

# Family involvement in Italian listed companies and its relationship with performance, default risk and acquisition strategies\*

FRANCESCA BERNINI\*\* ALESSANDRA COLI\*\*\* GIOVANNA MARIANI\*\*\*\*

## Abstract

**Purpose of the paper:** to assess the impact of family involvement on performance, failure probability and acquisitions.

**Methodology:** empirical analysis on a sample of 141 companies listed on the Milan Stock Exchange (2005-2011). To identify family firms, we defined some criteria that consider family presence both in ownership and in management. We also defined a synthetic measure of family involvement for family firms. In order to test our hypothesis we ran correlation tests, tests for proportion and we estimated linear regression models.

**Findings:** family control in ownership is not statistically related to performance, risk and acquisitions. On the other hand, the presence of family controlled management influences some performance indicators and acquisition value but not the company's risk of failure.

**Limitations:** we did not assess the role of family succession. Also, we evaluated the degree of familiness only at the beginning (2006) and the end (2011) of the period of analysis.

**Originality of the paper:** we investigated how family ownership and management affected the measurement of the family involvement indicator during the observed period. Our study also helps investigate the relationships between familiness key variables (ownership and management) and performance, propensity for acquisitions and probability of failure.

**Practical implications:** family firms with a lower level of family involvement in the management dimension are characterized by a greater acquisition propensity. This may be a consequence of the fact that family managers manifest a higher risk aversion, preferring to ensure the company's survival rather than implement external growth strategies.

*Key words:* family involvement; performance; default risk; active acquisition

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\* This work is the result of a research realized by all the authors. In order to highlight the specific contribution, we attribute: paragraphs 3, 4, 5 and 8 to Francesca Bernini; paragraph 7 to Alessandra Coli and 1, 2, 6 and 9 to Giovanna Mariani.

\*\* Tenured Researcher - University of Pisa  
e-mail: francesca.bernini@unipi.it

\*\*\* Tenured Researcher - University of Pisa  
e-mail: alessandra.coli1@unipi.it

\*\*\*\* Associate Professor - University of Pisa  
e-mail: giovanna.mariani@unipi.it

## 1. Introduction

In the Italian economy, as well as in the global economic system, the family business is undoubtedly the model of governance that has contributed most steadily and decisively to economic growth. The issue of the family firm constantly livens the debate in the international literature in terms of its definition (Corbetta, 2010; Rutherford *et al.*, 2010), its contribution to the growth of the economic system and its peculiarities in management. Regarding the “definition dilemma”, some scholars (Astrachan *et al.*, 2002; Rutherford *et al.*, 2008; Jaskiewicz *et al.*, 2005) expressed the need to go beyond the definition of a family business that is limited to a dichotomous distinction between family and non-family companies. Indicators were devised to express a continuous scale of so-called *familiness*<sup>1</sup>, i.e. a set of tangible and intangible features, of synergistic relationships between the various members of the family and the company, including ownership control and the active role of the family in management (Villalonga and Amit, 2006).

The present paper contributes to this discussion by analyzing a data-set of 141 firms that were continuously listed on the Italian Stock Exchange, during the 2005-2011 period. In order to explore the relationship between the level of *familiness* and some firms’ performance drivers, we defined a synthetic indicator of family involvement (FI) according to the F-PEC approach (Astrachan *et al.*, 2002); considering also the widespread trend in corporate finance studies to express complex concepts by means of simple indexes that are useful to reveal the combined effect of several factors. In the following step we tried to investigate how the two dimensions of *familiness* - ownership and management - are able to influence business dynamics (Rutherford *et al.*, 2008), especially when considering the current financial crisis. Taking into account the literature, which presents contradictory results regarding *familiness* and performance (Sciascia and Mazzola, 2008), the empirical investigation focuses on the relationship between family involvement in ownership and administration, and performance. Corporate acquisition investments could be attractive especially when, during a time of recession, they can present different pull-factors, including the possibility of negotiating lower targets’ prices (Granata and Chirico, 2010). In this context, it is interesting to note whether family firms choose acquisitions as a possible long-term strategy (Corbetta, 2005; Zhara *et al.*, 2004), thus overcoming the risk aversion attitude in the acquisition policy (Donckels and Frohlich, 1991; Rajan and Zingales, 2003; Segaro, 2012). In this regard, several studies have shown how M&As can generate high integration costs, thus producing negative effects in terms of the uncertainty of results and increasing risk of default (Galpin and Herndon, 2008). Hence, the interest in verifying whether

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<sup>1</sup> In this regard, some authors (Habbershon and Williams, 1999; Rutherford *et al.*, 2008), use the concept of *familiness* to express the level of interaction between the family, the company and management. In particular, Sciascia and Mazzola (2008, p. 332) argue that “the familiness of the firm refers to the summation of the resources and competencies generated by the interaction of family, business, and individual family members ...”.

there is a relationship between the level of *familiness* in its two components, and the degree of financial risk and failure probability. The contribution of this study consists of an investigation on how the two dimensions of *familiness* (*ownership and management*) impact on the level and evolution of FI. We also believe that our study helps investigate the relationships between *familiness* key variables (ownership and management), on one hand, and performances, propensity for acquisitions and probability of failure, on the other. Some interesting results have emerged from our empirical analyses, including the fact that family firms with a lower level of *familiness*, especially in management dimension, are characterized by a greater acquisition propensity. Regarding the relationship between the trends of the two dimensions of *familiness* and performance, the obtained results are not always homogeneous and depend on different response variables (Dyer, 2006; Mazzi, 2011). In fact, significant relationships do not emerge between the two dimensions of FI and some measures of performances (e.g.: Return On Investment and Cumulative Abnormal Return), while a reduction is observed in Return On Equity when the level of family involvement in management increases. Moreover, the empirical analyses do not point to any relationship between *familiness* and the company's default risk.

The paper is structured as follows. After a literature review, we discuss our definition of the family business and define our Family Involvement Index (FI). The main research hypotheses are illustrated in the fifth paragraph. In the following sections we describe the statistical methodology and the main results of the research. We discuss the findings and the limitations of our study in the final section and we propose some suggestions for future research.

## 2. Literature review

An unambiguous definition of family business is still problematic in the international scientific context (Corbetta, 2010; Dyer, 2006; Mazzi, 2011). This livens debates regarding the "family business definition dilemma". Some authors aim to differentiate family businesses from other types of firms, considering *familiness* as a dichotomous variable; instead, other scholars measure the degree of family involvement in the company. Concerning the first approach, some studies identify a family business by considering the extent of interest held by the family (e.g.: Barontini and Caprio, 2006; Jacquemin and De Ghellinck, 1980; Galve and Salas, 1996; McConaughy *et al.*, 2001); other researchers consider the presence of family members in management as well as in ownership (e.g.: Ben-Amar and André, 2006; Maury, 2006; Sraer and Thesmar, 2007). The strong presence of family members in ownership as well as their active role (direct or indirect) in managerial activities (Anderson and Reeb, 2003; Villalonga and Amit, 2006), can mitigate the risk of the opportunistic behavior of directors. It represents the well-known controversy, backed by the founders of the *agency theory* (Berle and Means, 1932; Jensen and Meckling, 1976), that could favor an alignment of interests between

shareholders and managers. Moreover, family presence in ownership and management is considered as a characteristic element of family companies also according to the *stewardship theory* (Davis, *et al.*, 1997; Duller, 2013; Kellermanns *et al.*, 2008). These scholars support the positive effect of the family's participation in boards and other top management positions (e.g.: family CEO), thus contributing to the creation of strong distinctive skills and to the alignment between the objectives of company and management viewing for a long-term development. In fact, the presence of family members in administrative activity is considered a source of competitive advantage and of an improvement in the firm's perceived image (Anderson and Reeb, 2003; Corbetta and Salvato, 2004; Giovannini, 2010; Granata and Chirico, 2010). In order to overcome the limitations of the use of *familiness* as a dichotomous variable, some authors created the F-PEC (Astrachan *et al.*, 2002), an indicator capable of measuring family involvement in the business on a continuous scale (Caselli and Gatti, 2007; Klein *et al.*, 2005; Giovannini, 2010; Jaskiewicz *et al.* 2005; Rutherford *et al.*, 2008; Stewart and Hitt, 2012).

In the following parts we examined the main contributions on the relationship between *familiness* and several business dynamics, including performance and growth strategies, in order to identify some possible research gaps. With reference to the relationship between *familiness* and performance, studies have often produced discordant results (Dyer, 2006; Mazzi, 2011). Anderson and Reeb (2003) noticed that an increase in ownership is related to an improvement of performance, although beyond certain levels of ownership concentration, accounting and market performance begin to decrease. Villalonga and Amit (2006) found that family firms create value only when the ownership structure is combined with certain conditions of family control and management. Barontini and Caprio (2006) showed a positive link between "*family involvement*" and firm value and performances, when the family founder is still alive and even when the majority interest is held by the descendants, who also participate in the Board of Directors. Although the impact of family control on performance is mitigated by the negative effects exercised by the presence of control-enhancing devices, it remains generally positive. In this direction, Daily and Dollinger (1992) showed that "*family owned and managed*" companies perform better than "*professionally managed*" firms. Furthermore, Maury (2006) highlighted a positive relationship between performance and family involvement in ownership, on one hand, and a better performance in relation to an active presence of the family in management, on the other.

In contrast, Jaskiewicz *et al.* (2005) found that "*family managed*" companies do not perform better than others, while Sciascia and Mazzola (2008), investigating privately held family firms, pointed out no significant relation(ship) between family ownership and performance, but revealed a negative relationship between family management and performance. From this perspective, the most recent study on Italian companies (Giovannini, 2010), highlighted a negative relationship between the extent of family involvement in ownership and in management and market performances.

Our study contributes to the development of issues related to the *familiness*-performance relationship, providing additional results regarding listed family firms. Though presenting more homogeneous evidence than in the case of privately-held family businesses (Sciascia and Mazzola, 2008), listed firms maintain an ambiguous relationship with performances, as emphasized in literature.

Moreover, we would like to assess which of the performance indicators and *familiness* key variables (ownership and management) are more suitable to explain business trends. Furthermore, it is important not to exclude the issue of risk, especially when companies are involved in acquisitions. Some studies (Vaknin, 2010) focused on the financial risk profile of the family business as expressed by leverage and the Z-Score (Altman, 1968), highlighting that, in the USA, family-run businesses perform better than non-family firms. Looking at active acquisitions, Caprio *et al.* (2011) maintain that family-controlled companies have a lower propensity to implement external growth strategies than others and follow other ways to support their development. Some studies (Franks *et al.*, 2012; Martynova and Renneboog, 2009) seem to support the hypothesis that the degree of concentration of capital could affect decisions to promote corporate acquisitions because of the adversity of family shareholders towards a possible dilution of their power to control the company. In fact, Caprio *et al.* (2011) show that acquisitions are greater in firms where the family control is absolute. In contrast, Miller *et al.* (2010) found an inverse relationship between the extent of business interests held by the family and the value of acquisitions made by the company. Some authors then focus on how the presence of the family in administrative bodies might affect the outcome of strategic decisions. According to this perspective, administrators and managers belonging to the family manifest a higher aversion to risky operations (Bianco *et al.*, 2009) and prefer to ensure the company's survival rather than implement strategies aimed at creating value (Anderson and Reeb, 2003).

Considering these findings, the theoretical contribution of our research lies in the analysis of which characteristics of *familiness* are more crucial in strategic decisions such as acquisitions, with particular emphasis on the general economic and financial situation caused by the ongoing crisis that has been having devastating effects on Italian companies.

### **3. Criteria for the identification of family firms among Italian listed companies**

According to the most recent literature (Klein *et al.*, 2005), we adopt a definition of family business that considers the presence of the family both in ownership and in administrative positions (Anderson and Reeb, 2003; Villalonga and Amit, 2006).

We define FC variable the business interest held by the family<sup>2</sup>, and FBD variable the percentage of family members in the Board of Directors. Furthermore,

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<sup>2</sup> We consider family members people related by kinship, affinity and marriage.

we introduce the FAM dichotomous variable, attributing value 1 to family and value 0 to non-family businesses. On the basis of our definition, family firms are those where<sup>3</sup>:

- (1) the shares held by the family (at least 2 members) are equal to at least 50% + 1 share of the share capital ( $FC > 0.5$ ) (*familiness in ownership structure*),

or

- (2) at least one of the family members (ultimate owner) holds a business interest of at least 20% (Klasa, 2007) AND at least one of the family members participate in the Board of Directors ( $0.20 \leq FC \leq 0.50$  and  $FBD > 0$ ) (*familiness in ownership and in administrative positions*).

The first assumption makes it a condition that at least two shareholders be family members who hold absolute control together, thus ruling out the possibility of an involuntary loss of that power. This choice, which is consistent with the methodology adopted in other studies (Miller *et al.*, 2010, p. 206), helps ensure the exclusion, from the group of family businesses, of companies where there is a high concentration of ownership in the hands of individual entrepreneurs that do not operate in a family context. The choice of a high threshold by an absolute majority of the share held by the family is important in order to represent the high concentration of shares that is a characteristic of the Italian capital market (Barontini and Caprio, 2005; Zattoni, 1999). The Italian model, in fact, is characterized by the presence of companies with more concentrated ownership, especially when it comes to family firms (Barontini and Caprio, 2006; Favero *et al.*, 2006). The power of appointment of corporate administrators - deemed capable of defining family businesses (Caprio *et al.*, 2011) - is firmly guaranteed only in the case of possession of an absolute majority. This requires a more restrictive definition of Italian family firms (Granata and Chirico, 2010), at least for companies that prove to be so only in terms of ownership.

The second condition (*familiness in ownership structure and in administrative positions*), however intends to include in the group of family businesses, companies which are not controlled by an absolute majority of the family but where there are family members among both shareholders and the Board of Directors. It is, therefore, a necessary condition for a family business for at least one member of the family to be present in the ownership structure (Caprio *et al.*, 2011) and at least one (different from the previous) to be a member of the Board of Directors (Morresi, 2009). As already mentioned, this follows the logic of Corbetta and Tommaselli

<sup>3</sup> In order to define family businesses and the degree of family involvement, data and information were analyzed relating to the years from 2006 to 2011. The year 2006 was chosen because, in many cases, it was difficult to find reliable information regarding the real and declared involvement of family members in companies' corporate governance for the year 2005 (the first considered in the analysis).

(1996) and Klein (2000). In fact, the above authors stress how family participation in the business can be seen from the perspective of family control of the capital or, where the controlling stake was not held by the family, *familiness* can also be assessed by the degree of influence of family members on management and decision-making. From the application of the above mentioned criteria, it was found that 52% of the sampled companies are family businesses. Since only one company had a different status in 2006 and 2011, we can consider *familiness* a permanent characteristic of companies for the entire period. It is also clear that, in almost all of the sampled family firms, there was a family presence both in the *ownership* and in *administrative* positions, in accordance with the characteristics of Italian companies, which present a very low separation between ownership and control (Morresi, 2009). The strong presence of the family in management is emphasized by the fact that about 87% of family businesses have a family CEO. To verify the solidity of the above mentioned criteria, we changed the threshold of the minimum business interest (deemed necessary) held by the family. At first, only companies where  $FC \geq 0.30$  were considered family businesses. In this case, the division between family and non-family businesses remains the same as the one identified with the previous criteria. Subsequently, companies where  $FC \geq 0.30$  or  $0.20 \leq FC < 0.30$  and where at least one member of the family belongs to the Board of Directors were considered family businesses. Even then, the division of the businesses into family and non-family does not change substantially, as only two companies were in the set of non-family businesses.

#### **4. Criteria for measuring the level of family involvement in Italian listed companies**

In order to deepen the analysis of family firms, we proposed an indicator capable of synthetically measuring the level of family involvement (FI) on a continuous scale (Giovannini, 2010; Jaskiewicz *et al.* 2005) on the basis of the “power” dimension of the F-PEC (Astrachan *et al.*, 2002; Klein *et al.*, 2005; Rutherford *et al.*, 2008). This was carried out in order to identify any distinguishing features among the companies belonging to the family group:

$$FI = FC + FBD + FEX.$$

FC represents the percentage of total shares held by the family. FBD is the percentage of family members within the Board of Directors. FEX is the percentage of family members in the Executive Committee. The use of FI for the research hypotheses’ testing enables us to observe how the different combination of the two underlying factors of *familiness* (ownership and management) impacts on the company’s operative dynamics and strategies.

## 5. Research Hypotheses

Regarding the corporate governance issues related to the well-known relationship between ownership structure and control power, we examined the relation between the FI components: ownership and management. It is interesting to see whether the composition of the administrative bodies is conditioned by the presence of family shareholders in the ownership structure (Astrachan *et al.*, 2006; Giovannini, 2010). In fact, in companies with a high concentration of ownership, such as those of Italian family firms, there is often also a strong presence of shareholders in the Board of Directors (Mengoli *et al.*, 2009). In addition, it is worth remembering that the size of the FI indicator depends on the combined effect of the three components (FC, FBD, FEX). These components can, in fact, be considered as interchangeable because the highest value of one can compensate for the more limited value of the others (Astrachan *et al.*, 2002). The FI indicator, like any other synthetic indicator, masks the interactions that occur between the various components that it is made up of. For this reason, an analysis is fundamental to identify if there is a link between family control on ownership and management:

*H1 - The size of the business interest held by family members is positively related to the percentage of family members holding administrative and managerial positions.*

In addition, we investigate how family ownership and management impact on the time changes of the FI indicator. In fact, it may be asked whether one dimension dominates over the other in determining variation in the level of *familiness* recorded at the beginning and end of the considered period (2006 and 2011).

*H2 - In the observed period, changes in family involvement are mainly due to the variation of family presence in managerial positions.*

As mentioned, the relationship between FI and some outcomes, with particular focus on performance indicators, varies from study to study. In fact, some authors (Dyer, 2006; Rutherford *et al.*, 2008) emphasize how one of the reasons that may explain such conflicting results lies in the choice of methodology for the definition of the *familiness* of companies and the identification of response variables.

We thus decided to assess whether certain financial performance and market indicators were more related to the ownership or administrative components of the FI. In this respect, Kowalewski *et al.* (2010) found that the presence of the family in management, more than in ownership, is related to performances. In order to understand whether it is primarily ownership or management that explains the relationship between the *familiness* of a company, on one hand, and performance (Chrisman *et al.*, 2005) and corporate risk, on the other, we formulated the following hypotheses:

*H3: The size of family involvement components (percentage of family members in the ownership and management) is related to the firm's performance.*

*H4: The size of family involvement components (percentage of family members in the ownership and management) is related to the financial risk indicators.*

Then we focused on the propensity of family businesses to carry out active acquisitions. Considering previous studies, we investigated acquisitions by placing it in relation to ownership structures and the administrative dimension. In this way, the study would like to contribute to the research regarding family business, highlighting whether it is ownership or management that better explains the propensity of acquisitions' strategic decisions (Corbetta, 2010):

*H5: The size of family involvement components (percentage of family members in the firm's ownership and management) is related to the value of acquisitions made by family firms.*

## **6. Method and data collection**

The analysis concerns Italian companies that are continuously listed on the "Mercato Telematico Azionario" (MTA) of the Milan Stock Exchange from 2005 to 2011, with the exception of pure financial and real estate companies<sup>4</sup>. The analysis only includes companies that were continuously listed in the 2005-2011 period. This gave us a set of 141 companies.

We consider the sample representative of all the companies which were listed on the Stock Exchange (with the exception of pure financial and real estate companies) in the period 2005-2011 given its huge size (about 56% of population)

The 2005-2011 period enabled us to consider a significant value of M&A operations and included the advent of the economic and financial crisis which had a particular impact in Italy. In regard to the collection of acquisitions data, information on the size and price of the acquired business interests were taken from the Zephyr database. For instrumental data for the creation of performance indicators (deducted from the financial statement and market prices) and risks we consulted the Datastream database, the Italian Stock Exchange website and YahooFinance. The information used to identify family firms and to establish FI was obtained from the reports of corporate governance, investor relations and from the documents published by the Italian Securities Regulator (CONSOB). Where we experienced difficulties in identifying ties of kinship, we consulted the websites of individual companies and certain journalistic sources. *Familiness*-related variables were collected only for the years between 2006 and 2011. This means that only for those two years was it possible to measure the level of family involvement in the company

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<sup>4</sup> Holding companies were included in the group only if attributable to "non-financial" groups.

(variable FI) and to carry out the statistical analysis thereof. Conversely, we assume that being a family business or not remains a stable character over the years. As a result, the dichotomous variable FAM is present in each year.

In the previous parts, we described the FI structure. Below we describe the other variables used for the empirical analysis:

- Total Assets (ASSETS), as structural parameter, and Sales volume (SALES) as the operating parameter used to define the size of the companies;
- MACROS (Macro-sector of activity): MACROS = 1 when the firm belongs to the Industry sector, MACROS = 0 when the firm belongs to the Service sector;
- ROI (Return On Investment) and ROE (Return On Equity) as accounting performance variables;
- CAR (Cumulative Abnormal Returns) used as a market performance indicator (Masulis *et al.*, 2007) and obtained, on an annual basis, as the sum of the monthly returns of stock prices compared with the FTSE-All Share Italy:

$$CAR = \sum_{t=1}^{12} \left[ \frac{p_t - p_{(t-1)}}{p_{(t-1)}} \right] - \left[ \frac{Ftse_t - Ftse_{(t-1)}}{Ftse_{(t-1)}} \right]$$

- Leverage (Debt/Equity) as a financial risk indicator;
- Z-Score as a default risk indicator. The Z-Score model consists in a linear analysis in which five measures are objectively weighted and summed up to define an overall score that represents the basis for measuring the risk of bankruptcy (Altman, 1968). We decided to use a revised version of the Z-Score to better represent the characteristics of Italian companies (Bottani *et al.*, 2004): Z-Score = (1,981\*Working Capital/Assets) + (9,841\*Retained Earnings/Assets) + (1,951\*ROI) + (3,206\*Equity/Assets) + (4,037\*Return On Sales). The operating nature of the components described above make the Z-Score more capable of explaining the risk linked to the operational aspect of the business than other indicators.
- M&A: value of active acquisition (Miller *et al.*, 2010). The M&A variable was defined as the purchase price of the business interest in the target's capital.

For each sample unit, yearly data were collected for all the variables. The number of missing values is quite low, between 2% and 8% over the whole period.

## 7. Statistical analysis

This section presents the statistical analysis aimed at testing our research hypotheses. In the first part (section 7.1) we provide an overall description of the sample, looking at the size (ASSETS), main activity sector (MACROS) and family involvement (FI, FC, FBD, FEX) of the sampled companies. The second part (section 7.2) is devoted to the testing of the hypotheses. We used a test of correlation

to assess if there exists a significant relationship between the ownership and management dimensions of family involvement (H1). Then we used a proportion test to verify whether changes in family involvement from 2006 to 2011 were mainly due to changes of the family presence in managerial positions (H2). Finally, we estimate multiple linear regression models to assess whether family involvement is significantly related to the company's performance, risk of failure and M&A activity (H3, H4, H5).

### 7.1 Descriptive statistics

The sample consists of 74 family businesses (52%) and 67 non-family businesses (48%). The former are mainly Industry firms (about 53%) with the Manufacturing sector including 47% of the total, approximately the same percentage of the Service sector as a whole. Non-family businesses are relatively more frequent in the Service sector (64%). The chi-square test confirms that in family and non-family groups the split between the Industry and Service sectors is different ( $p$ -value = 0.04).

We use the companies' total assets (ASSETS) as a size indicator of the firm. The one way Anova test leads us to support the null hypothesis that family and non-family firms show equal ASSETS means ( $p$ -value=0.98). Given the ASSETS skewed distribution we also ran the Kruskal-Wallis rank sum test. Data support the null hypothesis that the population median is equal for family and non-family firms ( $p$ -value = 0.45). Finally we verify a negative correlation between FI and ASSETS ( $\rho$  = -0.39 in 2006 and  $\rho$  = -0.36 in 2011, with  $p$ -value<0.01 for both years).

We can conclude that family firms are mainly Industry firms whereas non-family firms mainly belong to the Services sector. Firm size is not significantly different in the family and non-family business groups, however we have verified that within the family business group the higher the *familiness* level, the smaller the firm size.

We now focus on family firms and in particular on the variables measuring family involvement in the firm. The FI variable aims at measuring the overall level of *familiness*, taking into consideration the participation of the family in the management (FBD e FEX variables) and in the ownership (FC variable) of the firm. We will henceforth refer to these two dimensions as management and ownership components respectively. Table 1 shows some descriptive statistics for the FC, FBD, FEX and FI variables. We notice that location, as well as variability measures, assume approximately the same values in the compared years: the distribution of the variables seem to remain approximately the same from 2006 to 2011. Moreover, it is possible to notice that the management component shows more variability with respect to the ownership component: the variation coefficient (VC), i.e. the ratio of the standard deviation to the mean, is over 50% for the FBD e FEX variables and about 19% for the FC variable.

Tab. 1: Descriptive statistics - years 2006, 2011

	FC		FBD		FEX		FI	
	2006	2011	2006	2011	2006	2011	2006	2011
Lowest value	0.29	0.23	0	0	0	0	0.59	0.53
First quartile	0.53	0.54	0.2	0.20	0.33	0.25	1.04	1.03
Median	0.58	0.59	0.29	0.28	0.50	0.50	1.38	1.37
Mean	0.58	0.59	0.31	0.30	0.53	0.53	1.42	1.43
Third quartile	0.67	0.67	0.41	0.39	0.75	0.80	1.76	1.79
Largest value	0.88	0.90	0.71	0.80	1	1	2.43	2.42
Standard deviation	0.11	0.12	0.15	0.16	0.35	0.36	0.46	0.48
Variation coefficient	0.19	0.20	0.49	0.52	0.64	0.66	0.33	0.34

Note: the table shows the main location and spread measures for the following variables: FC = the interest owned by the family; FBD = percentage of family members on the board of directors; FEX = percentage of family members in the executive committee, FI = FC+FBD+FEX.

Source: Authors' elaboration

## 7.2 Hypothesis testing

One of the crucial issues of this paper is to investigate the relationship between the management and ownership dimensions of *familiness* (see *H1 hypothesis* in the Research hypothesis section). To this end, we introduced the variable FMG defined as the sum of the FBD and FEX variables. The aim was to isolate the management dimension within the FI indicator. We then tested for a significance of the Pearson's correlation coefficient between the FC and FMG variables. The null hypothesis is that there is no correlation in the population ( $H_0: \rho = 0$ ) against the alternative that there is correlation ( $H_1: \rho \neq 0$ ). Data confirmed the null hypothesis, i.e. there is no correlation between the ownership and management dimensions of *familiness* (Table 2).

Tab. 2: Test for correlation between the FC and FMG variables

Year	test statistic	Df	Pearson's correlation coefficient	p-value
2006	0.78	73	0.09	0.44
2011	1.49	72	0.17	0.14

Note: the table shows the results of Pearson's product-moment correlation test between the FC and FMG variables. FC = interest held by the family; FMG = FBD + FEX, where FBD = percentage of family members on the board of directors; FEX = percentage of family members in the executive committee.

Source: Authors' elaboration

As a second step we analyzed the sample data to understand which of the two dimensions mainly gave rise to changes in the *familiness* level of firms from 2006 to 2011. In particular we assumed that the management dimension prevailed (see *Hypothesis H2* in the Research hypothesis section).

In order to validate our hypothesis, we calculated the following variables:

$$DFC = |FC_{11} - FC_{06}| \quad DFMG = |FMG_{11} - FMG_{06}|$$

Then, variable K was defined as follows:

$$K = 1 \text{ if } (DFMG-DFC) > 0 \quad K = 0 \text{ if } (DFMG-DFC) \leq 0$$

The total for the K variable is the number of firms for which changes in the management dimension prevailed over changes in the ownership dimension. Firms with K=1 account for about 62% of the sample.

We repeated the analysis, using the relative changes for each variable. Therefore, we calculated the following values for each firm:

$$DFCr = \left| \frac{FC_{11} - FC_{06}}{FC_{06}} \right| \quad DFMGr = \left| \frac{FMG_{11} - FMG_{06}}{FMG_{06}} \right|$$

Accordingly, variable Kr was defined as follows:

$$Kr = 1 \text{ if } (DFMGr-DFCr) > 0 \quad Kr = 0 \text{ if } (DFMGr-DFCr) \leq 0$$

There are 48 firms out of 74 with Kr=1, about 65% of the sample.

Finally, we verified hypothesis H2 with a test for proportion. The null hypothesis is that the population proportion is 50% ( $H_0: \pi=0.5$ ), whereas the alternative assumes that the population proportion is larger than 50% ( $H_1: \pi > 0.5$ ). Results (table 3) support the alternative hypothesis (p-value =0.024 for K and p-value = 0.007 for Kr). This means that, in the analyzed population, changes of family involvement in the management dimension prevailed over changes in the ownership dimension during the 2006-2011 period when considering both changes and relative changes.

*Tab. 3: Test on the proportion of family companies whose temporal variation in FI is mainly due to variation in FMG*

Type of change	test statistic	p-value	Sample proportion
Changes (proportion of firms with K=1)	3.90	0.024	0.62
Relative changes (proportion of firms with Kr=1)	5.95	0.007	0.65

Note: the table shows the results of a sample proportions test. The null hypothesis is that the probability of success (the company's FI change over time is mainly due to changes in FMG) is 0.5. The alternative is that the probability of success is greater than 0.5. FI = FC+FBD+FEX and FMG = FBD + FEX, where FC = interest held by the family, FBD = percentage of family members on the board of directors, FEX = percentage of family members in the executive committee.

Source: Authors' elaboration

In order to make our conclusions more robust we also verified whether the management dimension explained most of the change in FI. In fact FMG could have prevailed on FC in terms of number of cases but not in terms of the overall change

in FI. For this reason, we computed the share of the overall change in FI due to firms for which changes in the management dimension prevailed on variations in the ownership dimension. The analysis confirms our previous conclusions since the share is over the 90%.

The last part of the statistical analysis focused on the relationship between *familiness* and three issues that are relevant for businesses: performance, risk of failure and propensity to carry out M&A operations. Table 4 shows the correlation between the FC and FMG variables on one hand and a selection of variables pertaining to the above-mentioned issues on the other.

*Tab. 4: Test for correlation between the FC and the FMG variables and a selection of variables (on performance, failure and acquisitions)*

	FC				FMG			
	2006		2011		2006		2011	
	Pearson's correlation coefficient	p-value						
ROI	0.13	0.26	0.09	0.53	-0.16	0.173	0.07	0.531
ROE	0.02	0.83	-0.14	0.19	-0.37	0.001	-0.15	0.190
CAR	0.03	0.78	-0.07	0.7	0.06	0.585	-0.04	0.709
ZSCORE	-0.12	0.29	-0.07	0.72	-0.11	0.335	-0.04	0.730
LEVERAGE	-0.08	0.49	0.11	0.23	-0.06	0.599	-0.15	0.216
M&A	-0.32	0.03	-0.34	0.06	-0.29	0.042	-0.27	0.063

Note: FC = interest held by the family, FMG = percentage of family members on the board of directors and in executive committee, ROI = return on investments, CAR = cumulative abnormal return, ROE = return on equity, ZSCORE = z-score index, LEVERAGE = debt on equity, M&A = value of all the company's acquisitions in the 2005-2011 period. We considered the 2005-2011 period's average values for ROI, CAR, ROE, ZSCORE and LEVERAGE.

Source: Authors' elaboration

There is a significant correlation ( $\rho \neq 0$  for  $\alpha = 0.10$ ) only for the ROE and M&A variables, whereas correlation is not significant for the other variables ( $\rho = 0$  for  $\alpha = 0.10$ ). This conclusion holds for the M&A variable using either FC or FMG as measures of familiness. On the contrary, ROE is significantly correlated with the FMG variable and only when considering 2006 data. Pearson's correlation coefficients are negative, so we concluded that higher (lower) levels of family involvement in the firm are associated with lower (higher) levels of M&A and ROE (but only with respect to FMG and only in 2006).

Finally, we estimated multiple regression models with performance, failure and M&A measures as response variables, and the FC and FMG variables as explicative variables. Regressors also include two control variables: the firm's yearly sales (SALES) to control the firm's size and the MACROS variable to control the economic sector.

The objective of the analysis is to assess the impact of the FC and FMG *familiness* components on the company's performance, failure and acquisitions (see *Hypotheses H3, H4 and H5* in the Research hypothesis section).

The results of the analysis are in tables 5a and 5b.

Tab. 5a: Linear regression models (Hypothesis H3)

Explanatory variables	ROI		CAR		ROE	
	B	p-value	B	p-value	B	p-value
FC	-2.98E-02	0.495	-1.68E-01	0.300	0.07	0.984
FMG	-9.13E-03	0.399	-5.38E-02	0.193	-3.06	0.002
SALES	6.57E-12	0.133	-2.27E-11	0.268	8.03E-10	0.077
MACROS	5.63E-03	0.536	2.97E-02	0.385	7.90E-02	0.919
Degrees of freedom	62		63		57	

Note: ROI, CAR, ROE are the models' response variables. ROI = return on investments, CAR = cumulative abnormal return, ROE = return on equity, FC = interest held by the family, FMG = percentage of family members on the board of directors and in the executive committee, SALES = value of sales, MACROS = 1 when the firm belongs to the Agriculture or Industry sectors, 0 when it belongs to the Service sector.

We considered the 2005-2011 average values for ROI, CAR, ROE and SALES. We consider the 2006 and 2011 average values for the FC and FMG variables.

We used transformed response variables in order to respect/follow the assumptions of multiple regression analysis.

Source: Authors' elaboration

Tab. 5b: Linear regression models (Hypotheses H4 and H5)

Explanatory variables	Z-SCORE		LEVERAGE		M&A	
	B	p-value	B	p-value	B	p-value
FC	6.12E+00	0.266	-0.664	0.516	0.05	0.985
FMG	0.40	0.768	-0.321	0.224	-1.55	0.014
SALES	-2.71E-10	0.615	3.01E-10	0.022	4.80E-10	0.030
MACROS	1.48E+00	0.190	0.249	0.250	-1.26	0.021
Degrees of freedom	64		62		42	

Note: Z-SCORE, LEVERAGE and M&A are the models' response variables. ZSCORE = z-score index, LEVERAGE = debt on equity, M&A = value of all the company's acquisitions in the 2005-2011 period, FC = interest held by the family, FMG = percentage of family members on the board of directors and in the executive committee, SALES = value of sales, MACROS = 1 when the firm belongs to the Agriculture or Industry sectors, 0 otherwise.

We considered the 2005-2011 average values Z-SCORE, LEVERAGE and SALES. We considered the 2006 and 2011 average values for the FC and FMG variables.

We used transformed response variables in order to respect the assumptions of multiple regression analysis.

Source: Authors' elaboration

The empirical analysis confirms that the involvement of the family in the management of firms helps explain the variability of performances and M&A. The sign of the regression coefficients indicates that increasing (decreasing) the *familiness* management dimension leads to lower (higher) level of performance and M&A. Conversely, FC does not appear to have any impact on performance, failure and acquisitions. However, it is essential to observe that results depend on which variables are selected as response variables (Rutherford *et al.*, 2008). For example, as regards performance measures, our conclusions are confirmed only when ROE is used as a response variable.

Control variables present a significant relationship only with ROE and M&A response variables: SALES show a positive relationship for both ROE and M&A whereas MACROS results significantly related only to M&A. The negative sign of

the coefficient means that M&A is, on average, lower for companies belonging to the Industry than the Services sector, when we control for all the other explanatory variables. Finally, we note that the removal of control variables does not change our findings.

## 8. Discussion

The results of our study raise some points for discussion in the field of *familiness*. The empirical analysis, in fact, investigates the FI variable in its two key components by noting that the presence of the family in ownership is not correlated with the involvement of the family in administration and management (H1). This result differs from the finding of Giovannini (2010), which reports that the presence of outsider directors is negatively related to family presence in ownership.

Our result, in addition to providing data on the ability of the FI indicator to represent the characteristics of Italian family businesses, suggests that the “family effect” (Dyer, 2006) should be observed with specific reference to both the ownership and management (Maury, 2006; Sciascia and Mazzola, 2008). The time-based analysis revealed that FI does not undergo significant changes for the companies as a whole. However, variations in family involvement in the ownership and in management may be masked behind the apparent stability of the aforementioned indicator. The analyses revealed that most of the companies reported a variation, mainly in the level of family involvement in management (H2). Different explanations can be provided. First, we observe that any variation in family involvement in management may be driven by restructuring in order to meet the needs of a new generation, with consequent different membership in the Board of Directors. These changes may also be led by the need to seek expertise from professional managers (Stewart and Hitt, 2012). Sciascia and Mazzola (2008), for example, suggest that family businesses should be open to the idea of recruiting managers from outside the family. Such managers would be capable of bringing innovative skills and guiding strategic decisions in the pursuit of stricter economic objectives: in essence towards a progressive “professionalization” (Gnan and Songini, 2003; Randøy *et al.*, 2009; Stewart and Hitt, 2012). In addition to the above mentioned aspect, we note that the most substantial capital requirements (Giovannini, 2010) to finance a business acquisition or to cope with the negative effects of the crisis on financial resources’ availability, may have led to the increasing use of private equity funds and venture capital, which require an active role in management by Italian companies.

With reference to the relationship between the two components of *familiness* and performances (H3), we obtained different results when considering different response variables (Dyer, 2006; Mazzi, 2011). The ROE index decreases when the presence of family in management increases, controlling for the effects of the company’s size, industry and level of family involvement in ownership. Furthermore, we observe that ROE is also influenced by the company’s size and

industry. Larger firms, in fact, show higher levels of ROE. In contrast, there are no relations between the family presence in ownership or management and other performance indicators (ROI, CAR). Consequently, with regard to accounting performance indicators, there is no relationship between FI and ROI, while there is a reduction in ROE with an increase in the level of *familiness*. In fact, Boards of Directors that are more influenced by the family may be more in favor of guiding decisions to achieve objectives of a non-economic nature (Passeri and Mazzi, 2012; Sciascia and Mazzola, 2008). However, the current economic condition results in higher levels of uncertainty regarding the achievement of steady levels of performance rather than in the past.

Therefore, we could consider that these changes could have pushed family companies to seek higher levels of management *professionalization*. The involvement of professional managers, in fact, could help family firms adapt business strategies to the difficulties imposed by the current financial crisis. In fact, one of the main challenges for firms is to adapt/to react to a crisis situation.

Furthermore, there is no significant relationship between the two dimensions of FI and market performance (Barontini and Caprio, 2006; Villalonga and Amit, 2006). It is worth noting that the characteristic of the CAR index is also to express outside investors' and capital market's confidence in the company's development plans .

Regarding the relationship between *familiness* and performances, our analysis contributes to a lively and controversial debate. Favero *et al.* (2006) found a positive correlation between *familiness* and accounting performance but, similarly to our results, they show no relationship with market performance. On the other hand, Giovannini (2010) found a negative relation(ship) between market prices (BHAR) and the family involvement. This evidence supported the findings of Rutherford *et al.* (2008) according to which such variety in results shows how the indicator used to express the level of FI can only potentially represent family influence on the company. However, it does not capture the essence of *familiness* (Chrisman *et al.*, 2005), nor the impacts, on performance and risk, of invisible assets related to the family know-how that is gained over time (Bettinelli, 2011; Corbetta and Salvato, 2004). The literature, however, reveals the limitation inherent in the inability to isolate the specific effects of *familiness* on performances (Dyer, 2006). When the pattern of ownership affects the firm's performances (Perrini *et al.*, 2008; Volpin, 2002), there may be a possible relationship between ownership concentration and performance, irrespective of whether or not it is a family company.

Looking at the financial profile of the analyzed businesses, we did not find any significant relationship between the components of the FI indicator and Leverage (H4); however Leverage is positively correlated with the companies' size when measured in terms of annual sales. It does not follow, therefore, that changes in the level of FI in ownership and management are associated with a definition of financial structures characterized by different proportions of Equity and Debt. More indebted financial structures, however, may arise from the control needs of existing shareholders, who are very careful not to risk a dilution of capital brought by the

entry of new members (Basu *et al.*, 2009). Furthermore, an increase in the level of *familiness* is not associated with a variation in the risk of failure. This result leads us to believe that *familiness* is not an explanatory factor for firms' financial risk, expressed by Leverage or measured by failure's probability indicators (Z-Score). Considering these findings, we suggest, for future studies, to look for other risk determinants other than the firm's *familiness*.

With regards to the findings that emerged from the H5 tests, we obtained a negative relationship between family involvement in management and M&A<sup>5</sup>. The result, although innovative in that it analyzes the relationship between the specific managerial dimension and the active M&A value<sup>6</sup>, appears to be in line with the evidence found by other authors. As seen in previous parts of the paper, Caprio *et al.* (2011) argue in fact that European family firms show a greater propensity towards internal growth strategies. With specific reference to the managerial dimension, other studies highlighted that family managers manifest a higher aversion to risk (Bianco *et al.*, 2009), preferring to ensure the company's survival rather than implement external growth strategies (Anderson and Reeb, 2003).

## 9. Limitations and leads for future research

One limitation of our study is that we did not assess the role of family succession. Another limitation is due to the possibility that directors, although not directly associated with the family, are nevertheless an expression of the *familiness* of a company, as well as appointed by family members (Astrachan *et al.*, 2002; Barontini and Caprio, 2006). Another possible limitation of our results is due to the fact that the degree of *familiness* was evaluated at the beginning (2006) and end (2011) of the considered period. FI, also, is not a continuous variable because it does not measure the level of *familiness* of companies in which the size of the business interest held by the family is less than 20%. Moreover, it should be noted that the indicator used for the definition of the FI indicator only considers the first dimension of the F-PEC: power (Astrachan *et al.*, 2002). Consequently, it was not possible to evaluate the role of family members from a qualitative point of view, in terms of their culture and experience. This limitation, among others, could at least partially justify the disparity of the results in terms of the relationship between FI and corporate performance. The incompleteness of the indicator in representing the qualitative dimensions of *familiness*, in fact, could well be due to its partial inadequacy in evaluating the effect of FI on business dynamics.

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<sup>5</sup> Looking at the effect of the control variables, we noticed that there is a significant positive relationship between M&A and the companies' size measured in annual sales. Furthermore, M&A volume is on average lower for manufacturing companies than for companies operating in services industry, controlling for other explanatory variables.

<sup>6</sup> In contrast, Miller *et al.* 2010 reveal a negative relationship between the size of the stake held by the family and propensity for M&A.

Given these limitations, future work will entail completing the FI indicator also by considering the qualitative determinants included in the F-PEC (experience and culture). We intend, also, to extend the research by comparing the key dimensions of *familiness* of Italian listed companies with firms operating in other countries, which are characterized by different governance models. This research could then be completed by examining acquisitions in relation to the strategic motivations that led to such investments and the possible contribution of these strategies to the value creation process.

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