Capital Structure and Corporate Performance of Romanian Listed Companies

Raluca-Georgiana MOSCU

Bucharest University of Economic Studies, Romania, E-mail: moscu.raluca@yahoo.com

Abstract

This research has the purpose to examine the relationship that is established between capital structure and profitability of company for a sample of 53 companies listed on the Bucharest Stock Exchange, in 2010-2012. The results indicate that firm's performance, which is measured by ROA, ROE, RCA and MBR is significantly influenced by the degree of capital structure. Overall, in our study you may observe that firm's performance expressed by the Economic Return is positively influenced by the capital structure degree and it is expressed by the Financial Return - ROE, net sales margin rate - RCA Earnings per share - EPS, Market to Book Ratio - MBR is negatively affected by capital structure.

Key words   Capital structure, return on equity, return on assets

1. Introduction

This study has as purpose the analysis of the impact of capital structure on firm's performance. Capital structure refers to the firm's financial framework which consists of the debt and equity used to finance the firm. Capital structure is one of the popular topics in finance field. The ability of companies to carry out their stakeholders' needs is tightly related to capital structure. Therefore, this derivation is an important fact that I cannot omit. Capital structure in financial term means the way a firm finances its assets through the combination of equity, debt, or hybrid securities (*Saad, 2010*). The study used five measures of performance (Return on Equity - ROE, Return on Assets - ROA, Operating Margin - R_{CA} Earnings per Share - EPS, Market to Book Ratio - MBR) as dependent variables and five measures of the degree of capital structure (Debt/Equity, Debt/Assets, Debt/Assets, Debt to Market Value, Long term Debt to Equity) as independent variables. The sample for this study is consisted of 53 companies listed on the Bucharest Stock Exchange, in 2010-2012. Companies were selected based on the availability of information needed for the study, information available in the annual reports for the financial years 2010 to 2012.

2. Literature review

Numerous authors have studied the phenomenon of capital structure on corporate performance: *Rajan and Zingales (1995), Zeituni and Tian (2007), Abor (2007), Mehran (1995) and Psillaki Margaritis (2006).* The majority of studies written by those listed have empirically analyzed the relationship between the capital structure degree and corporate performance expressed as return on assets (ROA) or return on equity (ROE). Since the results are often contrary we've tried to formulate three opinions drawn from the literature: on the one hand capital structure has a significant impact on performance - positive or negative, on the other hand there isn't a link between the two variables. Thus to identify the impact of capital structure on performance we've formulated three statistical hypotheses:

A. Capital structure has a positive impact on corporate performance

Champion (1999), Gosh et al. (2000), Hadlock and James (2002), Berger and Bonaccorsi di Patti (2006) identified a positive relationship between capital structure and earnings per share (EPS). A study by *Abor (2005)* regarding the impact of capital structure on the performance of companies in Ghana from 1998 to 2002, the author notes that there is a positive dependence between the report Debt/Assets

(DAT/AT) and Return on Equity (ROE). *Arbiyan and Safari (2009)* identified a positive impact of capital structure on Return on Equity (ROE) for 100 companies in Iran in 2001-2007. A positive relationship between the two variables can be explained on the one hand by the attitude of managers who borrow to make profitable investment projects. At this conclusion reached *Holz (2002)* too. Also signal theory shows that managers may use capital structure as a positive signal provided to investors in the market. *Weill* (2007) identified a positive relationship between the capital structure degree and performance for companies in Spain and Italy.

B. Capital structure has a negative impact on corporate performance

Rajan and Zingales (1995), Zeituni and Tian (2007), Abor (2007) identified a negative relationship between capital structure and earnings per share (EPS). Also *Chakraborty* (2010) has identified a negative impact of index number Debt/Equity (DAT/CPR) on Operating Margin. A negative relationship between the two variables is explained by the power of creditors to use capital structure as a means of disciplining the managers of companies. So companies distribute less as dividends. Also the creditors may impose restrictions by increasing the interest rate. In this case, companies are more interested in obtaining positive financial results in order to have the ability to pay interest, but such by calling loan, the net profits will decrease considerably.

In a study by *Abor (2005)* on the impact of capital structure on the performance of companies in Ghana, the author notes that there is a negative dependence between variables Financial Liabilities or Debt, on the one hand and *Return on equity (ROE),* on the other hand as the dependent variable and shows that firms benefit if a debtor is short. *Arbiyan and Safari (2009)* identified a negative impact of financial liabilities on the return on equity (ROE for the 100 companies in Iran 2001-2007. *Zeituni and Tain (2007)* observed for companies in Jordan, a negative relationship between the level of capital structure and performance. *Majumdar and Chhibber (1997), Ghosh (2007)* have also identified a negative relationship between capital structure and performance. *Weill (2008)* found a negative relationship between capital structure and performance for companies in Germany, France, Belgium and Norway. *Weill (2007)* has identified a negative relationship between capital structure and performance for companies in Portugal.

C. Capital structure has not a significant impact on corporate performance

Ibrahim (2009) has examined the impact of debt (capital structure) on the performance of listed companies in Egypt, using a multiple regression model. To estimate the relationship between the level of debt and performance of companies the author has used financial data collected from listed companies for the period 1997-2005. The author uses three accounting measures of performance (Return on Equity, Return on asset and Operating margin), variables selected in our study also. The results showed that the degree of capital structure hasn't a significant impact on performance.

3. Data

In this study we had as purpose the identification of sources of funding of companies listed on BSE and the impact of debt on the performance of listed companies in Romania. We chose as sample a number of 53 companies listed on the Bucharest Stock Exchange and financial data were selected for 2010-2012 period. Initially we selected 61 companies, but we removed from the sample the banks and investment companies, because for these companies debt is influenced by several exogenous factors. So to test the validity of the assumptions stated above, the practice of listed companies it was compiled a sample of 53 companies listed on the Bucharest Stock Exchange. Necessary financial information (balance sheet and profit and loss account) were collected from several sources: the website of BSE, the website of Investment Consulting Company KTD Invest SA and the website of the Intercapital Financial Investment Services Company Invest S.A.

4. Results of empirical research

The literature provides several ways to quantify the degree of capital structure explained in Table 1. To test the impact of debt on corporate performance we have used five explanatory variables listed in the

table below. The explanatory variables present corporate performance expressed either as Return on Asset, Return on Equity, Operating Margin, Profit per Share or of report Market Value/Equity.

Table 1. Definition of used variables

Capital Structure (Independent Variables X_k)	Debt/ Equity	DAT/CPR
	Debt/Total Asset	DAT/AT
	Debt/Economic asset	DAT/AE
	Long Term Debts/Equity	DATFIN/CPR
	Debts/ Market Value	DAT/CPB
Corporative performance (Dependent variables Y)	Return on Equity	ROE
	Return on Asset	ROA
	Operating Margin	RCA
	Earnings per Share	EPS
	Market to Book Ratio	MBR

To present a clearer structure of the modalities of financing of companies listed on the Bucharest Stock Exchange, in Table 2 we present the average values of the indicators of financial structure, for 2010-2012 period: equity/total assets, long term debt/total assets and operating debt/total asset.

Table 2. Financing total assets of companies listed in 2010-2012

Years	Average values of capital structure (%)		
	CPR/AT	DATFIN/AT	DATEX/AT
2010	60.3%	10.8%	28.8%
2011	66.%	10.5%	23.2%
2012	44.4%	10.4%	45.1%

The data in Table 2 shows that each year predominant is financing from own funds, the average value reaching 66.16% in 2011. If in the first two years of analysis there is an increasing of preference for financing from own funds, in 2012 there is a diminishing of it due to doubling the percentage of the operating debt in total assets. So in 2012 short-term financing is preferred at the expense of financing from own sources. Medium and long -term debt on average covers 10% of the total assets of listed companies.

The obtained results show that companies listed on the Bucharest Stock Exchange respect the financing sources of the Pecking Order Theory. The main source of financing of the asset remains its own funds. Thus over 68% of companies are turning to their own sources in a proportion greater than 50%. Although priority is internal financing, companies prefer foreign financing also - trade and bank credits. It is considered that external financing is more risky given the fluctuations in the results recorded at the end of the three years of analysis. Thus the vast majority of companies have registered fluctuations in terms of profits or losses. Given these results, the creditors have not provided anymore long-term loans easily.

If empirical analysis on variable that show the corporate performance we can build a multiple regression model. The dependent variable is the variable ROE/ROA/RCA/EPS/MBR which measures performance. From the available data we can construct a vector of regressors *Xi* (DAT/CPR, DAT/AT, DAT/AE , DATFIN/CPR , DAT/CPB), which supposedly can influence the result *Y*. Based on the predictions of financial theory and on the previous discussion regarding the five identified statistical assumptions, we consider the following four regression models:

Model 1: ROE = f (DAT/CPR, DAT/AT, DAT/AE, DATFIN/CPR, DAT/CPB)

Model 2: ROA = f (DAT/CPR, DAT/AT, DAT/AE, DATFIN/CPR, DAT/CPB)

Model 3: RCA = f (DAT/CPR, DAT/AT, DAT/AE, DATFIN/CPR, DAT/CPB)

Model 4: EPS = f (DAT/CPR, DAT/AT, DAT/AE, DATFIN/CPR, DAT/CPB)

Model 5: MBR = f (DAT/CPR, DAT/AT, DAT/AE, DATFIN/CPR, DAT/CPB)

The empirical analysis observed that the variable ROA (Return on Assets) is significantly negatively influenced by the ratio of financial debt/equity, the model being explained in proportion of 42% (R^2 coefficient value). Return on Equity is 85% explained by the degree of capital structure expressed as Total Debt/Equity. Earnings per Share are not significantly influenced by any way of expressing capital structure. Capital structure calculated as the ratio between total debt and market capitalization is negatively influencing the value of Market to Book Ratio (MBR).

Table 3. Empirical results of the impact of the degree of capital structure on corporate performance

	Dependent variables									
	Model 1		Model 2		Model 3		Model 4		Model 5	
	ROA		ROE		RCA		EPS		MBR	
Independent variables	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
DATTOT/CPR	0.074	0.017	-0.084	0.001	0.022	0.225	0.007	0.975	0.018	0.888
DATTOT/AT	-0.081	0.251	0.034	0.563	0.091	0.027	-0.492	0.351	0.171	0.566
DATTOT/AE	0.013	0.670	0.011	0.655	-0.020	0.255	-0.038	0.868	-0.008	0.950
DATFIN_CPR	-0.095	0.018	0.003	0.930	-0.028	0.222	-0.011	0.969	-0.068	0.687
DATTOT/CPB	0.023	0.821	0.014	0.861	0.032	0.580	-0.127	0.865	-1.930	0.000
R-squared	42.10%		85.51%		3.80%		0.78%		14.92%	
Adjusted R-squared	40.19%		85.04%		0.64%		-0.02%		12.13%	
Durbin-Watson	2.042		2.008		2.096		2.020		1.937	
Prob(F-statistic)	0.000		0.000		0.310		0.943		0.0001	

Profitability, expressed as return on assets (ROA) is positively influenced by Total Debt/Equity and negatively by the degree of capital structure expressed as ratio of Financial Debt/Equity in the model no. 1 shown in Table 3. *Abu- Rub* (2011) has identified a significant and positive relationship between Return on Asset (ROA) and Debt, for 28 companies listed in Palestine, in 2007-2010 periods. *Gill et al. (2011)* has observed a positive relationship for a sample of 272 listed companies for the period 2005-2007. *Dessi and Robertson* (2003) have observed that the total degree of capital structure is positively correlated with performance: companies try to use loans to utilize increasing opportunities and to invest the borrowed money in profitable projects, so this will increase efficiency, financial performance of the firm. *Margrates and Psillaki* (2010) have also demonstrated that the total degree of capital structure is significantly and positively correlated with the firm's performance.

We believe that if a company obtains sufficient incomes by calling short-term debt to be able to cover its expenses, including the ones with interest on loans and it can benefit from the tax savings associated with debt, it can be a company that also obtains a solid profitability. Managers consider the appeal to debt a positive signal to the investors in the market. Debt provides "confidence" to investors that they have made the best choice. As the debt ratio is higher, the more profitable the company is, and vice versa, in terms of high profitability the company may take loans so that from own and borrowed sources to fund projects of profitable investments. According to *Champion* (1999), short-term debt is a way to improve firm performance as short-term debt is cheaper than long term debts. *Holz* (2002) identified that between the capital structure and performance of the company there is a positive relationship. The result demonstrates the company's managers desire to fund projects by calling loans, the money thus obtained being used optimally to maximize shareholders performance. According to this result, if the banks will want to lend money, they will study the feasibility of the projects that they would want to fund, before offering the loan.

Managers considered capital structure a positive signal to investors in the market. Changes regarding the degree of capital structure may transmit information on a company's profitability and its risks. An underperforming firm may have a low market value, but managers will be able to demonstrate that, in fact, their company is undervalued when they turn to debt and they will be able to support debt service.

Table 4. Empirical results of the degree of capital structure on corporate performance-significant influences

Independent variables	Dependent variables							
	Model 1		Model 2		Model 3		Model 4	
	ROA		ROE		RCA		MBR	
	Coeff.	Prob.	Coeff.	Coeff.	Coeff.	Prob.	Coeff.	Prob.
DATTOT/CPR	0.087	0.000	-0.080	-0.027	-0.082	0.041	-0.027	0.047
DATTOT/AT								
DATTOT/AE								
DATFIN_CPR	-0.012	0.000						
DATTOT/CPB							-1.935	0.000
R-squared	41.55%		85.33%		2.64%		14.01%	
Adjusted R-squared	40.79%		85.24%		2.00%		12.90%	
Durbin-Watson stat	2.042		2.003		2.095		1.955	
Prob(F-statistic)	0.000		0.000		0.041		0.0000	

Knowing that in case of wrong signals managers will incur penalties, investors will have good reason to believe that the situation of the company is much better. *Abor (2007)* identifies a negative relationship between the total debts of the company and ROA. *Ebaid (2009)* supports the results mentioned above for a sample of companies listed in Egypt.

The model no. 2 in the table no. 4 there is a negative relationship between Return on Equity - ROE and the degree of capital structure expressed as Debt/Equity. The negative relationship between the two variables - Return on Equity (ROE) and Financial Debt/Equity supports the Pecking Order Theory. *The Pecking order theory* of capital demonstrates that companies prefer that reinvesting profit is their main source of investment financing and second place opting for debt (*Myers and Majluf*, 1984). According to this theory, profitable firms rely mainly on profits carried forward for financing investments and they are financing their activities based on the current debt. It is therefore expected a negative relationship between profitability and debt. Studies of authors *Abor* (2005) for companies listed in Ghana, Krishnan and *Moyer* (1997) – for Asian corporations, *King and Santor* (2008) for companies in Canada, confirmed the negative relationship between the two variables - Debt/Equity and Return on Equity (ROE).

Abu-Rub (2011) also identified a negative relationship between the two variables for 28 companies listed in Palestine, in 2007-2010. *Shub and Alsawlhah* (2012) have identified an inverse relationship between ROE and the degree of capital structure for 39 companies listed in Jordan, in 2004-2009. *Abor* (2005) and *Ebaid* (2009) argue that there is a negative relationship between ROE and the degree of capital structure for companies listed in Malaysia, respectively, for companies listed in Egypt, in 1997-2005.

5. Conclusions

This research has as purpose the examination of relationship established between capital structure and company's profitability for a sample of 53 companies listed on the Bucharest Stock Exchange, in 2010-2012. Equilibrium theory developed by *Modigliani* and *Miller* in 1963 position the indebted companies in an advantage contrary to the ones not indebted. *Miller* (1977) argues that the tax savings generated by debt are lost as the degree of capital structure increases.

Financing through debt arises as a way of reducing agency costs caused by the conflictual situation between shareholders and managers, funding by call to debt reducing cash flow available to managers, which explains why companies in economic sectors characterized by reduced growth opportunities and significant cash -flows tend to have high rates of levers.

Also the increasing of the degree of capital structure causes the appearance of agency costs between shareholders and creditors, conflict due to moral hazard: the increasing of the degree of capital structure leads to motivate shareholders to compel managers to conduct risky projects, a phenomenon known as the problem of substitution projects. The company wants to take a loan to finance absolute projects, benefiting from low interest rates and the funds thus obtained are used to finance risky projects from which benefit only shareholders, and in case of failure it will generate losses to creditor.

From the results of the empirical analysis it is observed that the profitability, expressed as Return on Assets (ROA), Market to Book Ratio (MBR) and Operating margin are negatively influenced by the degree of capital structure expressed as Total Debt/Equity. This conclusion supports the Pecking order theory, according to which profitable companies are less in debt, because they use internal resources to finance their investment projects and not capital structure. In terms of asymmetry of information the company prefers to begin to finance its investment projects initially from own funds and afterwards of debt and only ultimately from the issue of shares, because a new issue generates a decrease of the exchange rate.

References

1. Abor, J. (2005).The Effect of Capital Structure on Profitability: Empirical Analysis of Listed Firms in Ghana, *Journal of Risk Finance*, 6(5):438-45.

2. Arbabian A.A. & M. Safari Grayly, (2009). The effect of capital structure on profitability Companies listed on the Iran Stock Exchange, Landscape Management, (330):175- 159.

3. Berger, A., Bonaccorsi di Patti, E. (2006). Capital structure and firm performance: a new approach to testing agency theory and an application to the banking industry, *Journal of Banking and Finance*, Vol. 30: 1065-102.

4. Chakraborty, I. (2010). Capital structure in an emerging stock market: The case of India**,** *Research in International Business and Finance*, Vol. 24: 295-314.

5. Ebaid IE (2009). 'The Impact of Capital-Structure Choice on Firm Performance: Empirical Evidence from Egypt', The Journal of Risk Finance, vol.10, no. 5, pp. 477-487.

6. Harris, M., and Raviv, A. (1991). The Theory of Capital Structure, *The Journal of Finance*, 46:297-355*.*

7. Holz,Carsten A. (2002). The Impact of The Liability-Asset Ratio on Profitability in China's Industrial State-Owned Enterprises, *China Economic Review*, 13: 1-26.

8. Ghosh,S. (2007). Leverage, Managerial Monitoring and Firm Valuation: A Simultaneous Equation Approach, *Research in Economics*, 61: 84–98.

9. Grossman, S. J. and Hart, O. (1982). Corporate Financial Structure and Management Incentives", In: *The Economics of Information and Uncertainty*: 107–140. University of Chicago Press, Chicago.

10.Jensen, M. and Meckling, W. (1976).Theory of The Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics*, 3:305-60.

11.Krishnan,V. and Moyer, R. (1997). Performance, Capital Structure and Home Country: An Analysis of Asian Corporation, *Global Finance Journal*, 8(1):130-143.

12.Majumdar, S.K., Chhibber, P. (1999). Capital Structure and Performance: Evidence from a Transition Economy on an Aspect of Corporate Governance, *Public Choice*, 98:287-305.

13.Modigliani, F., Miller, M. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment, *The American Economic Review*, 48 (3):261-97. European Scientific Journal October edition vol. 8, No.22 ISSN: 1857 – 7881.

14.Rajan, R.G, Zingales, L. (1995). What Do We Know about Capital Structure? Some Evidence from International Data. *Journal of Finance*, Vol. 50, No. 5, pp. 1421-1460.

15.Ross, S. (1977). The Determination of Financial Structure: The Incentive Signaling Approach, *Bell Journal of Economics*, 8:23-40.

16.Weill, L. (2008). Leverage and Corporate Performance: Does Institutional Environment Matter?, *Small Business Economics* , 30:.251–265.

17.Wippern, R. (1966). Financial Structure and the Value of the Firm, *The Journal of Finance*, 21(4):615-633.

18.Zeitun, R., Tian, G. (2007). Capital structure and corporate performance: evidence from Jordan, *Australasian Accounting Business and Finance Journal*, Vol. 1: 40-53.