

# Enterprise Risk Management In Private Firms: Does Ownership Structure Matter?

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## ABSTRACT

*Private firms adopt Enterprise Risk Management (ERM) practices voluntarily. Using results of a survey that involved 78 respondents, we investigate the adoption of ERM practices in Italian private corporations and question whether ERM adoption is affected by the ownership structure of the firm. We find that agency conflicts between controlling and minority shareholders, which arise when ownership dispersion decreases, affect ERM adoption, and that when proprietorship is more dispersed, the firm places more focus on ERM projects. Additionally, we document the different roles of different types of owners. More specifically, in line with the patronage agency theory, the government-controlled enterprises undergo more intense ERM, whereas, in line with behavioral agency theory, individual and family-controlled firms pay less attention to ERM adoption.*

**Keywords:** Enterprise Risk Management; Agency Conflict; Ownership Concentration; Type of Ownership; Private Firms

## 1. INTRODUCTION

In spite of the growing attention paid to Enterprise Risk Management (ERM) in listed firms (McShane et al., 2011; Hoyt & Liebenberg, 2011; Pagach & Warr, 2011), there is relatively little research examining its implementation in smaller and unlisted corporations. Two main reasons account for such a lack in the published research. Firstly, no code of self-regulation pushes private firms into ERM implementation, meaning that they adopt ERM practices (if any) voluntarily; public firms, however, are compelled to adopt the generally accepted standards of ERM. Secondly, accounting and non-accounting information about private firms are often protected by confidentiality; therefore, studying managerial behaviors in private firms relies on primary data collection, which is expensive in terms of time and money, and suffers the feasibility of sample and collection bias. Nevertheless, ERM might be profitable to all organizations, including private corporations (Gates et al., 2012; COSO, 2004). Considering that ERM is likely to reduce firms' risk exposure, the issue of ERM implementation in private firms is important as, when compared to their public counterparts, they are more likely to encounter financial difficulties and face default. Besides, due to the undiscussed relevance of private businesses in today's economy, the investigation of ERM in private firms is a desirable and fascinating field of study.

In this paper, our contribution is to fill the gap in the literature by empirically investigating the issue of ERM within private firms. By administering a survey to a sample from Italy, where corporate governance is characterized by a high level of ownership concentration and a lack of adequate protection of minority investors, we measure the degree of adoption of ERM practices and question whether ownership features have an impact on ERM practices. We use econometric regression analysis in order to examine whether ERM is affected by agency conflicts arising from ownership dispersion and type of ownership.

We contribute to the existing literature in several ways. We demonstrate that even though the management is not pushed into adopting published frameworks, the degree of implementation of ERM is affected primarily by the ownership features of a firm, while performance has relatively limited explanatory power. From a theoretical perspective, we consider in our work the relevance of agency theory, the need to mitigate conflicts between the controlling and the minority shareholders (so-called Type II Agency Conflicts) and their influence over ERM adoption.

The rest of the paper follows the outline given below. Section Two both reviews the existing literature dealing with ERM adoption in listed and non-listed corporations and situates agency theory within the framework of private firms. The third section outlines the development of the hypothesis tested in this research; it defines the variables and the econometric model adopted in the empirical tests. In the fourth section, the sample is described. The fifth section shows results and discusses findings and, finally, the sixth section briefly concludes the paper.

## **2. LITERATURE REVIEW**

### **2.1 ERM in Public and Private Firms**

ERM, and fundamental changes regarding the management of risks, have attracted a great deal of interest over the last decade. Scholars and practitioners have experienced a radical shift from a silo-based perspective (using a rigid, compartmentalized and fragmented way of managing risks) to a more coordinated management of all risks, so-called ERM, which also permits a more comprehensive understanding of the connected impacts amongst the full spectrum of risks (Gordon et al., 2009; Kleffner et al., 2003; Beasley et al., 2008; Liebenberg & Hoyt, 2003). This new approach allows companies to go beyond the traditional financial aspect; in fact, ERM is geared towards the achievement of strategic goals (Beasley et al., 2015; Sarens & De Beelde, 2006; Maurer, 2009). Corporations, regulators, as well as investors, recently enhanced the focus on ERM practices (Liebenberg & Hoyt, 2003; Beasley et al., 2008; Demidenko & McNutt, 2010), especially in the aftermath of the global crisis (Baxter et al., 2013), as it was considered to be a source of competitive advantage during and after the economic downturn (Nair et al., 2014; Ellul & Yerramilli, 2013). In the light of prominent financial scandals, Standard and Poor's began in 2007 to measure the degree to which an insurer implemented an ERM program. In the following year, Standard and Poor's introduced ERM analysis into the credit-rating process of non-financial companies. Nowadays, ERM is an essential element of corporate governance (Spira & Page, 2003; Bhimani, 2009), but prior studies have mainly investigated ERM in listed or financial corporations.

Whereas a stream of research has examined the relevance of ERM for firm performance and firm value (Andersen, 2008; Liebenberg & Hoyt, 2003; Hoyt & Liebenberg, 2011; McShane et al., 2011), a series of empirical analyses have addressed the issue of ERM in listed and non-listed firms comparatively, but the results are contradictory. Some of them (Institute of Chartered Accountants in England and Wales, 2005; Paape & Speklé, 2012) proved that listed firms have more developed ERM systems than those of non-listed organizations, inasmuch as they are hindered by the absence of a common framework for their adoption. A variety of studies, some of which drew upon institutional theory (DiMaggio & Powell, 1983), reported that coercive pressures, which change from country to country, affected companies' ERM systems strongly (Demidenko & McNutt, 2010; Sarens & Christopher, 2010; Arena & Azzone, 2007), as did the pivotal or trivial roles played by internal auditors in promoting and practicing effective risk management (Arena et al., 2006; Sarens & De Beelde, 2006). On the contrary, Kleffner et al. (2003), Beasley et al. (2015) and Baxter et al. (2013) surprisingly found no significant difference in the propensities of private and public firms to adopt ERM practices.

Hence, evidence about the adoption of ERM practices by private corporations is fairly mixed since ERM is time- and context-specific; it depends on the capabilities and willingness of a company's staff and it is now evolving rapidly, especially within private corporations (Beasley et al., 2015).

Although Paape and Speklé (2012) assert that firms might easily avoid corporate governance regulations, highlighting the fact that only mandatory enforcement is effective in shaping their behavior, firms should not only embrace minimal elements of ERM merely to comply with regulatory pressure, following institutional theory (Blaskovich et al., 2012), they should also value it and consider the benefits that might be reaped from its proper adoption (Spira & Page, 2003; Gates et al., 2012; Hoyt & Liebenberg, 2011). For instance, the German Control and Transparency Act (known in the literature as the KonTraG regime) has mandated ERM engagement for all publicly listed firms in Germany since 1998, with the result that earnings' quality and capital resource allocation have been improved (Brown et al., 2014). ERM should not be perceived as a bureaucratic process; its activities provide precious and reliable information utilizable by decision-makers (Fraser & Henry, 2007; De Zwaan et al., 2011; Arena & Azzone, 2009).

ERM in non-listed companies has been attributed a low priority in the relevant literature. These firms are often unable to hire employees with the necessary expertise, technical knowledge and availability for training: factors that foster ERM capabilities (Gao et al., 2013). Moreover, private firms seldom have formal risk-reporting procedures or internal ERM regulations (Henschel, 2010; Gao et al., 2013). Lastly, there is no tendency for smaller firms to adopt advanced ERM practices, such as the use of quantitative techniques for risk identification and measurement, the enrollment of a professionally qualified risk manager or chief risk officer or the settlement of a dedicated risk management department (Tagliavini, 1995; Petroni, 1999; Mafrolla & Matozza, 2014). The application of ERM in small and medium-sized enterprises may be effective, despite the limitations they often experience.

## **2.2 Overview of Theoretical Perspectives**

In US-based corporations, consistent with the agency theory perspective, shareholders ask explicitly for more stringent monitoring of the management's actions (so-called Type I Agency Conflict) by increasing the level of engagement in ERM activities, which enhances shareholders' protection (Beasley et al., 2015). In a different institutional context where ownership is concentrated in the hands of the main block-shareholder (such as the Italian context), less effort is put into controlling the management's actions (Melis, 2000; La Porta et al., 1999; Shleifer & Vishny, 1997), as the manager is an affiliate of the owner (Shleifer & Vishny, 1997). In such a context, a so-called Type II Agency Conflict arises between the large controlling shareholder and a fringe of small minority shareholders.

Focusing on private firms, rather than the possibility of investigating public companies, offers the best testing ground for the relationship between ERM and the ownership structures of firms, as long as private firms have less dispersed ownership (Hope, 2013) and offer more heterogeneous ownership features (Hope et al., 2012). Finally, in private firms the separation of ownership and management (the Type I Agency Conflict) is rare, whilst the Type II Agency Conflicts are likely to arise. In such a context, ERM practices are adopted voluntarily by private firms.

An interesting stream of literature documents the fact that the type of ownership matters in corporate governance choices, and that various types of owner experience the agency conflicts differently and act differently, in order to mitigate conflicts and improve their positions in their respective corporations.

With this paper we wish to reply to recent calls for further research dealing with types of ownership and corporate governance (Kumar and Zattoni, 2014), and investigate the under-studied field of ERM as a governance tool for private firms.

## **3. HYPOTHESIS DEVELOPMENT**

Due to the agency conflicts that arise between the controlling shareholders and the minority shareholders in private firms, especially in the Italian scenario (Melis, 2000), we forecast that ownership concentration constitutes a dominant driving force in our study. Large shareholders have an interest in increasing their control over the organizations in which they have invested by monitoring management more closely, sitting on the board or hiring affiliate managers. On the contrary, small shareholders have an incentive to engage with a robust internal control mechanism and establish other sound corporate governance controls for monitoring the management's actions. Indeed, managers may collude with large shareholders by exploiting a lack of corporate governance (and ERM) for personal interests. As a result, the minority shareholders may be worried about expropriation, and for all of these reasons they might try to pressurize the management into improving ERM processes, which could help to maximize shareholders' value protection. Thus, we hypothesize that ERM adoption could be affected by the extent of ownership dispersion, and that a large number of owners could implement ERM practices more effectively in private corporations where Type II Agency Conflicts dominate. Accordingly, our first proposition is as follows:

**Hypothesis 1:** There is a positive influence exerted by ownership dispersion on the adoption of ERM practices.

Large shareholders behave differently, and every category of owner has different incentives in expropriating rights and extracting rents from the firm at the expense of minority shareholders, because agency conflicts are shaped differently by both ownership concentration and ownership type, constituting the so-called ownership structure of

the firm (Round, 1976). We tested the idea that various types of shareholders affect ERM adoption differently. Hence, we tested the following hypothesis:

**Hypothesis 2:** Different impacts attend different types of main block-ownership on the adoption of ERM practices.

We focused on three different types of block-shareholders: institutional investors, governmental owners and general industrial (individual or company) owners.

Firstly, we analyzed whether firms controlled by institutional owners develop better ERM practices. The degree of institutional ownership was found to be a significant determinant in ERM application (Pagach & Warr, 2011), because an institutional owner who is also a minority shareholder is bound to demand high-quality information (Kane & Velury, 2004). There is much discussion on whether institutional owners, when they are the main blockholders of their firms, can be active managers and focus on long-term oriented and low-risk operations (Chaganti & Damanpour, 1991). In the context of large share-ownership concentration, we suspect that the institutional investor is likely to be a professional main blockholder, keen to improve the quality of the firm's management. They will probably implement a stronger ERM, mitigating the Type II Agency Conflict, also taking into consideration the fact that institutional investors often have competencies, abilities and finances inside to help subsidiaries to engage in formal ERM actions. Nevertheless, the issue of the role of institutional block-ownership in private firms remains largely unexplored, as most existing studies focus on publically traded firms. Hence, we expand Hypothesis 2 into the following sub-hypotheses:

**Hypothesis 2.a:** There is a positive impact of institutional main block-ownership on the adoption of ERM practices.

As a second category of ownership, we focused on general industrial (company or individual) owners, which, in the context of private firms, likely include a majority of family owners. When a firm's decisions are made by an owner-manager or by a family owner, there is a strong likelihood that engagement in ERM will be lower (Brustbauer, 2016; Paape & Speklé, 2012), as they tend to be less apt to engineer a formal control system (Lovata & Costignan, 2002). Following the behavioral agency theory (Wiseman & Gomez-Mejia, 1998), a high degree of control and influence exerted by the family on the firm can be detrimental to its governance and, in a context of high ownership concentration, it can exacerbate the Type II Agency Conflict (Berrone et al., 2012). These statements led us to conjecture that firms controlled by general industrial companies are likely to result in weaker ERM practices. Thus, we tested the following sub-hypothesis:

**Hypothesis 2.b:** There is a negative impact of general industrial main block-ownership on the adoption of ERM practices.

As a third and final category, we considered government-owned firms (Niemi, 2005; Hope, 2013) as, following the patronage agency theory (Shleifer & Vishny, 1994), the government is likely to be a stakeholder-focused investor. Consequently, we expect that government block-ownership mitigates the Type II Agency Conflict, warrants higher protection for shareholders and is a more effective monitor of management for reputational purposes (Ali & Lesage, 2013). Consequently, we tested:

**Hypothesis 2.c:** There is a positive impact of governmental main block-ownership on the adoption of ERM practices.

### **3.1 Dependent Variable: The Measurement of the Adoption of ERM Practices**

In line with Beasley et al. (2015), we developed an index in order to measure the various levels of implementation of ERM across firms. Our index-based approach for ERM deployment differs from the binary-indicator-based approach adopted by other researchers as a proxy for the adoption of ERM practices, who either refer to a firm's decision to hire a chief risk officer, or refer to whether a firm is engaged in ERM (Beasley et al., 2008; Liebenberg & Hoyt, 2003; Pagach & Warr, 2007; Pagach & Warr, 2011; Hoyt & Liebenberg, 2011). The main drawback of these studies was that they did not create a comprehensive scale for measuring ERM, considering that it is caused by a multitude of combined behaviors to tackle specific situations; it is an incomplete measure, which explains the

weak statistical significance of results (Mikes & Kaplan, 2013; Bromiley et al., 2015). The adoption of an index has numerous advantages over the use of a binary indicator, due to its ability to measure via a broader scale to what extent ERM was implemented. Like in McShane et al. (2011), Baxter et al. (2013) and Beasley et al. (2015), we measured according to a score, ranging from zero to 14, in order to assess the degree of adoption of ERM practices. The use of multiple determinants better identifies ERM users. Moreover, as long as private firms had no obligation to disclose data about internal systems and processes, including ERM practices, the only way to look into the topic was by administration of a questionnaire to a sample of firms. Survey-based primary data collection is widely recognized as a dominant method amongst management researchers (Flynn et al., 1990; Scudder & Hill, 1998), due to the lack of available good secondary data (Zimmerman, 2001).

We developed a questionnaire considering the experience of previous surveys documented in the literature and the COSO Framework, and considering the specific circumstance that the analysis was going to involve unlisted firms. The questionnaire consists of 16 questions, split into two sections. The main purpose of Section One (two questions) was to identify the respondents' characteristics. Section Two (14 questions) addressed the degree of implementation of ERM practices within the firm. The calculation of our dependent variable is summarized in two stages: in the beginning, we considered the answers, each of which was based on a binary system (zero-one). After that, we summed each categorical variable to obtain a score (from zero to 14), which was used to define our dependent count non-negative integer variable, called *ERM*, which measures the extent to which the firms in our sample adopt ERM practices. Our *ERM* index can be considered a reliable measurement scale, given its high Cronbach's alpha value (0.939).

We chose the COSO Framework as a reference for our research because Italian companies prefer complying with such a standard (KPMG, 2012). Every item controls for at least one out of the eight interrelated components of ERM, as described in Table 1.

**Table 1.** Definition of *ERM*

Components of ERM (COSO, 2004)	Elements of the dependent variable ERM
Internal Environment	1. 1 for firms that provide training for the staff of their risk management departments; 0 otherwise.
	2. 1 for firms in which the Chief Risk Officer obtained at least one of the following qualifications: Bachelor’s Degree, Master’s Degree or Ph.D.; 0 otherwise.
	3. 1 for firms that set up a risk management department more than two years ago; 0 otherwise.
	4. 1 for firms that state reasons for setting up a risk management department that differ from legal obligations; 0 otherwise.
Objective Setting	5. 1 for firms that hope to at least: achieve strategic goals, protect assets, create corporate governance procedures properly or monitor performance; 0 otherwise.
Event Identification	6. 1 for firms that planned at least one of the following activities: organization of general ERM activities, identification of risk throughout the firm, giving plenty of advice and recommendations to improve ERM practices or application of an ERM policy within the company; 0 otherwise.
Risk Assessment	7. 1 for firms utilizing at least one of the following indicators: basic risk indicators, risk maps or quantitative methods (value-at-risk, Monte Carlo simulation); 0 otherwise.
Risk Response	8. 1 for firms considering at least one of the following kinds of risks: strategic, environmental or operational; 0 otherwise.
Control Activities	9. 1 for firms where risk regulations are in place; 0 otherwise.
	10. 1 for firms discussing the risks more often than once a year; 0 otherwise.
Information and Communication	11. 1 for firms that report ERM activities at least to Top Management, Chief Executives or departments inside the company; 0 otherwise.
Monitoring	12. 1 for firms hiring a Chief Risk Officer; 0 otherwise.
	13. 1 for firms that have either a dedicated risk management department or have one inside the Internal Audit; 0 otherwise.
	14. 1 for firms in which more than three employees work within the risk management department; 0 otherwise.

**Note:** The description of the elements of the dependent variable *ERM* is based on *Framework and Application Techniques*, COSO (2004). *ERM* equals the sum of the scores for the 14 measures above.

### 3.2 Explanatory Variables: The Measurement of Ownership Structure

Following Round (1976), we argue that ownership structure is described by both ownership concentration and type of ownership.

In order to analyze ownership concentration and test whether shareholders’ dispersion in our sample affects the adoption of ERM practices (Hypothesis 1), we devised a proxy for ownership dispersion (*Dispersion*), measured the total number of shareholders (Brav, 2009) and expected that when ownership dispersion increases, the *ERM* index would improve. Consequently, a positive link between *Dispersion* and *ERM* would provide evidence that ERM serves as a monitor of large shareholders: it prevents them from maximizing their own interests at the expense of minority shareholders.

There is surprisingly limited extant research on how different types of block-shareholders affect ERM. Following prior research, we distinguish between three categories of main block-shareholders (Niemi, 2005; Brustbauer, 2016; Paape & Speklé, 2012). More specifically, *Government* is a dummy variable that equals 1 if the majority of shares is owned by a public authority, state or government, and 0 otherwise. Additionally, *General Industrial* equals 1 if the majority of shares is controlled by a general industrial firm (as a company, an individual or a family group), 0 otherwise. Finally, *Institutional* is a categorical variable, which takes on a value of 1 if the majority of shares is owned by mutual and pension funds, nominees, a trust/trustees or a financial company, 0 otherwise.

In the computation of the statistical results of the analysis, as displayed in Table 3, we dropped *Government* in order to avoid a dummy variable trap. Overall, we expected a positive impact of *Dispersion*, a negative influence of

*General Industrial* and no impact or a positive impact of *Institutional* on the *ERM*; these results would respectively confirm Hypotheses 2.a, 2.b and 2.c.

### **3.3 Explanatory Variables: Controlling for Performance and Governance**

Based on previous studies, we identified two classes of control variables: firms' financial performance (Baxter et al., 2013; Pagach & Warr, 2011; Beasley et al., 2008) and firms' corporate governance (Paape & Speklé, 2012; Beasley et al., 2005).

We controlled performance via the factors of profitability, leverage and dimension.

In order to control for firms' profitability, we used return on assets (*ROA*), which is proxied by earnings before interest and taxes, and scaled by total assets at the beginning of year. Hoyt and Liebenberg (2011), focusing their attention on US publicly traded insurers, found that firms' Tobin's Q ratios and returns on assets were significantly related to ERM engagement. Other researchers documented the fact that ERM quality was positively associated with firms' performance (Andersen, 2008; Baxter et al., 2013). Hence, we hypothesize a positive impact of a firm's profitability on its adoption of ERM practices, as higher profitability (and therefore a larger availability of financial resources) should stimulate managers to procure a more sophisticated system for the management of risks. It is worth pointing out that high profitability is a barrier against risk, as firms that benefit from larger profitability would not be interested in engineering additional risky management actions. Thus, we examined the association between change in performance and ERM engagement, using  $\Delta ROA$ , which is the first-difference in performance (i.e., a one-year change in earnings before interest and taxes, scaled by lagged total assets).

We also controlled for firms' leverage, proxied by debt-dependence (*LEV*), measured as debt provided by the banks that was scaled by total assets at the beginning of year. While Pagach and Warr (2007), Liebenberg and Hoyt (2003) and Hoyt and Liebenberg (2011) found a positive relationship between ERM adoption and leverage, Baxter et al. (2013) and Beasley et al. (2008) highlighted the opposite findings. For highly leveraged firms, the advantage of implementing an ERM program is that it can help to protect the firm against the eventuality of default (Baxter et al., 2013, Andersen, 2008; Gordon et al., 2009). However, those firms might lack the finances to invest in high-quality ERM.

Finally, we controlled for firms' dimensions and complexity, measuring *SIZE*, as the natural logarithm of total assets. The relationship between firm size and ERM practices is well documented in the literature, leading to the fairly unambiguous conclusion that size is a fundamental prerequisite for an adequate ERM system (Pagach & Warr, 2011; McShane et al., 2011; Baxter et al., 2013; Beasley et al., 2015).

We controlled for firms' corporate governance by measuring the quality of external auditing and the eventuality that external auditing is mandatory for the firm.

We proxied the quality of external auditing by adopting the binary variable *Big4*, which equals 1 if the auditor is a Big 4 auditing company, and 0 otherwise (Becker et al., 1998; DeFond, 1992; Teoh & Wong, 1993). In the context of the US's big corporations, Beasley et al. (2005) did find positive and significant association effects of audit quality on ERM, whereas, according to Paape and Speklé (2012), there is no such association.

Finally, we controlled for the eventuality that the private firms in our sample are owned by listed companies, using the proxy *Listed*, which equals 1 if the main block-owner is a listed company, and 0 otherwise. Public firms have to comply with Corporate Governance Codes, which pressure them to strengthen internal controls and subject them to mandatory audits. Moreover, auditing is mandatory for the subsidiaries of listed firms. Hence, subsidiaries of listed companies would probably adopt a higher level of ERM for compliance, decreasing auditing work demanded by external auditors (Desender & Lafuente, 2012). This is also in line with the substitution theory, according to which there is a negative link between investment in internal auditing and external auditing fees (Mohamed et al., 2012).

Lastly, we added to the model a control for industry characteristics, as prior studies suggest that ERM is influenced by the sectors in which firms operate (Beasley et al., 2008; Beasley et al., 2005; Kleffner et al., 2003). We included in our model industry dummies in order to capture any variability occurring at an industry level.

### 3.4 Econometric Model

We estimated cross-sectional models, using one-year's data for each firm. We elaborated data using econometric analysis in order to test the aforementioned hypotheses. Because the dependent variable is an ordinal variable, we used two logistic regression models (Binomial and Poisson) and regressed the following equation:

$$ERM_i = \alpha_0 + \beta_1 Dispersion_i + \beta_2 Institutional_i + \beta_3 General\ Industrial_i + \gamma_1 ROA_i + \gamma_2 \Delta ROA_i + \gamma_3 Leverage_i + \gamma_4 Size_i + \gamma_5 Big4_i + \gamma_6 Listed_i + \eta_k Industry_i + \varepsilon_i \quad (1)$$

Logistic regressions are preferred when the errors are not normally distributed. This assumption is often violated when utilizing the linear model. We prefer employing Binomial and Poisson estimates together with a set of robust standard errors (often called Huber-White errors) in order to deal with over-dispersion of count variable *ERM* (Kleiber & Zeileis, 2008; Zeileis, 2006; Cameron & Trivedi, 2010; Wooldridge, 2002). Thus, we used the family of generalized linear model regressions. We chose a Binomial model, where the upper bound, (14) was well known before the investigation. *ERM* should be seen as the sum of 14 independent Bernoulli (zero-one) random variables; the Poisson regression model was also used to assess further the robustness of our findings. To conclude, our independent variables are lagged one year in order to avoid an endogeneity problem, which was among the most important shortcomings of previous studies (Bromiley et al., 2015).

## 4. SAMPLE

### 4.1 Data Collection

We selected the sample from all of the unlisted Italian firms in the AIDA database, provided by Bureau van Dijk for the year 2011. Secondly, we excluded the firms operating in the financial and real estate industries, non-active firms, un-incorporated firms, public firms and the ones preparing their financial statements in an aggregate form. Furthermore, we excluded firms with missing data on total sales, total assets and total debt, getting a balanced sample of 457 firms. We dropped the firms with unavailable or invalid contact details (i.e., email address and telephone number) and, finally, we administered the questionnaire to a sample of 359 firms. We got in touch with the firms initially via email and, later, since we received only three replies (i.e., less than 1% of the sample), we contacted them via telephone with the intention of introducing our survey. Two reminders were made after the first contact. We collected data from the beginning of May to mid-December 2013. We got 78 replies, representing a reliable sample, as respondents comprised 21.73% of the original sample.

### 4.2 Descriptive Statistics

The test of equality of means provided in Table 2 shows that the group of respondents does not differ significantly from the group of non-respondents, because Sales, Assets, Return on Assets and Leverage for respondents do not differ with statistical significance from the values measured for non-respondents. We also performed the Wilcoxon rank-sum test and the results were unchanged. Respondents and non-respondents operate similarly in various industries, as described in the bottom part of Table 2.

Table 2. Mean, standard deviation and tests of differences in means between respondents and non-respondents

	(a) All firms		(b) Respondents		(c) Non-respondents		Mean difference	
	Mean	Median	Mean	Median	Mean	Median	(b)-(c)	t-stat.
<b>ERM</b>	-	-	3.205	0.000	-	-	-	-
<b>Sales</b>	51,062,763	13,094,155	39,550,465	11,855,131	52,793,526	13,008,481	-13,243,061	-0.511
<b>Assets</b>	45,158,865	12,484,351	40,455,008	12,720,161	45,227,616	11,865,213	-4,772,608	-0.368
<b>ROA</b>	0.032	0.029	0.035	0.030	0.030	0.028	0.005	0.445
<b>LEV</b>	0.672	0.677	0.653	0.610	0.675	0.686	-0.023	-0.631
<b>Industry</b>		<b>Perc.</b>		<b>Perc.</b>		<b>Perc.</b>		
Chemicals	126	35.097%	29	37.180%	97	34.520%		
Utilities	20	5.571%	5	6.410%	15	5.338%		
Constructions	30	8.357%	5	6.410%	25	8.897%		
Wholes. & Retail	98	27.298%	21	26.923%	77	27.402%		
Transp. & Log.	23	6.407%	4	5.128%	19	6.762%		
Service	62	17.270%	14	17.949%	48	17.082%		
<b>Firms</b>	<b>359</b>	<b>100%</b>	<b>78</b>	<b>100%</b>	<b>281</b>	<b>100%</b>		

Along with two-sample t-test we perform Wilcoxon rank-sum test, p-values are never significant at the levels 0.10, 0.05 or 0.01, respectively.

Some descriptive statistics for the sample of respondents are displayed in Table 2. Our sample covers a wide range of companies: some very small, some relatively large. They have mean (median) sales equal to €39,550,465 (€11,855,131); the mean (median) of their assets is €40,455,008 (€12,720,161). They are generally not highly profitable, considering that they have an *ROA* that is on average (median) equal to 3.5% (3.0%). They are highly leveraged, with *Leverage* in mean (median) equal to 65.3% (61.0%). Our indicator *ERM* has a mean (median) value of 3.2 (0). The firm that has adopted the broadest portfolio of ERM practices ticked 14 out of the 14 actions that we included in the questionnaire. In total, 56 out of 78 respondents declared that they had no risk management department, sub-department or chief risk officer.

## 5. RESULTS

Results of the empirical analysis are shown in Table 3.

**Table 3.** Impact of firm-specific characteristics on the adoption of ERM practices

Independent variables	Coef.	Binomial	Poisson
		(1)	(2)
Intercept	$\alpha_0$	-5.27** (-2.08)	-1.86 (-0.97)
Dispersion	$\beta_1$	0.02** (2.14)	0.01* (1.88)
Institutional	$\beta_2$	-1.03 (-1.59)	-0.73 (-1.44)
General Industrial	$\beta_3$	-1.23** (-2.46)	-0.93** (-2.36)
ROA	$\gamma_1$	0.90 (0.43)	0.78 (0.48)
$\Delta$ ROA	$\gamma_2$	3.93** (2.54)	2.50*** (2.99)
Leverage	$\gamma_3$	0.76 (0.98)	0.55 (0.98)
Size	$\gamma_4$	0.24* (1.71)	0.18* (1.75)
Big4	$\gamma_5$	0.34 (0.64)	0.24 (0.72)
Listed	$\gamma_6$	2.13*** (4.82)	0.97*** (3.18)
<b>No. of observations</b>		78	78
<b>Log pseudolikelihood</b>		-275.91	-233.34
<b>McFadden's pseudo-R<sup>2</sup></b>		-	0.22

This table presents the estimates of Equation (1) where the dependent variable is the ERM index using Binomial and Poisson models. Z-Scores (in brackets) are calculated using Huber-White robust standard errors (Zeileis, 2006; Kleiber and Zeileis, 2008). Industry dummies are included in the models but omitted from the table in order to conserve space.

\*, \*\*, and \*\*\* denote statistical significance at the 0.10, 0.05 and 0.01 levels (two-sided, respectively).

Firstly, looking at the results in columns (1) and (2), which display the regression previously described as Equation (1), the variables connected to firms' ownership structures can be considered significant determinants for the implementation of ERM in unlisted companies.

The proxy measuring ownership dispersion (*Dispersion*) is positively associated with ERM implementation ( $\beta_1 < 0$ ,  $p < 0.05$ ). This relationship validates Hypothesis 1, supporting the expectation that firms controlled by a small number of shareholders, each of whom likely exerts significant control over the firm, will be reluctant to implement ERM practices. However, as ownership dispersion increases, the variable *ERM* arises. This probably happens because minority shareholders regard ERM as a means of protecting themselves from block-shareholders' expropriations. Consequently, when Type II Agency Conflicts are less frequent or absent, ERM is better developed.

The proxies measuring the type of ownership seem to be significant in the explanation of ERM implementation in unlisted corporations, mostly validating our expectations about Hypothesis 2.

Unfortunately, we did not find a significant effect of *Institutional* ownership on *ERM* ( $\beta_2 > 0$ ,  $p > 0.10$ ); therefore, we cannot validate sub-Hypothesis 2.a. Nevertheless, all other types of ownership affect *ERM* significantly. The dummy *General Industrial*, has a negative and significant impact on *ERM* ( $\beta_3 < 0$ ,  $p < 0.05$ ). This validates our prediction under sub-Hypothesis 2.b, that when the main block-shareholder is a general industrial company, which mostly includes individual and family firms, the ERM system is less developed. Finally, governmental ownership (which

was dropped in Table 3, as it is the base-variable) is relatively more influential than other types of ownership on *ERM*. This, in line with patronage agency theory, implies that government-block-owned firms are more shareholder focused, developing better *ERM* practices.

We also found significant impacts of some control variables on *ERM*.  $\Delta ROA$  is highly and positively significant ( $\gamma > 0, p < 0.05$ ); this means that firms with a growing performance developed stronger *ERM* systems. Also, we found a significant and positive impact of *Size* on *ERM* ( $\gamma > 0, p < 0.10$ ), agreeing with a considerable number of earlier works (Pagach & Warr, 2011; Beasley et al., 2005; Beasley et al., 2015; McShane et al., 2011; Paape & Speklé, 2012). Finally, we found that firms controlled by listed companies (*Listed*) have better *ERM* values ( $\gamma > 0, p < 0.01$ ) than those possessed by private firms. Collectively, these findings might be taken as evidence that a leading role in shaping *ERM* behavior inside a subsidiary company is played by its parent company (Arena et al., 2010).

*Pseudo-R<sup>2</sup>* is normally lower when compared to *R<sup>2</sup>* values typically encountered with a linear regression model. Unfortunately, weak *Pseudo-R<sup>2</sup>* values are frequent, but in the Poisson model, we find 21.79%, which is a considerable result. Unreported variance inflation factors (VIFs) and correlations between the explanatory variables give no indication that multicollinearity or perfect correlation are serious issues in the multivariate analyses<sup>1</sup>.

### **5.1 Implications of ERM for Research and Practice**

In this paper we discussed the implementation of *ERM* in private corporations considering the ownership structure of the firm (i.e., ownership dispersion and type of ownership), investigated through the lens of agency theory.

Agency conflicts in the Italian environment (the basis of our empirical analysis) are caused by the unique features of a corporate governance system that is characterized by the strong powers of the main block-shareholders, which affect and strictly monitor managers' behavior according to their own interests (Melis, 2000). Hence, minority shareholders in Italy are subject to larger expropriation problems in comparison with those in the US (Zingales, 1994). In this paper, we showed that firms with a higher degree of shareholders' ownership dispersion (i.e., firms characterized by a large number of small proprietors) resort better to *ERM* as a corporate governance mechanism. When a firm has many shareholders and its ownership is more dispersed, the probability that it will strengthen *ERM* practices is larger. By comparison, when a firm has a few shareholders and its ownership is more concentrated, there is a smaller possibility that *ERM* practices will be adopted. These findings suggest that more pervasive Type II Agency Conflicts limit robust *ERM* adoption in Italian private firms.

Secondly, the type of ownership has a significant effect on private firms' decisions about *ERM* adoption. We documented the fact that firms owned by general industrial companies, which feasibly are family- or individual-controlled companies, value *ERM* less than their counterparts do. It is likely that family members are able to exercise monitoring activities on the company directly, and do not consider *ERM* implementation to be worthwhile. Besides, government-owned corporations, which are generally considered more stakeholder-focused when compared to other types of owners, are found to adopt *ERM* practices more readily. This confirms the patronage agency theory and the notion that, as an owner, a government is interested in social and political goals more than financial ones. Lastly, we cannot confirm that institutional block-shareholders are active investors in implementing *ERM* for corporate control, as we found no statistical significance in the results of the regression analysis.

## **6. CONCLUSIONS**

In this paper, we verify the impact of private firms' ownership structure on the adoption of *ERM* practices in Italy. Despite the advantage of an unregulated environment, unlisted firms have been largely overlooked in the literature. This study emphasizes the relevance of ownership characteristics in an institutional environment where the Type II Agency Conflict dominates.

We documented how important *ERM* is for the corporate governance of a private firm, especially when the ownership structure leaves small shareholders unprotected. We evidenced some important variations among

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<sup>1</sup> The highest VIFs for Binomial and Poisson models are 2.60 and 2.92, respectively. The highest Spearman and Pearson correlation is 0.56.

different types of main block-shareholders. Overall, the findings highlight greater ERM maturity where ownership is more dispersed, showing that ERM plays a significant role in protecting small shareholders. Additionally, ERM is better developed in government-owned firms, but is less well developed in individual- and family-owned firms. Hence, type of ownership has a relevant role in the development of ERM in private corporations, documenting the fact that ownership concentration in the hands of a stronger main block-shareholder (provoking more intense Type II Agency Conflicts) is a disincentive to the adoption of better ERM practices.

This research makes a contribution to both academics and practitioners, considering that ERM in private firms is under-researched and that standard setters could take the opportunity to implement some guidelines for non-mandatory ERM adoption in private firms. This study might help policymakers to recognize when it is worth suggesting that a firm aligns to ERM standards, underlining the relevance of several determinants in making this choice. It helps close a visible gap in the literature, which should devote more attention to ERM practices in smaller and private corporations, notwithstanding the limits posed by the restricted dimension and complexity that generally characterize those corporations.

An interesting follow-up study would be to use other research methodologies as long as investigation into ERM in private firms is still in its infancy, and it might be of interest to study this issue more deeply so that we can benefit from insights borne by the complementarities of case studies and survey research methods.

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**NOTES**

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