Impact of the ownership structure on the diversification strategy

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1. Introduction

The research concerning the relationship between ownership structure and diversification leads to a certain opposition between the various fields of researches for its theoretical and empirical levels (Amihud and Lev, 1999; Lane et al., 1999). Generally, the investigation following agency theory identifies a negative effect of the existence of large-block shareholders on the level of diversification (Amihud and Lev, 1981; Berger and Ofek, 1995; Denis et al., 1997). As a consequence, diversification is advantageous for the managers, but it’s not the case for the shareholders, where it reduces the value of the firm (Berger and Ofek, 1996). According to the strategic approach, studies show an absence of a link between Controlling shareholders and diversification (Lane et al., 1998; 1999). For the stewardship theory of management, managers try to maximize the company performance, strengthen its growth perspectives by diversifying the activities (Fox and Hamilton, 1994). Finally, there are other studies that suggest in different national contexts, which forms of business ownership affect the level of corporate diversification (Anderson and Reeb, 2003; Collin and Bengtsson, 2000; Ramaswamy et al., 2002; Davis et al., 1997). These arguments emphasize the importance to study the relationship between ownership structure and diversification from a theoretical and empirical point of view (Denis et al., 1999).

Diversification is an important strategic orientation that companies use to maintain their competitiveness and improve their profitability. Firms look for strategic choice in order to increase their value creation, more economy of scale, and better market power (Barney, 1991; Bettis, 1981; Montgomery, 1985; Prahalad and Hamel, 1990). On the other hand, diversification strategy can also enhance more costs related to the difficulties of coordination, to the asymmetry of information, and to the possibility of disagreement between administrators (Denis et al., 2002; Harris et al., 1982).

From another point of view, as regards the nature of the link between the diversification and ownership structure, many studies investigated in developed markets, suppose that large shareholder favors the alignment of the interests, and associated negatively with the level of the diversification of companies (Chen and Ho, 2000; Delios et al., 2008b; Denis et al., 1997; Goranova et al., 2007). However, this relationship is not the same, when we consider the emerging market context as proved by (Claessens et al., 2000).

2. Literature review

Besides, previous studies produced a variety of conclusions concerning the relationship between the diversification strategy, the structure of a property, and the performance (Berger and Ofek, 1995; Chen and Ho, 2000; Delios and Beamish, 1999; Delios et al., 2008a; Khanna and Palepu, 2000; Michel and Shaked, 1984). An explanation of these divergent
results is based on the nature of the companies considered in the empirical investigation. First of all, as indicated above, the link between diversification strategies and certain variables is due to the country context as a developed or emerging market. Another explanation of this divergence is associated with firm diversification behavior; companies can increase their level of diversification for one year but decrease it in the next year.

Considering the hypothesis that diversification is a strategy of maximizing the firm performance and reducing its risk, in particular, diversification is not related (Berger and Ofek, 1995; Denis et al., 1997; Rumelt, 1974), the concentration of the property can actually force the managers to pursue diversification strategy for the best of the shareholders. Based on the agency theory, Perrow (1986) shows that in the presence of concentrated ownership, the managers-owners have fewer reasons for looking for diversification, because they could support (bear) higher costs through this orientation. As a consequence, the interests of the owners-administrators of family type are better aligned with shareholders’ minority and may pursue less diversification. This suggests a negative relation between ownership and diversification (Denis et al., 1997; Goranova et al., 2007; May, 1995).

Comment and Jarrell (1995) indicated that managers who invest a higher percentage of their personal wealth in their companies have strong motivations to reduce their personal risk by diversification. Besides, Shleifer and Vishny (1997), suggested that when companies are effectively controlled by the big shareholders, they can tend to expropriate the minority shareholders. For example, the owners-administrators can oversee the transfer of profits to an affiliated company which they control. They also can reach the goals better reputation by increasing their estimate on the market of employment, (Davis et al., 1997). On the other hand, the owners-managers have no support of the higher costs associated with diversification strategies because they can control the company without the holding of a majority of the shares.

According to the theory of the agency applied to the context of emerging markets, a higher level of concentration will allow improving the alignment of the interests of the owners-leaders with that of the minority shareholders, thus we wait for us for a negative relation between ownership structure and the company diversification strategy. However, when the owners-managers hold participation that exceeds the critical value, they can look for a higher level of diversification which allows them to obtain more private profits of control. So, the relationship between property and the level of diversification is not linear.

Chen and Hsu (2009) indicated a low relation between concentration and the choice of companies to diversify. Shleifer and Vishny (1986) showed that big shareholders are incited to control the management of the company and that their presence improves the strategic decisions. Thomsen and Pedersen (2000) found a positive relationship between the concentration and the diversification of companies. However, the relation is not linear which means the effect of concentration on the level of diversification is not the same for all ranges of ownership. Cho (1998) did not detect a significant link between the shares held by the majority shareholders and the diversification. Other studies developed in the international context (Minguez-Vera and Martin-Ugedo, 2007) found insignificant relations between the concentrated and diversification.

For the management of family firms compared with non-family firms, they are much more motivated for the research for the minimization of the strategic risk or the maximization of the level of diversification. This result is infirmed by Anderson and Reeb (2003) who demonstrated the negative effect of the family property on the diversification strategy. According to Gomez-Mejia et al. (2010), diversification amplifies the problem of the reduction in socio-emotional values. In this case, the willpower to protect the family interests leaves this type of investor reluctant to increase debt level which can explain the negative effect of family ownership on firm diversification strategy.

Bennedsen and Wolfenzon (2000) showed that in the presence of several major shareholders, the control group is the result of a coalition formation game. At the end of the game, two effects can appear. The first is the alignment effect which supposes that more coalition has rights to the cash flows, the more it bears the consequences of its decisions and less has discretionary spending. The second is the coalition effect which considers the coalition that has a small right on cash flow and has the control right among all strong coalitions is the one whose members bear the most expropriation consequences. For Gomes (2005), the presence of several controlling shareholders constitutes, in certain cases, an effective mechanism for the protection of minority shareholders. In their model, the probability of sharing control is effective increases with three characteristics of the firm: Overinvestment, free-cash-flow and financial slacks.

The expropriation of the minority shareholders is pronounced when dominant shareholders hold voting rights superior to cash-flow rights. The empirical investigations made in this context enumerate several mechanisms allowing discrepancy in the power in the company from ownership. It is mainly about the use of pyramid structures, about cross-holdings, about shares with multiple voting rights, and about non-voting share issues (Burkart et al., 1998).

3. Data and methodology

3.1. Description of the sample

The sample of the study includes 30 Tunisian companies listed on the Stock Exchange of Securities Tunis (TSE), observed over a period of 15 years.
allowing us to constitute a cylinder of panel data of 450 companies/year observations. We choose the date 1997 because it marked the continuation of the process of consolidation and regulation of the Tunisian financial market. Moreover, the choice of listed companies is justified by the nature of the data and their availability. Indeed, these companies are obliged to prepare periodic financial statements in accordance with the rules and standards of the Tunisian accounting system. Data were manually collected from the following sources of information: (i) The information documents on each firm, the bond issue prospectus, the prospectus of the share issue, and reports of the business activities of the firm available at the Financial Market Council (CMF). (ii) Financial statements published on the website of each listed firm.

3.2. Choice and measure of the variables

3.2.1. The dependent variable: Diversification and the probability to diversify

To assess the degree of diversification of a firm among its various activities, previous research has suggested two possible approaches: (i) according to Rumelt’s (1974) typology. (ii) as a measure based on indices such as the Herfindahl index or entropy index. According to Khanna and Palepu (1999), the use of an index to measure strategic diversification must verify four axioms: (i) the index must be between 0 and 1, (ii) this index is 0 for a specialization activity (iii), and 1 if there is a perfect diversification, (iv) the pre-order relationship where it is possible to check if \( x_i < y_i \) implies \( i < j \) (where \( x_i \) and \( y_i \) are turnover in the ith industry). To ensure the consistency of the analysis we retain the second approach based on index measures as proposed by Ramaswamy et al. (2002) and Delios and Wu (2005). After Batsch (1993), according to Batsch (1993), both measures are frequently significant in analyzing the diversification or refocusing strategy of the industrial group.

(i) Diversification Herfindahl (DivHerf): This measure uses the Herfindahl concentration index to measure diversification.

\[
\text{DivHerf} = 1 - H
\]

where \( H = \sum_{i=1}^{n} P_i \) and \( P_i \) measures the proportion of the turnover of the business (\( x_i \)) to income ratio in the industry. \( P_i = x_i / X \), \( n \) is the number of the company’s activities. Herfindahl diversification appears to be the complement of the concentration of the company’s operations, meaning by this measure that the total of diversification and concentration must be equal to unity. Several authors have used this method, we can refer to the studies done by Denis et al (1997).

\[
\text{DivHerf} = 1 - \sum_{i=1}^{n} (x_i / X)^2
\]

(ii) Diversification entropy (Entropy): this measure is proposed by several authors: Jacquemin and Berry (1975).

\[
\text{Entropy} = \sum_{i=1}^{n} P_i \log \frac{1}{P_i}
\]

where \( P_i \) represents the share in the company’s turnover in the ith industry. This index is zero when the company operates in one industry and takes log n value when the total income is returned in a fair manner between n industries in which it operates. The advantage of such a measure is its decomposition property of the value of the entropy type indices corresponding to different levels of activity.

We use two qualitative variables bound to both measures of the diversification to know DumDivHerf and DumEntropy. They are defined as follows:

\[
\text{DumDivHerf} = 1 \text{ if } \text{DivHerf}_{it} > \frac{\sum_{i=1}^{30} \sum_{i=1}^{15} \text{DivHerf}_{it}}{450} = 0 \text{ if not}
\]

Also for the variable entropy:

\[
\text{DumEntropy} = 1 \text{ if } \text{Entropy}_{it} > \frac{\sum_{i=1}^{30} \sum_{i=1}^{15} \text{Entropy}_{it}}{450} = 0 \text{ if not}
\]

These two variables when they are equal to the unity, indicate a higher level of diversification compared to the average level of the sector (measured by the average of all the observations). In this case the variable equal to zero which means that diversification has a low level.

3.2.2. The exogenous variables

- Ownership Concentration [MAJ]: Measured by the percentage of the capital held by the three main shareholders. A majority shareholder can invest in the control of the management behavior of the firm because he held the most important proportion of the distributed cash flow (cash flow rights), then he has the possibility of exercising his voting right to approve or refuse any decision which comes from management (voting rights). So, according to Shleifer and Vishny (1989) and Denis et al. (1997), the more the capital is concentrated, the more managers are controlled by limiting their private discretionary profits. The previous empirical results for the last two decades on the concentration of ownership show a positive effect of majority shareholders on the strategic choice of firms (Shleifer and Vishny, 1986; Kaserer and Moldenhauer, 2008). On the other hand, according to Demsetz and Villalonga (2001), the diversification of a firm is conditioned not by the concentration of the capital, but rather by the characteristics of its environment, its market. These results are informed by Mtanios and Paquerot (1999) who find no significant relationship between these two variables.

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• The participation of institutional investors (INST): Measured by the percentage of the capital held by the financial institutions (banks, insurances, pension funds). The structure of the shareholding bases today essentially on the existence of institutional investors which have the highest percentage of the capital of listed companies. The hypotheses of conflicts of interests and the strategies of alignment suggest a negative relation between the institutional property and the diversification strategy of the company. Seetharaman et al. (2001) suggested that institutional investors have a significant impact on the activities of management as well as in the resolution of the problems of agency costs. Pound (1988) suggested the idea that the institutional property serves as a signal for strategic decisions. Therefore, the more the institutional property is important, the more the diversification of the company is better. Table 1 shows measures and expected signs of ownership variables.

| Variables                                              | Symbol | Measure                                                                 | Expected sign |
|--------------------------------------------------------|--------|--------------------------------------------------------------------------|---------------|
| The concentration of the capital                       | MAJ    | MAJ = the percentage of capital held by the top 3 shareholders           | +             |
| Part of institutional investors                         | INST   | INST = The participation of the financial institutions in the capital    | +             |
| Family participation                                    | FAM    | FAM = 1 if Family participates in the capital 0 if not                   | +             |
| Concentration of three big shareholders                 | CONC   | CONC = 1 if MAJ > 0.5, 0 if not                                        | +             |
| Concentration property measured by Herfindahl index    | HH     | HH = MAJ² + MAJ² + MAJ³²                                                  | +             |
| Participation first-largest shareholder                 | MAJ1   | MAJ1 = part of the 1st shareholder                                       | -             |
| Participation 2nd shareholder                           | MAJ2   | MAJ2 = part of the 2nd shareholder                                       | -             |
| Participation 3rd shareholder                           | MAJ3   | MAJ3 = part of the 3rd shareholder                                       | -             |

3.2.3. Other explanatory variables (control variables)

By referring to the previous empirical works examining the relation between ownership structure and diversification, we adopted the following variables:

• The size of the company: SIZE = previous studies consider that firm size as a proxy for information asymmetry (Kang and Stulz, 1996). Grant et al. (1988) supposed that diversification is pursued to obtain more resource availability, more market shares, and gain a scale economy. Other findings show that firm size is positively related to the level of the firm diversification strategy (Denis et al., 1997; Fauver et al., 2003; Lins and Servaes, 1999). On the other hand, Alvazian et al. (2001) found a negative relationship between these two variables. Further, we use the book value of total assets to control any effect of firm size.

• The debts (DEBT): The second control variable is leverage, Grossman and Hart (1986) believed that debt can reduce agency costs of free cash flow. Thus leverage is considered in some way to influence firm diversification strategy. Some studies (Kochhar and Hitt, 1998) have concluded that diversification allows firms to have more debt in their capital structure. We measure this variable by the ratio of long-term debt to total assets. And according to agency theory a negative relationship between debt ratio and the level of firm diversification.

• The age of the company: AGE = this variable measures the degree of maturity of the company. Shumway (2001) asserted that the most significant economic measure of the age of companies is the number of years since its creation. The age affects ownership structure, growth opportunities, increases the exposition in the media.

• The profitability (Prof): According to the optimal control theory applied to economics problems, profitable companies tend to raise more financing of resources internally than externs. Generally, it gives the priority to the use of the available internal resources. Campa and Kedia (2002) considered that firms with weak profitability are more likely to diversify their activities in order to have new opportunities. Ramanujam and Varadarajan (1989) and Montgomery (1994) showed that the relationship between profitability and diversification is positive for related diversification and negative for unrelated diversification.

3.3. Description of the models to be estimated

In order to estimate the probability to diversify for firms, we consider diversification as a dummy variable:

\[
\text{DumDiver} = \begin{cases} 
1 & \text{for firms with high level of diversification} \\
0 & \text{for firms with small level of diversification} 
\end{cases} 
\] (6)

By basing itself on the previous empirical studies, we considered the following specification:

\[
\text{DumDiversification}_{it} = \lambda_0 + \lambda_1 \text{Ownership Structure}_{it} + \lambda_2 \text{CiV}_{it} + \epsilon_{it} 
\] (7)

By using qualitative models as developed, we can consider the problem of diversification as a choice that a firm makes to be diversified or not. Many methods can be used as the linear model of probability, models Logit, model Probit, model Tobit. The econometric modeling, in this case, consists in
putting in relation the decision of choice of the individual with the environment of choice; if we associate with this environment a stochastic utility function, the choice will be made according to the criterion of maximization of this one. This type of regression allows to determine the probability that a company is classified in the group of the diversified firms or not. We suppose that the dichotomous dependent variable which can take the value 0 if the company is classified weakly diversified, the value 1 in case firm is classified as strongly diversified, this model is proposed in the following way: We suppose that there is an unobserved latent variable $Y_i$ that is linearly related to $X$:

$$y_i^* = x_i \beta_i + u_i$$  \hspace{1cm} (8)

with $Y^*$ variable is not directly observed, $X_i$ is a vector with k dimension of exogenous variables $\beta_i$ is the vector of the coefficients to be estimated and $u_i$ is the stochastic error term. In practice, the observed dependent variable is determined by whether $Y_i^*$ exceeds a threshold value:

$$y_i = 1 \text{ if } y_i^* > 0$$

$$= 0 \text{ if } y_i^* \leq 0$$  \hspace{1cm} (9)

then we have:

$$\Pr(y_i = 1) = \Pr(y_i^* > 0) = \Pr(x_i \beta_i + u_i > 0) = F(-x_i \beta)$$  \hspace{1cm} (10)

where $F$ is the cumulative distribution function of $u$. The Logit model is based upon the cumulative distribution function for the logistic distribution:

$$\Pr(y_i = 1) = 1 - \frac{e^{-x_i \beta}}{1 + e^{-x_i \beta}} = \frac{e^{-x_i \beta}}{1 + e^{-x_i \beta}}$$  \hspace{1cm} (11)

So the functional form of the Logit model is:

$$\Pr(y_i = 1) = P_i = \frac{e^{x_i \beta}}{1 + e^{x_i \beta}}$$  \hspace{1cm} (12)

Pi being an increasing function of $y_i$, we shall have:

$$\log \left( \frac{P_i}{1 - P_i} \right) = y_i \beta_i + u_i$$  \hspace{1cm} (13)

The category of logit models is beneficial, as it does not require the hypothesis of normality on predictors. Secondly, according to Ohlson (1980), Logit models give a probabilistic output and thus no score has to be transformed into a probabilistic measure, which might be an additional source of errors.

4. Estimations results

Our objective in this development is to analyze the effect of ownership structure on the probability of diversification of Tunisian companies. To be made we proceed in two stages:

- Estimate in first point the Logit model by using the above specification (Eq. 8) where $Y_i$ a dummy variable (0 if the firm is weakly diversified, and 1 if it is strongly diversified). The level of diversification is calculated with regard to the average of the set of observations:

$$Y_i = \text{DumDiversification}_{it} = 1 \text{ si } \text{Diversification}_{it} > \frac{\sum_{t=1}^{T} Y_{i,t} \text{Diversification}_{it}}{450} = 0 \text{ if not }$$  \hspace{1cm} (14)

- Calculate in a second stage the probability of diversification according to Eq. 12.

4.1. The results of the estimation Logit and the probability of diversification

We have considered 3 periods in our sample: 1997, 2002, 2007, on 2011. The results of the estimation of the first stage; considered in the models in Table 2.

**Table 2: Estimation of Logit model**

| variables     | 1997     | 2002     | 2007     | 2011     |
|---------------|----------|----------|----------|----------|
| intercept     | 1.071    | 2.458    | 11.477   | 5.773    |
| MAJ1          | 5.322    | 0.892    | -0.693   | 12.393   |
| MAJ2          | -3.310   | 30.481   | 10.692   | 30.633   |
| MAJ3          | 5.539    | -26.67   | 2.355    | 37.740   |
| Size          | -0.869   | -1.336   | -1.377   | -9.567   |
| DEBT          | 7.721    | -0.071   | -5.790   | 10.154   |
| AGE           | 0.013    | 0.055    | 0.010    | 0.171    |
| SOL           | 5.373    | 3.508    | -4.581   | -5.796   |
| PROF          | -18.572  | -14.186  | 13.124   | -12.68   |
| Log likelihood| -14.934  | -11.246  | -15.715  | -6.5018  |
| McFadden R-squared | 0.256550 | 0.353560 | 0.221635 | 0.685965 |
| Akaike info criterion | 1.650446 | 1.349760 | 1.647697 | 1.035345 |
| Schwarz criterion    | 2.074779 | 1.770119 | 2.068056 | 1.455705 |
| Hannan-Quinn criteria | 1.783342 | 1.484237 | 1.782174 | 1.169822 |
Contrary to classic regression, the coefficients values of the binary model are not easy to interpret as the marginal effect of the dependent variable. For the Logit model, the marginal effect of $x_i$ on the conditional probability is given by:

$$\frac{\partial \operatorname{Pr}(Y=1)}{\partial x_i} = -f(-x_i\beta_j) \cdot \beta_j$$

(15)

where $f(x) = dF(x)/dx$ is the density function corresponding to $F$, the direction of the effect of a change in $x_i$ depends only on the sign of the $\beta_j$ coefficient. Positive value of $\beta_j$ imply that increasing $x_i$ will increase the probability of the response, negative values imply the opposite.

For periods prior to the 2007 financial crisis, the three major shareholders are not universally agreed on the increase or decrease in the level of diversification of the firm. The first largest shareholder is clear in its behavior: It is for a High level of diversification during periods of crisis and a narrowing in the crisis. The other two major shareholders are conflicts before the crisis and are positively coalition during and after the crisis. These results are in part confirming the earlier studies. Furthermore, that the common sense between large shareholders and diversification is explained as follows: for blockholders as insiders some authors find a negative association between these two variables (Denis et al., 1997). In addition, inside blockholders are also usually present on the board of directors. That means that they are legally liable for failure to represent shareholder interests. Blockholders who are also managing the company are very alert not to reduce firm value. Over diversification is one of the ways which can reduce the value of the firm. In comparison with inside blockholders, outside blockholders are large shareholders who have no links with the company but have a financial interest in the operating performance. They are only getting their part of the profit, but they do not participate in company management. The relationship between outside blockholders and other shareholders of the company is similar to the agent-principal problem. Since outside blockholders do not have any link with the firm, they cannot oversee the real situation of how it is being managed and that is why they are being very alert of what top management is doing. Thus, when shareholders have a substantial ownership position in a firm as blockholders do, they are willing to exercise their authority. That's why they are willing to actively monitor strategy formulation, preventing over-diversification.

For the other control variables, old firms are more willing to increase the level of diversification than younger firms. However, firm size decreases the probability to be more diversified. The effects of debt, solvency, and profitability are not having the same sign during all periods. Before years of the financial crisis, the likelihood of diversification is higher when firms contact more debt, have more solvency for years before the crisis, this sign is opposite for the period after crisis.

The probability of diversification and the determination of the score $Y$ is not important in itself. Indeed, to be able to distinguish companies strongly diversified from those weakly diversified, it is important to calculate the probability to belong to this family of diversified companies. This probability is reckoned in the following way:

$$P = p\left[\frac{Y = 1}{x}\right] = \frac{1}{1 + e^{-x}}$$

(16)

To classify companies with higher and lower probability of diversification, the rule of decision consists in comparing the probability $P$ of the equation with regard to a critical value. The value criticism so much $P^* = 0.5$.

- A company is considered as strongly diversified if the value of the probability $P$ is superior to $P^*$.
- It is considered weakly diversified if this probability is lower in $P^*$.

The board gives us the results of calculations of this probability for every company during the periods of study and the probability averages of all the companies. According to the obtained results, we notice that:

- The least diversified companies are the ones observed during 2002 (during the crisis on September 11th, 2001) or the crisis 2007 what means that during these events companies are more and more shower at the risk in the development of their activities on an international scale.
- The probability of average diversification did not exceed 50% what means that on average companies do not begin strategies of maximal diversification. In other words, the made expansions that are by product or by market are made in a slow or progressive way to adapt themselves to the unforeseen of the new economic and financial environment.
- The branch of industry is more inclined to diversify (64%) their activities compared with the financial sector (33%). This result (profit) means that industrial companies find more grounds and opportunities for investments (compared to established financiers) than national or international in the scale (ladder) to increase their turnovers or increase their market shares. Table 3 shows the estimation of the probability of diversification by means of the model LOGIT.

The problem of classification in priori according to the model LOGIT; from this critical value ($P^* = 0.5$), it is possible to estimate the robustness of the specification Logit in the distinction between strongly diversified and begun weakly diversified companies and to compare its relevance with regard to (compared with) the discriminating analysis.
The calculation of a rate of correct classification allows judging the robustness of the model. This rate of classification is calculated in the following way:

\[
\psi = \frac{\text{Total Correct Classification}}{\text{Total Classification in Priori}}
\]

This rate is a weighted average rate between the classification of the strongly diversified companies and those weakly diversified. In another term, this rate spells as follows:

\[
\psi = \frac{\psi_{\text{strongly diversified}} N_{\text{strongly diversified}} + \psi_{\text{weakly diversified}} N_{\text{weakly diversified}}}{N_{\text{strongly diversified}} + N_{\text{weakly diversified}}}
\]

The results show that the percentage of correct classification oscillates between 67% and 90%, which means that the model possesses a predictive power maturing enough during these years. Table 4 shows classification according to model LOGIT.
5. Conclusion

A major motivation for this research was to integrate existing literature on blockholder ownership and diversification and explore the relationship between them. I initiated the research question: "What is the relationship between blockholders and the likelihood of firm diversification?" The findings show that the first largest shareholder is clear in its behavior; It is for a High level of diversification during periods of crisis and a narrowing in the crisis. The other two major shareholders are conflicts before the crisis and are positively coalition during and after the crisis. Several implications can be made from the aforementioned hypotheses and results of the analysis. The finding that the firm’s probability level of diversification is negatively influenced by the presence of outside blockholders is in line with other authors who argue that the relationship between outside blockholders and other shareholders of the company is similar to the agent-principal problem. Because outside blockholders are not involved in firm management, they are worried about managers and other shareholders over-diversify the firm, and since they have significant authority in a firm, they are willing to use it in order to influence the firm’s value. Firm characteristics increase the probability of a firm to diversify, however, it is being observed only in business diversification. However, firm size decreases the probability to be more diversified. The effects of debt, solvency, and profitability are not having the same sign during all periods. Before years of the financial crisis, the likelihood of diversification is higher when firms contact more debt, have more solvency for years before the crisis, this sign is opposite for the period after crisis.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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