Director ownership and performance of small and medium enterprises: insights from Northeast Italy[1]

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Abstract

Purpose of the paper: This article examines the relationship between the proportion of shares that are owned by directors and a firm's financial performance in small and medium enterprises (SMEs).

Methodology: We collected data on ownership and director structures from 214 SMEs in the provinces of Verona and Vicenza (Italy). We used the return on assets (ROA) ratio as a proxy for financial performance over a 4-year period (2014-2017) and implemented an ordinary least squares (OLS) regression model with time-period and industry fixed effects.

Results: We found a statistically significant correlation between director ownership and the ROA ratio and identified a nonlinear relationship indicating that the influence of director ownership on performance may be positive or negative and that both the convergence of interests and entrenchment effects are present, depending on the level of ownership and other contextual variables such as it being a family firm, firm age and generational change.

Research limitations: Despite our efforts, reverse causality problems cannot be completely excluded. Collecting data in a limited geographical context over a four-year period restricts the generalization of our results and the use of the Likert scale (1-5) to evaluate managerial ownership may reduce the accuracy of our analysis.

Practical implications: Directors and shareholders should carefully consider the benefits deriving from director ownership in overlapping roles, and regulators could better define corporate governance models.

Originality of the paper: This study specifically addressed the issue of director ownership in SMEs by considering their relevant contextual variables, such as family firm, firm age, and generational change.

Key words: director ownership; SMEs; financial performance; ROA; Italy

1. Introduction

In the economic literature, the separation of ownership and control-as well as the consequent conflicts between shareholders and managers and related governance issues-has been studied extensively, starting with the fundamental works of Berle and Means (1932), Jensen and Meckling

(1976), Fama (1980), and Fama and Jensen (1983). One of the solutions to this agency problem that has been proposed by many authors has been to increase managerial ownership in the firm, thereby aligning the interests of managers with those of shareholders (Fama and Jensen, 1983; Jensen and Meckling, 1976; Lewellen, 1969).

Stemming from these considerations, the relationship between managerial ownership and the firm's financial performance has been widely investigated in empirical studies, mainly in large companies in the United States and the United Kingdom (Benson and Davidson, 2009; Cho, 1998; Davies *et al.*, 2005; Florackis *et al.*, 2009; Himmelberg *et al.*, 1999; Iturralde *et al.*, 2011; McConnell and Servaes, 1990; Morck *et al.*, 1988; Short and Keasey; 1999, Stulz, 1988). Conversely, a few scholars like Keasey *et al.* (1994), and Mueller and Spitz-Oener (2006) focused on more numerous but less structured companies, i.e. small and medium enterprises (SMEs), in the United Kingdom and Germany, respectively. To date, no consensus regarding the nature and characteristics of this relationship has been reached because the studies' methodologies and results were incongruent.

SMEs are the backbone of the world economy. In the non-financial sector, they constitute a large majority of companies in OECD countries. They employ more than 50% of the workforce and generate more than 50% of added value (OECD, 2017). In SMEs, owners tend to be directly involved in both governance and management (Barontini and Caprio, 2008; Bruni, 1990). Director ownership, one of their internal corporate governance mechanisms, is very common and linked to the role and influence of the families that control SMEs in about 70% of cases (Bennedsen et al 2007; La porta *et al.* 1999).

This study intends to contribute to the existing literature by focusing on the relationship between managerial ownership and financial performance in SMEs. In particular, by using an ordinary least squared (OLS) regression model with time period and industry fixed effects and employing a panel data with financials of SMEs for the 2014-2017 period, we found a positive and non-linear relationship between director ownership and ROA ratio, which is a proxy for financial performance. Moreover, our data supports the hypothesis that both the degree of ownership of the largest single shareholder and family control have an influence on company financial performance. These results have practical implications, especially because, regarding the relationship between director ownership and financial performance, they outline a complex S-curved relationship combining the alignment of interests and entrenchment effects. When defining their ownership, entrepreneurs should consider that very low or very high values of director ownership should lead to higher financial performance; this holds true for concentrated ownership as well, particularly in a non-family firm.

The rest of the paper is structured as follows: in Section 2, we summarize the main research that has been conducted on this topic and formulate our hypotheses. Section 3 describes the methodology, the model and variables that were used and presents the empirical results. The last section summarizes the most important results and highlights certain limitations of the study.

2. Literature review and hypotheses

2.1 Ownership structure and firm performance

Ownership and control structures that have an effect on firm performance have been widely investigated in the literature, particularly as regards large corporations. The well-known agency problem relies on the fundamental separation between ownership and management (Jensen and Meckling, 1976). Managers tend to pursue their personal interests to the detriment of shareholders; therefore governance mechanisms need to be introduced to align the interests of these two opposed groups (Agrawal and Knoeber, 1996; Reboa, 2002). According to Jensen and Meckling (1976), ownership structure, executive compensation and board composition are determined reciprocally and based on the nature of the firm's activity, which influences the firm's performance. Ownership concentration, in the form of large-block shareholders, is a very well-known mechanism around the world to control agency problems (La porta *et al.*, 1999). However, ownership concentration can generate inefficiencies in allocating corporate control, low transparency, and opportunistic behavior (Pilotti, 1991; Schillaci, 1997). The drawbacks, in terms of private benefits associated with ownership concentration, could be exacerbated in family firms, as those benefits remain with the controlling family (Villalonga and Amit, 2006; Iturralde *et al.* 2011). Managerial ownership is a corporate governance mechanism that aligns the two opposing interests. From a theoretical point of view, when managers have an ownership interest in the firm, they are less likely to waste corporate wealth because they are directly involved (De Mattè, 1988; Demsetz, 1983; Morck *et al.*, 1988). Ownership structure represents a mechanism to reduce these conflicts and increase returns for shareholders. American public companies adopt stock option plans and other forms of managerial involvement in ownership, thus creating a *convergence of interests* because managers tend to pursue corporate wealth (Jensen, 1993; Jensen and Meckling, 1976; Morck *et al.*, 1988). According to agency theory, a *zero agency-cost firm* is one where the manager is the firm's sole shareholder (Jensen and Meckling, 1976). On the contrary, Ang *et al.* (2000) found that agency costs were inversely related to the manager's ownership share but significantly higher when an outsider rather than an insider manages the firm. Singh and Davidson (2003) argued that in large corporations, managerial ownership significantly alleviated principal-agent conflicts and reduced agency costs even by means of other agency deterrent mechanisms (e.g., board size and composition). Principal agent conflicts exist in both owner-manager and owner-director relationships. Significant shareholdings by the BoD may create the right incentives for the effective control and supervision of managers because of the integration of ownership and control (Bhagat *et al.*, 1998) although it may not guarantee the best returns for shareholders (Demsetz, 1983; Demsetz and Villalonga, 2001). Agency problems could arise between insiders and shareholders but also among shareholder categories, between large and small shareholders or between family and non-family members (Maury and Pajuste, 2005). According to the *entrenchment* hypothesis, high managerial ownership can

negatively affect market valuation when non-manager shareholders find it difficult to control managers who own many shares (Fama and Jensen, 1983; Morck *et al.*, 1988). Family firms could also suffer from a similar entrenchment phenomenon (Gnan *et al.*, 2015, Schillaci and Faraci, 1999). Indeed, in family SMEs, controlling family members could pursue their own interests rather than the interests of non-manager family members and other minority shareholders. Conversely, family firms benefit from increased stewardship, long term focus, and reduced agency costs (Cucculelli and Micucci, 2008). The combination of the two previous phenomena (convergence of interests and entrenchment) in SMEs suggests the presence of a nonlinear relationship between director ownership and firm performance (Acharya and Bisin, 2009; McConnell and Servaes, 1990; Morck *et al.*, 1988; Short and Keasey, 1999). However, research on this issue over the past years has mainly focused on large companies without considering other relevant contextual variables in SMEs.

As regards large companies, many studies investigated the relationship between managerial or insider ownership and firm financial performance by using different quantitative models such as ordinary least squares regression, two-stage or three-stage least squares regression, structural equation model, simultaneous equation system, and generalized method of moments. Tobin's Q was probably the most frequently used outcome variable for listed companies, sometimes in combination with other measures, whereas the ROA ratio was the most used among financial ratios. Unfortunately, we cannot identify convergent results in both sign and shape for this supposed relationship. A substantial positive influence was found by Adams and Santos (2006), Bhagat *et al.* (1998), Chen *et al.* (2003), Core and Larcker (2002), Drakos and Bekiris (2010), Fahlenbrach and Stulz (2009), Farrer and Ramsay (1998), Florackis *et al.* (2009), Kole (1995), Mehran (1995), Rose (2005), thus supporting the alignment of interests phenomenon. In contrast, Benson and Davidson (2009), Coles *et al.* (2012), Craswell *et al.* (1997), Davies *et al.* (2005), de Miguel *et al.* (2004), Hermalin and Weisbach (1991), McConnell and Servaes (1990), McConnell and Servaes (1995), Morck *et al.* (1988), Short and Keasey (1999) identified a non-linear relationship, often in a quadratic form (U-shaped curve), highlighting the presence of both alignment and entrenchment effects. Conversely, Cheung and Wei (2006), Cho (1998), Fishman *et al.* (2008), Himmelberg *et al.* (1999), Loderer and Martin (1997), Zhou (2001) found negative, null or impossible-to-determine effects on financial performance.

The above-mentioned studies mainly focused on large companies, whereas only a few authors analyzed SMEs, which are our target. In particular, Keasey *et al.* (1994) found that the return on total assets reached its maximum at 68.2% of director ownership, then decreased (inverted U-shape curve) in a sample of UK SMEs. In a sample of German SMEs, Mueller and Spitz-Oener (2006) reported increasing performance with managerial ownership up to approximately 40% without a significant entrenchment effect at higher values. In SMEs, at levels where managers could become entrenched compared to outside owners, managers maximized company value rather than their personal interests.

The above reported literature does not adequately cover the SMEs' context, nor do they consider other relevant contextual factors like family firm influence or the number of generational changes that characterise their ownership structures (Calabrò *et al.* 2008). Indeed SMEs cannot be considered "large companies on a small scale".

Several studies analyzed performance differences between family and non-family firms, which constitute the majority of companies in most OECD countries, with mixed results (Anderson and Reeb 2003; Barontini and Caprio, 2006; Gallucci and Santulli 2016; Gallucci *et al.* 2018; Oswald *et al.*, 2009; Villalonga and Amit, 2006). One of the difficulties in finding a solution to the presence and nature of this supposed superior performance is due to the discording definitions of a family firm (Astrachan *et al.*, 2008; Mazzi, 2011).

Other studies investigated the family attribute in relation to company financial performance, distinguishing family involvement in ownership and that in governance (Sciascia and Mazzola, 2008). Family firm governance is distinct from that of public and private non-family firms (Schillaci *et al.*, 2002), and is influenced by the company-family relationship (De Massis *et al.*, 2013), level of parental altruism (Lubatkin *et al.*, 2005), and family-to-business support (Powell and Eddleston, 2017).

Family firms tend to be closed to outsider directors and maintain a typical inside ownership, although other situations exist (De Massis *et al.*, 2013; Schillaci and Faraci, 2002).

In large firms, a company's financial performance has been found to be influenced by the percentage of ownership of the largest shareholder. Demsetz and Lehn (1985) found limited association between the two terms considering the five and twenty largest shareholders. Maury and Pajuste (2005), upon considering listed firms, reported a positive effect of a more equal dispersion of voting rights on financial performance. Perrini *et al.* (2008), regarding the Italian stock market, found a positive influence of high ownership values of the first five shareholders on performance.

The strong ownership of directors could damage minority shareholders' interests (Shleifer and Vishny, 1986). We believe that a single or majority shareholder could also be beneficial for company financial performance in SMEs by offering stability and unique leadership to the business.

2.2 Hypotheses

According to our literature review, our first hypothesis (HP1), is that a greater director ownership has a positive impact on financial performance. In addition, a non-linear relationship between managerial shareholding and financial performance has been suggested, which leads to our second hypothesis (HP2) that there is an S-shaped relationship between the percentage of equity shares owned by directors and ROA ratio in SMEs. We also hypothesize (HP3) that some factors - such as firm age, family business, and generational change - influence that relationship.

3. Empirical research: model, data and analysis

3.1 Empirical model

We used an ordinary least squared (OLS) regression model to test our hypotheses. The ROA_{it} ratio is used as a proxy for financial performance and acted as a dependent variable (Keasey *et al.*, 1994) for each company i and year t (where t = 2014, …, 2017). This ratio holds a wide consensus and validity across industries, does not require specific information on market capitalization, and is not impacted by the financial, non-current and fiscal position of a company (Anderson and Reeb, 2003; Arosa *et al.*, 2013). We did not consider Tobin's Q as a performance measure because it is unavailable for unlisted SMEs and because it be affected by severe accounting practice problems (Demsetz and Villalonga, 2001). To limit the problem of omitted variables, we introduced a variety of control variables (e.g., firm size and leverage) in our model, inserted dummy variables to account for both industry-and year-fixed effects, and used financial panel data. We lagged the independent and control variables to allow their effect on a company's financial performance to emerge, limiting the reverse-causality problem (Cornett *et al.*, 2007; Mazzola *et al.*, 2013). Our model [1] was:

$$ROA_{i,t}=\beta_0+\beta_1\ DIR\_OWN_{i,2014}+\beta_2 LARG\_SH_{i,2014}+\beta_3\ F\_AGE_{i,2014}$$
$$+\beta_4\ M\_SIZE_{i,2014}+\beta_5\ FAM\_OWN_{i,2014}+\beta_6\ GEN\_CH_{i,t}$$
$$+\beta_7\ TOT\_ASS_{i,t}+\beta_8\ SALES\_VAR_{i,t}$$
$$+\beta_9\ LEVER_{i,t}+\beta_{10}\ Y2015+\beta_{11}\ Y2016+\beta_{12}\ Y2017$$
$$+\beta_n\ INDUSTRYdummies+\varepsilon_{i,t} \qquad [1]$$

3.2 Sample characteristics

We surveyed 5,000 unlisted SMES by using a questionnaire to test our hypotheses. We selected companies located within a limited geographic area to ensure the homogeneity of the sample and easy contact (De Massis *et al.*, 2013). Sample criteria included: (1) Operating in provinces of Verona and Vicenza, (2) activity in manufacturing (C), construction and building (F), and grocery and distribution (G) macro sectors, (3) small and medium-sized companies, and (4) limited liability companies. Our selected industry distribution accounted for about half of the non-financial firms. We limited our analysis to SMEs with 10-249 employees, thereby excluding micro companies because of their lack of suitable managerial control and corporate governance mechanisms. We eliminated companies in special situations that could affect data (e.g., insolvency, liquidation and zero activity), those with particular legal forms such as consortiums and cooperatives, and unlimited liability companies (Italian legislation does not require them to disclose financial information). We identified about 5,000 companies that we contacted in 2016 and 2017 (ISTAT the Italian Statistic Institute identified 5,040 companies as of 31.12.2014, whereas the Italian Public Register Of Companies, excluding consortiums and cooperatives, identified 4,905 companies).

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3.3 Sample data

We directly contacted the chairperson, CEO, or CFO via email or telephone to explain the purpose and importance of our research and provide detailed instructions on how to reply. They were asked to answer questions about their situation in 2014 and to describe any changes that may have occurred during the 2014-2017 period. The questions and possible answers were formulated using a Likert (1-5) scale to reduce the respondents' bias. We carried out a pilot test on a sample of 10 companies to better calibrate the Likert scale. The financial statement data for the 2014-2017 period were extracted in 2017 and 2018 from the AIDA database (Bureau van Dijk). In 2018 we contacted 20 SMEs again to verify and reconfirm their submitted data. Between March and June 2019 we met with 15 respondents to discuss data, show findings and receive feedback and suggestions.

We received 276 replies; of these we excluded companies with ±100% sales variation or ±30% EBIT/sales; earnings before interest, taxes, depreciation and amortisation (EBITDA)/sales; EBIT/total assets; or net income/total assets. Return on equity (ROE) must not have exceeded ±60%. We also excluded companies for which financial data were not yet available for our four year-period (balanced panel data). In the end, we gathered 214 valid questionnaires for our study. We did not find any significant difference between the first and last quartile of respondents ($p < 0.05$), thus confirming the non-biased validity of the answers. The total number of firm-year observations was 856.

3.4 Definition of variables

Our model used the following variables:
- Director ownership (DIR_OWN): The percentage of shareholders who play an active role as directors. This variable was measured using a Likert scale from 1 to 5: 1, null (0-5%); 2, low (6-20%); 3, discrete (21-30%); 4, high (31-49%); 5, very high (>50%).
- Largest shareholder (LARG_SH): The percentage owned by the single largest shareholder. This variable was measured using a Likert scale (1-5): 1, null (0-5%); 2, low (6-20%); 3, discrete (21-30%); 4, high (31-49%); 5, very high (>50%).
- Firm age (F_AGE): The natural logarithm of the number of years since the firm was founded. According to Arosa *et al.* (2013) and Capasso *et al.* (2015), profitability is inversely correlated to firm age.
- Medium size (M_SIZE): This variable received a value of 1 when the firm was medium sized (50-249 employees), 0 otherwise.
- Family Owned (FAM_OWN): This variable received a 1 when the company was family owned, according to Corbetta's (1995) definition of family firms, 0 otherwise. We selected this definition, which requires for more than one family member to own shares, because it is widely accepted in Italy. (Family members were identified by their surnames [Arosa *et al.*, 2010; De Massis *et al.*, 2015]).
- Generational changes (GEN_CH): Respondents were asked about the

number of generational changes from the founding of the company. The literature reports both positive and negative effects of generational changes (Bennedsen *et al.*, 2007; McConaughy and Phillips, 1999.

- Total assets (TOT_ASS): The natural logarithm of total assets was used as a control variable. Previous studies on SMEs found bigger firms to be more profitable (Arosa *et al.*, 2013; Barontini and Caprio, 2006).

- Sales revenues variation (SALES_VAR): The variation of sales, measured as (sales1 − sales0)/sales0, was used as a proxy for growth. In other studies, growing firms reported higher profitability (Arosa *et al.*, 2013).

- Leverage (LEVER): We used the ratio of total debt to total assets to measure the borrowing level of the firm. Based on previous studies, we expected an inverse relationship with performance (De Massis *et al.*, 2013).

- INDUSTRY j: Dummy variables for each NACE/ATECO industry code (two digit level) received a score of 1 if the company came under the NACE code (0 otherwise). These variables were required for the industry fixed-effect regression.

- Y2015, Y2016 and Y2017: Dummy variables scored 1 if financial data referred to 2015, 2016 or 2017 (and 0 otherwise). These three variables were required for the time-period fixed-effect regression.

- Financial performance: The ROA ratio (EBIT over total assets) was defined as the dependent variable. Alternative measures employed in this study included the ROA^ ratio (net income over total assets) and Return on sales (ROS) ratio (calculated by dividing EBIT by sales revenues).

3.5 Descriptive statistics

Table 1 contains the descriptive statistics for the variables defined above, including mean, standard deviation, minimum and maximum. The mean value of directors' shareholdings for our sample firms was quite high (close to 50%, Likert 4.5), indicating an high overlap between owners and managers. There were many large single shareholders (on average close to 40% of shares, Likert 4.3), which was expected for SMEs. In our sample, 34% of companies were medium-sized, over 70% of SMEs were family firms. Manufacturing (C), constructions (G), and grocery and distribution (F) firms accounted for 80%, 10%, and 10% of the total sample, respectively. The number of generational changes remained on average slightly lower than 1. In the 2014-2017 period, on average SMEs had a positive sales variation trend (+4.7%) and adequate profitability for both ROA ratio (mean 0.061, standard deviation 0.059) and ROA^ ratio (mean 0.036, standard deviation 0.046). Margins (ROS ratio) were near 0.05 (standard deviation 0.054). Leverage of SMEs (debts to total assets) was 0.538.

To test the representativeness of the sample data, we calculated the ROA and ROA^ ratios, total assets and leverage for all of the companies that met our inclusion criteria in the provinces of Verona and Vicenza. By applying the same cuts used for the sample companies, the initial 5,000 SMEs were declined to 3,704 or 3,051 when requiring balanced

panel data. The Z-test (p<0.05) applied in a comparison of the two groups found similarities for most of the variables. Our sample size exceeded the minimum requirements for the extension of validity of our analysis for both a questionnaire using the (1-5) Likert scale and our panel data. None of the correlation coefficients among the variables exceeded 0.7, so multicolinearity should not be an issue (the correlation matrix is available upon request).

Tab. 1: Descriptive Statistics of Variables

Variable	N	Min	Max	Mean	Std. dev.
DIR_OWN	852	1	5	4.502	1.166
LARG_SH	848	1	5	4.334	0.972
F_AGE	856	0.693	4.898	3.299	0.675
M_SIZE	856	0	1	0.336	0.473
FAM_OWN	856	0	1	0.734	0.442
GEN_CH	568	0	5	0.940	0.938
TOT_ASS	856	13.291	18.511	15.875	1.163
SALES_VAR	856	- 0.683	0.868	0.047	0.162
LEVER	856	0.000	0.937	0.538	0.198
ROA	856	- 0.202	0.288	0.061	0.059
ROA^	856	- 0.232	0.187	0.036	0.046
ROS	856	- 0.225	0.275	0.055	0.054

Source: Author's own elaboration

3.6 Empirical results

Table 2 column 1 reports the results of the multivariate analysis of director ownership on firm performance using model [1].

Our findings (column 1) indicated a significant and positive influence of director ownership (DIR_OWN) on firm financial performance (adjusted R^2 = 0.341; F-statistic = 9.162, p < 0.01) as supposed by HP1. This result is valid for both small and medium-sized firms independently. The control variables were significant and both firm age and leverage revealed a negative influence, whereas medium size and sales variation had a positive effect. Family firms demonstrated the worst financial performance. Our analysis improved by including a polynomial expression for director ownership (DIR_OWN) in model [1].

According to Allison (2012), inserting a multiplicative term in a regression model is nothing to be concerned about because multicollinearity has no adverse consequence with polynomial terms. In any case, we took two actions: 1) we mean centered the director ownership variable (which reduces correlation within regressors), and 2) we verified the absence of excessive multicollinearity in the model by using the collinearity diagnostics table reported in SPSS.

Tab. 2: Multivariate Analyses of Director Ownership on Firm Performance

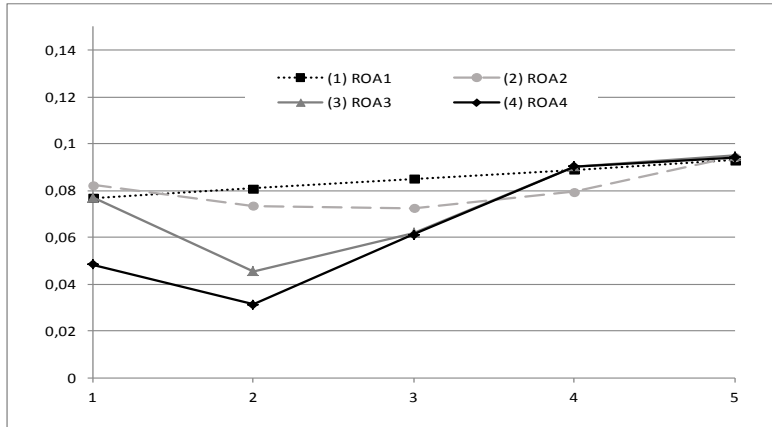| Variable	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA^
(Constant)	0.200***	0.196***	0.243***	0.245***	0.228***	0.096***	0.105***
DIR_OWN	0.009***	0.030***	0.018**	0.015**	0.025***	0.004	0.005***
DIR_OWN^2	--	0.008***	-0.024**	-0.016**	-0.015*	-0.015*	-
DIR_OWN^3	-	-	-0.008***	a	a	a	-
DIR_OWN^4	-	-	-	0.002***	0.002***	0.001***	-
DIR_OWN x FAM_OWN	-	-	-	-	-0.012**	-	-
LARG_SH	-	-	-	-	0.010*	-	-
LARG_SH x FAM_OWN	-	-	-	-	-0.011*	-	-
F_AGE	−0.011***	-0.011***	−0.011***	-0.011***	-0.011***	-	-0.005**
M_SIZE	0.016**	0.017***	0.022***	0.022***	0.021***		0.011**
FAM_OWN	-0.023***	-0.020***	-0.020***	-0.020***	-0.018**	-	-0.021***
GEN_CH	-0.002	-0.003	-0.004	-0.004	-0.004	-	-0.001
TOT_ASS	−0.001	-0.001	−0.003	-0.004	-0.003	-	0.001*
SALES_VAR	0.081***	0.091***	0.092***	0.092***	0.091***	-	0.065***
LEVER	-0.081***	-0.098***	-0.102***	-0.103***	-0.105***	-	-0.095***
N.	856	856	856	856	856	856	856
Adjusted R^2	0.341	0.355	0.363	0.367	0.368	0.159	0.381
F-statistic	9.162***	9.424***	9.519***	9.635***	9.008***	6.175***	10.691***

***$p < 0.01$, **$p < 0.05$, *$p < 0.10$. Coefficient a excluded for multi-collinearity. Dummy variables for year and industry fixed effects are not reported.

Source: Author's own elaboration

Columns 2, 3, and 4 of Table 2 shows the results of a quadratic or even higher polynomial order relationship between director ownership and financial performance. From column 1 to column 4 the adjusted R^2 improved (p<0.01), indicating that subsequent models were better and obtaining a more precise shape of the relationship between director ownership and ROA ratio that conveys the complexity of the nonlinear relationship between the two variables (Davies *et al.*, 2005). The other key control variables remained significant and maintained similar coefficient values over the various columns. The older the company and the higher the leverage, the worse the performance; whereas the variation of sales and medium size variables positively influenced firm performance. Graph 1 plots four different lines to represent the four versions of model [1] (columns 1 to 4). We transformed the mean centered data of the independent variable to the original 1-5 Likert scale. The (1) ROA1 line (dotted) illustrates a growing effect of director ownership on firm performance, whereas the second line, (2) ROA2, the third grey line (3) ROA3, and fourth (4) ROA4 solid black line draw three curves near the previous (1) ROA1 line. According to (2) ROA2, the relationship between the two variables is U-shaped, with a minimum in the 21-30% range of director ownership. Considering the (3) ROA3 and (4) ROA4 curves-which have the highest adjusted R^2 values-we see two S curves, with the lowest values in the 6-20% and the 21-30% ranges, where the values of director ownership are probably not sufficient to create an alignment of interests that counterbalances an entrenchment phenomenon. Conversely,

when director ownership exceeds 30%, (3) ROA3 and (4) ROA4 increase and surpass their initial values. An S curve shapes the relationship between director ownership and financial performance, thus confirming our HP2.

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Graf. 1: The relationship between director ownership and ROA ratio

Source: Author's own elaboration

Regarding the largest shareholder's percentage of shares and family firm variables, Table 2, column 5 reports the regression results including LARG_SH and FAM_OWN both in absolute terms and as a moderator of the director ownership and the largest shareholder variables. Our findings indicated ($p<0.05$) that a large shareholder is beneficial for SME performance and that, conversely, family ownership is often detrimental to the ROA ratio for both director ownership and largest shareholder variables. The generational changes variable remained slightly under the significance threshold. Our HP3 is thereby confirmed.

3.7 Robustness checks

To check the robustness of our findings, we performed additional tests. First, we ran alternative regressions with limited datasets (years 2015, 2016 and 2017 singularly and together). The adjusted R^2 value and significance of most of the coefficients were similar to previous results. Second, we ran a reduced form of model [1] excluding all the control variables, except those representing time-period and industry fixed effects (column 6 of Table 2). The adjusted R^2 decreased to 0.159, but the key variables of director ownership remained significant. A third test was to run separate regressions of model [1] for small and medium-sized companies. The adjusted R^2 and the other key variables remained significant. Fourth, we calculated post-hoc powers of regression model [1] referring to Cohen's formulas for multiple regression (1988). We determined high values both for size ($f^2 > 0.50$) and power analysis (value around 1), which support the validity of our analysis. Last, we performed a sensitivity analysis of our

findings, using different measures of performance (ROA^ and ROS) as the dependent variables. The two selected alternative measures of financial performance confirmed our previous results, because the adjusted R^2 values were similar. The results for the ROA^ ratio are shown in column 7 of Table 2, whereas ROS ratio results are available upon request.

4. Discussion, limitations and future research

This paper investigated the relationship between the ownership share of directors and the company's performance in a sample of SMEs in northeast Italy. Previous studies on insider ownership concentrated on large and listed companies, whereas very few focused on SMEs. Because SMEs are quite relevant in Italy as they are in other OECD countries, our potential contribution to the existing literature lies in its focus on agency problems in this widespread but specific context.

The main conclusion of our analysis is that director ownership does influence company performance. We investigated this relationship by running variations of a model, and gradually obtaining a greater description of the shape of that association (i.e., a higher adjusted R^2 value). In particular, we found a significant nonlinear relationship between the two variables, with an S-shaped curve, indicating that the effect of director ownership on performance can vary depending on the percentage of ownership. Director ownership between 6% and 20% is less beneficial, whereas higher values (up to 49%) improved firm performance, with a peak exceeding 50%.

From a theoretical point of view, these results confirm both the alignment of interests and entrenchment effects (Morck *et al.*, 1988). Agency theory predictions on the effects of managerial ownership are confirmed, but only for certain intervals of director ownership. Notably, a substantial separation between the two categories (only 0-5% of director ownership) led to better performance than when they slightly overlapped (6-20%). A clear-cut separation between owners/directors who hire outside directors or, conversely, a substantial overlap of the two roles with strong leadership enhance financial performance.

When analyzing the influence of the largest shareholder, we identified a positive effect on the financial performance of SMEs, particularly in non-family firms. Once again, this result is consistent with agency theory and previous results for large companies (Shleifer and Vishny, 1986) and confirms the benefits deriving from having one large shareholder with an alignment between the financial performance of the company and the shareholders' personal interests.

As regards the family firm attribute, in our sample data, family firms are worse performers than non-family ones. This is true considering this attribute alone and as a moderator effect of director ownership and the largest shareholder variables.

Our study had certain limitations. First of all, although we compensated for reverse causality by using panel data for SMEs' financials and collected information on ownership in reference to previous periods, this could not

be excluded completely. Second, data were collected in northeast Italy, in the provinces of Verona and Vicenza, over a 4-year period, thereby limiting the possibility of generalizing their validity. Third, to reduce arbitrary responses (the questionnaire was self-answered), we used the 1-5 Likert scale but its calibration did not permit the evaluation of the variations in the behavior of financial performance for levels of director ownership between 50% and 100%. Fourth, we used the ROA ratio as a proxy for financial performance (although we also used other financial ratios). Fifth, we did not consider other (financial or non-financial) measures of performance. As a matter of fact, some SMEs - and family SMEs in particular - could be motivated towards other non-economic outcomes, such as family objectives and community objectives (Randolph *et al.*, 2019).

Despite these limitations, we believe that our study has more benefits than drawbacks. As observed by Mazzola *et al.* (2013), financial panel data and lagged financial performance may be a valid approach to test the influence of ownership variables on financial performance. Moreover, studies on family firms and SMEs have successfully employed Italian samples (Minichilli *et al.*, 2010). In addition, we used the Likert scale to reduce response bias, whereas financial ratios might be more reliable than other performance variables (which are not available in SMEs).

To conclude, our main result is a more accurate description of the relationship between director ownership and firm performance in SMEs and was attained by employing a non-linear structure for our interpretative function. This structure better describes the complex relationship between our variables of interest by showing the presence of both the convergence of interests and the entrenchment effects that have been outlined in previous studies. A further original contribution of our research is related to the largest shareholder and family contributions to financial performance in SMEs. This study has implications for researchers and practitioners. Research on SMEs, both family and non-family owned, could better interpret and predict company financial performance in light of agency theory and the entrenchment effect. Entrepreneurs, in defining their practical contribution to company management, should focus on the importance of their presence in the BoD, particularly in the case of large shareholders. Family firms must pay attention to their controlling role in order to guarantee the board members' best competencies and skills.

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