4), 327-343.

Danis, A., Rettl, D. A., & Whited, T. M. (2014). Refinancing, profitability, and capital structure. *Journal of Financial Economics*, *114*(3), 424-443.

Dewenter, K. L., & Malatesta, P. H. (2001). State-owned and privately owned firms: An empirical analysis of profitability, leverage, and labor intensity. *The American Economic Review*, *91*(1), 320-334.

Enqvist, J., Graham, M., & Nikkinen, J. (2014). The impact of working capital management on firm profitability in different business cycles: Evidence from Finland. *Research in International Business and Finance*, *32*, 36-49.

Frank, M. Z., & Goyal, V. K. (2009). Capital structure decisions: which factors are reliably important?. *Financial management*, *38*(1), 1-37.

Gedajlovic, E., & Shapiro, D. M. (2002). Ownership structure and firm profitability in Japan. *Academy of Management Journal*, *45*(3), 565-575.

Gill, A., Biger, N., & Mathur, N. (2011). The effect of capital structure on profitability: Evidence from the United States. *International Journal of Management*, *28*(4), 3.

Joh, S. W. (2003). Corporate governance and firm profitability: evidence from Korea before the economic crisis. *Journal of financial Economics*, *68*(2), 287-322.

Margaritis, D., & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. *Journal of Banking & Finance*, *34*(3), 621-632.

Mithas, S., Tafti, A. R., Bardhan, I., & Goh, J. M. (2012). Information technology and firm profitability: mechanisms and empirical evidence. MIS Quarterly Vol. 36 No. 1. 205-224.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review*, *48*(3), 261-297.

Myers, S. C. (1984). The capital structure puzzle. *The journal of finance*, *39*(3), 574-592.

Myers, S. C. (1989). Still searching for optimal capital structure. *Are the distinctions between debt and equity disappearing*, 80-95.

Myers, S. C. (2001). Capital structure. *The journal of economic perspectives*, *15*(2), 81-102.

Öztekin, Ö. (2015). Capital structure decisions around the world: which factors are reliably important?. *Journal of Financial and Quantitative Analysis*, *50*(3), 301-323.

Pastusiak, R., Bolek, M., Malaczewski, M., & Kacprzyk, M. (2016). Company Profitability Before and After IPO. Is it a Windows Dressing or Equity Dilution Effect?„. *Prague Economic Papers*, *2016*(1), 112-124.

Rose, C. (2016). Firm performance and comply or explain disclosure in corporate governance. *European Management Journal*, *34*(3), 202-222.

Scott Jr, J. H. (1976). A theory of optimal capital structure. *The Bell Journal of Economics*, 33-54.

Seo, S. W., & Chung, H. J. (2017). Capital structure and corporate reaction to negative stock return shocks. *International Review of Economics & Finance*, *49*, 292-312.

Sharma, A. K., & Kumar, S. (2011). Effect of working capital management on firm profitability: Empirical evidence from India. *Global Business Review*, *12*(1), 159-173.

Singh, B., & Singh, M. (2016). Impact of Capital Structure on Firm's Profitability: A Study of selected listed Cement Companies in India. PACIFIC BUSINESS REVIEW

Stoneman, P., & Kwon, M. J. (1996). Technology adoption and firm profitability. *The Economic Journal*, 952-962.

Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *The Journal of finance*, *43*(1), 1-19.

Velnampy, T., & Niresh, J. A. (2012). The relationship between capital structure and profitability. Available at http://repo.lib.jfn.ac.lk/ujrr/handle/123456789/639

Welch, I. (2009), *Corporate finance: an introduction*, Prentice Hall, Pearson Education, USA.

Weston, J. F., & Brigham, E. F. (1990). *Essentials of managerial finance*. Dryden Press.

Appendix 1

Nr. crt.	Company	SECTOR	PROFIT	TOTAL ASSTES	SHARE EQUITY	ROA%	ROE%	%SE of TA	DEBT	DEBT/ EQUITY
1	APPLE	TECH	45687	321686	128249	14,2	35,6	39,87	193437	1,51
2	ALPHABET	TECH	19478	167497	139036	11,6	14,0	83,01	28461	0,20
3	SAMSUNG ELECTRONICS	TECH	19316,5	217104	154376	8,9	12,5	71,11	62728	0,41
4	TOYOTA MOTOR	MVP	16899,3	437575	157210	3,9	10,7	35,93	280365	1,78
5	MICROSOFT	TECH	16798	193694	71997	8,7	23,3	37,17	121697	1,69
6	JOHNSON & JOHNSON	HECARE	16540	141208	70418	11,7	23,5	49,87	70790	1,01
7	GAZPROM	ENERGY	14222,6	277262	181813	5,1	7,8	65,57	95449	0,52
8	WALMART	RETAILING	13643	198825	77798	6,9	17,5	39,13	121027	1,56
9	GILEAD SCIENCES	HECARE	13501	56977	18887	23,7	71,5	33,15	38090	2,02
10	VERIZON	TELECOM	13127	244180	22524	5,4	58,3	9,22	221656	9,84
11	AT&T	TELECOM	12976	403821	123135	3,2	10,5	30,49	280686	2,28
12	IBM	TECH	11872	117470	18246	10,1	65,1	15,53	99224	5,44
13	CISCO SYSTEMS	TECH	10739	121652	63586	8,8	16,9	52,27	58066	0,91
14	PROCTER&GAMBLE	HOUSEHO	10508	127136	57341	8,3	18,3	45,10	69795	1,22
15	INTEL	TECH	10316	113327	66226	9,1	15,6	58,44	47101	0,71
16	TAIWAN SEMIC MAN	TECH	10283,7	58535	42174	17,6	24,4	72,05	16361	0,39
17	FACEBOOK	TECH	10217	64961	59194	15,7	17,3	91,12	5767	0,10
18	NATIONAL GRID	ENERGY	10150,6	82310	25463	12,3	39,9	30,94	56847	2,23
19	ROCHE GROUP	HECARE	9719,9	75609	23534	12,9	41,3	31,13	52075	2,21
20	CHINA MOBILE COMMUNICATIONS	TELECOM	9614,3	246446	130459	3,9	7,4	52,94	115987	0,89
21	STATE GRID	ENERGY	9571,3	489838	209456	2,0	4,6	42,76	280382	1,34
22	DAIMLER	MVP	9428,4	256262	61116	3,7	15,4	23,85	195146	3,19
23	GENERAL MOTORS	MVP	9427	221690	43836	4,3	21,5	19,77	177854	4,06
24	DISNEY	MEDIA	9391	92033	43265	10,2	21,7	47,01	48768	1,13
25	ORACLE	TECH	8901	112180	47289	7,9	18,8	42,15	64891	1,37
26	GENERAL ELECTRIC	ENERGY	8831	365183	75828	2,4	11,6	20,76	289355	3,82
27	COMCAST	TELECOM	8695	180500	53943	4,8	16,1	29,89	126557	2,35
28	NESTLE	FBT	8659,2	129824	63573	6,7	13,6	48,97	66251	1,04
29	HOME DEPOT	RETAILING	7957	42966	4333	18,5	183,6	10,08	38633	8,92
30	EXXON MOBIL	ENERGY	7840	330314	167325	2,4	4,7	50,66	162989	0,97
31	AMGEN	HECARE	7722	77626	29875	9,9	25,8	38,49	47751	1,60
32	BMW GROUP	MVP	7589,4	198835	49682	3,8	15,3	24,99	149153	3,00
33	NIPPON TELEG&TELEPH	TELECOM	7384,4	190740	81254	3,9	9,1	42,60	109486	1,35
34	PFIZER	HECARE	7215	171615	59544	4,2	12,1	34,70	112071	1,88
35	UNITED HEALTH GROUP	HECARE	7017	122810	38274	5,7	18,3	31,17	84536	2,21
36	NOVARTIS	HECARE	6712	130127	74832	5,2	9,0	57,51	55295	0,74
37	COCA COLA	FBT	6527	87270	23062	7,5	28,3	26,43	64208	2,78
38	ALIBABA GROUP HOLDING	RETAILING	6489,5	73538	40454	8,8	16,0	55,01	33084	0,82
39	PEPSI CO	FBT	6329	74129	11005	8,5	57,5	14,85	63124	5,74
40	TOTAL	ENERGY	6196	230978	98680	2,7	6,3	42,72	132298	1,34
41	TENCENT HOLDING	TECH	6185,9	59968	25128	10,3	24,6	41,90	34840	1,39

42	NISSAN MOTOR	MVP	6123,4	165344	50550	3,7	12,1	30,57	114794	2,27
43	KOREA ELECTRIC	POWER	6074,1	147265	59394	4,1	10,2	40,33	87871	1,48
44	SIEMENS	INDUSTRY	6050,5	141271	38444	4,3	15,7	27,21	102827	2,67
45	ANNVIE	HECARE	5953	66099	4636	9,0	128,4	7,01	61463	13,26
46	VOLKSWAGEN	MVP	5937,3	432116	97753	1,4	6,1	22,62	334363	3,42
47	UNILEVER	HOUSEHO	5732,7	59512	17247	9,6	33,2	28,98	42265	2,45
48	QUALCOMM	TECH	5705	52359	31778	10,9	18,0	60,69	20581	0,65
49	HONDA MOTOR	MVP	5690,3	170165	65482	3,3	8,7	38,48	104683	1,60
50	HUAWEI	TECH	5579,4	63837	20159	8,7	27,7	31,58	43678	2,17
51	CVS HEALTH	HECARE	5317	94462	36830	5,6	14,4	38,99	57632	1,56
52	SANOFI	HECARE	5207,4	110390	60698	4,7	8,6	54,99	49692	0,82
53	MCKESSON	WHOLESALE	5070	60969	11095	8,3	45,7	18,20	49874	4,50
54	UNITED TECHNOLOGY	A&DEF	5055	89706	27579	5,6	18,3	30,74	62127	2,25
55	3M	INDUSTRY	5050	32906	10298	15,3	49,0	31,30	22608	2,20
56	KDDI	TELECOM	5045,1	56223	31904	9,0	15,8	56,75	24319	0,76
57	BAYER	HECARE	5010,6	86731	31990	5,8	15,7	36,88	54741	1,71
58	CHINA POST GROUP	TRANSP	4980,3	1221649	43114	0,4	11,6	3,53	1178535	27,34
59	SAIC MOTOR	MVP	4818,2	84989	27617	5,7	17,4	32,49	57372	2,08

Source: http://fortune.com/global500/list/filtered?sortBy=profits&first500