OWNERSHIP STRUCTURE, PERFORMANCE AND CAPITAL STRUCTURE OF ROMANIAN FIRMS

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Abstract
This paper investigates how ownership concentration affects the performance and capital structure of Romanian listed firms during the period 2007 - 2011. We find that ownership concentration has no effect on firms' performance, but has a positive effect on firms' capital structure, when these firms have adjustment behaviour to the target capital structure. In addition, we found that debt ratio and firms' size are the determinants of firms' performance and firms' performance, assets tangibility and ownership concentration are the determinants of firms' capital structure.

Keywords*: capital structure, ownership concentration, firm performance, panel data models*
JEL Classification*: G32, C33*

1. Introduction

The effect of ownership concentration on firms' capital structure and, therefore, on firms' performance was suggested for the first time by the agency theory of capital structure (Jensen & Meckling, 1976; Jensen, 1976). According to this theory, at firm level, there are conflicts of interests between managers and shareholders generating the agency costs (Jensen & Meckling, 1976). More specifically, due to the fact that managers will support all the expenses related to firms' investment projects, but will not hold the entire profit obtained from these projects, they will pursue a series of private benefits such as higher wages than those on the market, additional earnings, job security and, in extreme cases, attracting assets or cash-flows. Shareholders may oversee managers' behavior through various mechanisms of monitoring and control that lead to agency costs. A solution for preventing managers' inappropriate behavior is to contract more debt, because this will limit the amount of money available the managers (Jensen,

1986). A high debt ratio increases firm value by constraining managers to act more in the interest of shareholders (Berger & Bonaccorsi di Patti, 2006).

The lower the agency costs, the less debt ratio has a company, because there is less need for debt to discipline the managers. Low agency costs are associated with high ownership concentration and, thus, the agency theory predicts, on the one side, a negative correlation between debt ratio and ownership concentration. The same result was found for the American firms (Fried & Lang, 1988; Firth, 1995) and more recently for the firms in developing countries (Kocenda and Svejnar, 2003; Nivorozhkin, 2005).

There is in the literature studies that have found a positive correlation between debt ratio and ownership concentration (Cepedes, Gonzales and Molina, 2010; Huang and Song, 2006). Thus, Cepedes et al. (2010) explained this positive correlation for the Latin American firms through the lack of protection of minority shareholders.These firms will prefer debt as financing sources to the detriment of equity, because the issue of new equity means division or loss of firms' control.

Agency theory predicts, on the other side, a positive correlation between firms' performance and ownership concentration. An explanation for this relationship is given by the fact that, in the case of a high ownership concentration, the interests of managers with other shareholders are better aligned and, thus, agency costs are lower and firm value are greater (Jensen & Meckling, 1976). Several studies (Shleifer & Vishny, 1986; Stein, 1989; Thomsen and Pedersen, 2003) have confirmed the positive relationship between ownership concentration and firms' performance.

Some authors (Anderson & Reeb, 2003; Stulz, 1988) founded a negative relationship between ownership concentration and firm performance. An increased ownership concentration raises the firm's cost of capital as a result of decreased market liquidity and, thus, decreases firm performance (Margaritis and Psillaki, 2008). Finally, Demsetz and Lehn (1985) and Demsetz and Villalonga (2001) founded no significant relationship between ownership concentration and firms' performance.

To the best of our knowledge, there is no study that captures the relationship between ownership structure, performance and capital structure for Romanian firms. The aim of the current study was to investigate in what extend ownership concentration of Romanian listed firms has an effect on debt ratio and performance of these firms.

The structure of the rest of this paper is as follows: Section 2 presents the ownership structure characteristics of Romanian listed firms, Section3 presents the empirical analysis and Section 4 concludes.

2. Ownership structure characteristics

In order to study the ownership structure characteristics of Romanian listed firms, we have collected data from all firms listed on the Bucharest Stock Exchange during the period 2007-2011. We eliminated from the sample financial firms (i.e., banks, insurance companies) due to the fact that the balance sheets of those firms are different from those of non-financial companies. The final sample consists of 69 firms.

Following the approach of Brendea (2014), we used as a proxy for ownership concentration the Herfindhal Index (*HI*), calculated as the sum of the squares of the fractions of equity held by each shareholder with more than 5% of the shares. A high ownership concentration means a high level of Herfindhal index (e.g., if the firm has 2 shareholders with 50% ownership each, the *HI* will be 0,5), while a low ownership concentration means a low level of Herfindhal index(e.g., if the firm has 5 shareholders with 20% ownership each, the *HI* will be 0,2: Cepedes et al., 2010).

The mean of the Herfindhal index for Romanian listed firms during the period 2007-2011 is 0,38, which indicates a quite high ownership concentration. Table 1 presents the descriptive statistics of the Herfindhal index.

Table 1: Descriptive statistics of the Herfindhal index during the period 2007-2011

Herfindhal index	2007	2008	2009	2010	2011
Mean	0.37	0.36	0.38	0.39	0.4
Maximum	0.92	0.95	0.95	0.95	0.99
Minimum	0.01	0.01	0	0	0.01

As shown in Table 1 Herfindhal index registered small changes for the analysed period, but there are big differences between minimum and maximum values.

3. Empirical analysis

For analyzing the relationship between ownership structure, performance and capital structure of Romanian listed firms during the period 2007-2011, we define two regressions:

3.1 Variables of the models

The dependent variable used in the first model is *firms' performance* measured in this study as Return on assets (*ROA*). In line with Jensen and Meckling (1976) we expect a positive relationship between ownership concentration and firms' performance.

The dependent variable in the second model is the debt ratio (*DR*). In some studies, the debt ratio is calculated as the ratio of total debt to total assets (e.g., Chen, 2004; Delcoure, 2007; Ozkan, 2001), whereas in other studies it is computed as the ratio of total debt to total debt plus equity in the market and book values (e.g., de Miguel and Pindado, 2001; Nivorozhkin, 2005; Rajan and Zingales, 1995). Because of data availability, in the current study the book values were used instead of market values and the debt ratio was computed as the ratio of total debt to total assets.

In both regressions we used as control variables: *firm size* (*SIZE*) and *asset tangibility* (*TANG*).

Regarding firm size, it must be specified that larger firms have a greater performance and a lower probability of becoming bankrupt, and can therefore contract debt more easily (Myers, 2003). In this paper we use the natural logarithm of net sales as a proxy for the firm size variable and we expect a positive relationship between firm size and performance and the debt ratio.

Asset tangibility is another important factor that influence debt ratio. Tangible assets are assumed to serve as collateral in the case of financial distress, which indicates a positive relationship between tangibility and the debt ratio of firms (Rajan and Zingales, 1995; Titman and Wessels, 1988). Following the approaches initiated by Cornelli, Portes and Shaffer (1998) and Nivorozhkin (2002) asset tangibility was computed in this paper as the ratio between tangible fixed assets and total assets and it was expected a positive relationship between this variable and debt ratio.

Table 2 presents the descriptive statistics for the selected variables for all firms during the period 2007-2011.

Table 2: Descriptive statistics of the variables used in the models

Variables	Mean	Std deviation	Min	Max
DR	0.4	0.45	-2.66	3.25
ROA	0.001	0.16	-2.12	0.37
Tang	0.57	0.22	0.03	0.96
Size	18.34	1.51	14.62	23.53

Note: *DR* = Debt ratio, *ROA* = Return on assets, Tang = Assets tangibility, Size = Firm size

3.2 Methodology and results

In order to assess the effect of ownership concentration of Romanian listed firms on performance and capital structure of these firms, the following regressions are defined:

$$ROA_{it} = a + c_i + \mu_t + b_0 HI_{it} + b_1 DR_{it} + b_2 SIZE_{it} + b_3 TANG_{it} + \varepsilon_{it} \quad (1)$$

$$DR_{it} = a + c_i + \mu_t + b_0 HI_{it} + b_1 ROA_{it} + b_2 SIZE_{it} + b_3 TANG_{it} + \varepsilon_{it} \quad (2)$$

where i= 1,2,…,69; t = 1,2,…,5; c_i are the firm effects; μ_t are the time effects and $\varepsilon_{it}$is the error term.

Firm specific effects (c_i) was included in the models to compensate the omission of other factors which affects firm performance and firm capital structure such as: firm age (King & Santor, 2008) or non-debt tax shield (De Miguel & Pindado, 2001).

Time specific effects are used to account for macroeconomic conditions which affect dependent variables (i.e., economic growth, inflation, financial crisis)

For the first regression, we have chosen a random effects approach for several reasons. First, because N = 69 is large and T = 5 is small the number of parameters to be estimated in a fixed model is large compared to the number of available data points. Second, the N firms are drawn from a large population; hence our data are not exhaustive. Third, random effects are tested by using the Breusch-Pagan Lagrange multiplier test.

Table 3 reports the estimation results for regression (1):

Table 3: Estimation results for regression with performance as dependent variable

Variables	(1)
DR	-0.21***(0.07)
HI	-0.05 (0.04)
Tang	-0.02 (0.05)
Size	0.02***(0.006)
No. of entities	69
No. of observations	205
R^2	0.19

Notes: The regression includes unreported year dummies.

Robust standard errors in brackets.

*** denote significance at the 1% levels.

DR = Debt ratio, *HI* = Herfindhal index, *Tang* = Assets tangibility, *Size* = Firm size.

As can be noted in Table 3, the coefficient for the Herfindhal index is not statistically significant, which indicates that ownership concentration has no significant effect on the performance of Romanian listed firms. These results support the findings of Demsetz and Villalonga (2001) who argued that ownership concentration and performance are endogenous variables. An explanation for the lack of a statistically significant relationship between ownership concentration and performance is given by Mahrt-Smith (2005) who states that it is difficult to measure the effect of type of ownership on firms' performance, unless one type of ownership

controls for the firms' capital structure choice. Debt ratio is negatively correlated with performance, while firm size is positively correlated with performance of Romanian firms.

For the second regression a static panel data model approach (i.e. fixed effects, random effects) was not valid. We use, therefore a dynamic panel data model which requires the use of first order lag of dependent variable as independent variable. The explanation of the use of a dynamic panel data is that Romanian listed firms have a financing behaviour in adjusting to the target capital structure (Brendea, 2014).

In the case of our model the period of time is limited (5 years) compared with the number of firms in the sample (69) and therefore we applied the Arellano and Bond (1991) dynamic panel data estimator. This strategy involves the use of second order lags of the explanatory variables as instrumental variables (De Miguel & Pindado, 2001).

The results of dynamic model estimation are presented in Table 4.

Table 4: Estimation results for regression with debt ratio as dependent variable

Variables	(2)
ROA	-0.17**(0.0)
HI	0.53*(0.29)
Tang	1.1**** (0.17)
Size	0.01 (0.03)
No. of entities	69
No. of observations	205
Sargan test	0.149
No. of instruments	17

***Notes*:** The regression includes unreported year dummies.

Standard errors in brackets.

*, **, *** denote significance at the 10%, 5% and 1% levels, respectively.

Sargan test indicates the validity of the instrumental variables.

The null hypothesis is that „the instruments as a group are exogenous" and *p*-value is reported.

ROA = Firms' performance, *HI* = Herfindhal index,
Tang = Assets tangibility, *Size* = Firm size.

As can be noted in Table 4, the coefficient for ownership concentration is positive and statistically significant at 10% significance level. The positive relationship between ownership concentration and debt ratio for Romanian listed firms contradicts the assumptions of the agency theory, but are in line with the results obtained for developing countries (see Cepedes et al., 2010). In these countries, firms will prefer debt as financing sources to

the detriment of equity, because the issue of new equity means division or loss of firms' control. Firms' performance and assets tangibility are also determinants of capital structure.

Conclusions

In this study we estimated a static and a dynamic panel data models in order to investigate the relationship between ownership structure, performance and capital structure for a sample of 69 Romanian listed firms during the period 2007–2011. On average, these firms have a high ownership concentration, which means that firms' shares are concentrated in the possession of some major shareholders. In addition, the empirical results indicated that it is no relationship between ownership concentration and performance of Romanian firms. Romanian firms' performance is influenced by debt ratio and firm size.

The results of the estimation of the dynamic model showed that ownership concentration and capital structure of Romanian listed firms are positively correlated. These results suggest that major shareholders do not want to lose the control over firm and use debt as financing sources.

In addition, the results indicate that performance and asset tangibility are the statistically significant factors determining Romanian firms' target capital structure. The negative correlation between the debt ratio and performance of Romanian listed firms supports the assumptions of the "new pecking order theory" (formulated by Chen, 2004). More specifically, the financing behaviour of Romanian firms is characterized by the fact that they first use retained earnings as financing resources, then equity and, lastly, debt. The tangibility of assets had a positive effect on the target capital structure of Romanian listed firms, indicating that these firms use tangible assets as collateral.

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