

## **Is the Family an ‘Asset’ or ‘Liability’ for Firm Performance? The Moderating Role of Environmental Dynamism**

### ***Abstract***

By integrating the stewardship and agency perspectives, our study extends the understanding of the dynamics that regulate the family as either an asset or liability for the firm. Our results show that the percentage of family members on the top management team (TMT) has an inverted U-shaped relationship with firm performance. However, when environmental dynamism is low this curvilinear relationship becomes steeper. When environmental dynamism is high, an increased percentage of family members on the TMT enhances firm performance.

### ***Introduction***

While much research exists on family firms, one topic that remains under researched is how well (*or poorly*) family influence affects family firm performance (De Massis, Sharma, Chua, and Chrisman 2012; Gedajlovic, Carney, Chrisman, and Kellermanns 2012). Understanding performance in family firms is important, given the prevalence of family businesses and their crucial role in the economy worldwide (Carsrud and Brännback 2012; La Porta, López de Silanes, and Shleifer 1999). For instance, in the USA, family firms employ up to 80 percent of the workforce and produce 40–60 percent of the USA’s GNP (Arregle, Hitt, Sirmon, and Very 2007; Carsrud 1994; Neubauer and Lank 1998; Sharma, Chrisman, and Chua 1996). Claessens, Djankov, and Lang (2000) found extensive family control in more than half of the 2980 East Asian corporations they studied; while Faccio and Lang (2002) identified slightly more than 44 percent of 5232 firms in their sample from 13 Western European countries as family firms.

Some scholars claim that family firms present a unique and favorable entrepreneurial setting for achieving positive outcomes (e.g., Casillas, Moreno, and Barbero 2010; Cruz and Nordqvist 2012; Ling and Kellermanns 2010; Salvato 2004). Other scholars, however, have found that family firms are risk adverse and manifest path dependent behaviors that constrain performance (Beck, Janssens, Debruyne, and Lommelen 2011; Kellermanns, Eddleston, Sarathy, and Murphy 2012; Mazzola, Sciascia, and Kellermanns 2012; Carney, Gedajlovic, Heugens, Van Essen, and Van Oosterhout 2011). As a result, two contradictory perspectives of family business conduct and

performance are prominent in the literature—stewardship and agency (see e.g., Le Breton-Miller, Miller, and Lester 2011; Le Breton-Miller and Miller 2009). The stewardship perspective suggests that family members view themselves as stewards of the firm and view the firm as something that must be nurtured through entrepreneurship for the support of future generations. They are willing to sacrifice and invest resources to make the firm healthy and to enhance value for all stakeholders. The agency perspective views family members as acting out of parochial preferences and purposes. The family members are willing to underinvest in the firm, avoid risk, and extract resources to pursue personal family interests (Le Breton-Miller and Miller 2009).

Drawing on these two perspectives and relying on a dataset of Swiss firms, we work to advance this debate and better understand *how* family influence—in terms of the percentage of family members on the top management team (TMT) compared to non-family members (see e.g., Zahra, Neubaum, and Larraneta 2007)—affects the performance of family firms. Additionally, given the importance played by the environment in which a firm operates (Bettis and Hitt 1995; Hamel 2000), we also explore *how* differences in firms' environmental dynamism—the degree of uncertainty, complexity, and change emanating from the external environment (Baum and Wally 2003; Keats and Hitt 1988; Miller and Friesen 1983)—affect the family influence/firm performance relationship.

Relevant contributions to the family business literature emerge from our study. First, this study offers a more complete explanation of family firm performance by clarifying the role played by family members on the TMT and the importance of the environment in which the family firm operates. In particular, it offers insights on why an inverted U-shaped relationship exists between the percentage of family members on the TMT and firm performance. The study also explains why, in low dynamic markets, this non-linear relationship becomes steeper, while in high dynamic markets, an increased percentage of family members on the TMT enhances firm performance. Second, by integrating the stewardship and agency perspectives, we show how these two theories complement each other, thus further reconciling (Le Breton-Miller et al. 2011; Le Breton-Miller

and Miller 2009) their positive and negative effects on family firm performance. Third, we confirm that family firms are heterogeneous entities (e.g., García Álvarez and López-Sintas 2001; Sharma and Nordqvist 2008; Westhead and Howorth 2007) based on the percentage of family members on the TMT and that family firms perform differently depending on the environment in which they operate. Finally, our study complements and extends previous works on the relationship between the presence of family members on the TMT and family firm performance (De Massis, Kotlar, Campopiano, and Cassia *forthcoming*; Kellermanns et al. 2012; Mazzola et al. 2012; Minichilli, Corbetta, and MacMillan 2010).

## ***Theoretical Background and Hypotheses***

### **The Stewardship and Agency Perspectives in Family Firms**

Family firms play a crucial role in today's economy (Carsrud and Brännback 2012; La Porta et al. 1999). A family firm is defined as a company in which a family a) possesses a significant ownership stake, b) has multiple family members involved in its operations, and c) recognizes its organization as a family firm (Sirmon, Arregle, Hitt, and Webb 2008). Miller and colleagues (e.g., Le Breton-Miller et al. 2011; Le Breton-Miller and Miller 2009) highlight the positive and negative aspects of family firms within the stewardship and agency perspectives.

Stewardship is defined as “human caring, generosity, loyalty, and responsible devotion, usually to a social group or institution” (Le Breton-Miller et al. 2011, p. 705). Accordingly, the stewardship perspective suggests that individuals view their organization as a means to benefit all the stakeholders, and not simply themselves. These conditions are predominant when family members have a strong emotional attachment to the firm and are willing to build a robust enterprise that creates value and provides benefits for other parties. Thus, the family is viewed as a source of competitive advantage whose uniqueness derives from the integration of the family and business life (Habbershon and Williams 1999). Family members thus behave as stewards of the family firm whose motives are aligned with the objectives of the organization, which must be nurtured for the

support of future generations (Corbetta and Salvato 2004). They are highly dedicated to the business and tend to place the firm's objectives ahead of their own. Such behavior helps strengthening family relations by fostering trust, interdependence, and commitment to the business's long-term success (Corbetta and Salvato 2004; Eddleston and Kellermanns 2007). According to the stewardship perspective, family firms are capable of achieving high-level performance, given that family managers see further ahead, compared, for instance, to managers in non-family companies. This stimulates long-term investment policies, innovation, and commitment to customers (e.g., Eddleston, Kellermanns, and Sarathy 2008; Miller et al. 2008; Uhlaner, Kellermanns, Eddleston, and Hoy 2010).

From the other side, the agency perspective suggests that family members are driven by self-interest and use the business for parochial purposes (e.g., Le Breton-Miller et al. 2011; Le Breton-Miller and Miller 2009). Based on this view, although family firms may experience lower principal-agent agency costs (Anderson and Reeb, 2003; Le Breton-Miller and Miller 2009), they are likely to be exposed to other agency costs. Family members may use the business to serve only the family and its needs at the expense of other shareholders (Schulze, Lubatkin, Dino, and Buchholtz 2001). For instance, they may be willing to hire incompetent family executives for family reasons (Lubatkin, Ling, and Schulze 2007) or underinvest in the firm and extract resources for personal purposes (e.g., Le Breton-Miller et al. 2011; Le Breton-Miller and Miller 2009). As a result, family members may avoid risk and be path dependent to preserve family assets and allow a constant flow of dividends.

In fact, some scholars depict family firms as short-lived organizations facing the challenge of being subject to conservatism, path dependency, and slow-growing performance (Miller et al. 2008; Morck and Yeung 2003; Schulze, Lubatkin, and Dino 2003). As Le Breton-Miller et al. (2011) explain, if family decision makers "are risk averse and deploy significant resources for parochial purposes, they cannot invest adequately in the firm or in renewing its products and processes, physical plant, or capabilities." Consequently, family firms will experience "inferior investment in

the infrastructure and future of the business [...] scarce liquid resources due to abundant dividends or other expenses [...] and an insistence on lock-step earnings stability to cater to family risk aversion and financial needs” (p. 706).

Therefore, we argue that the likelihood of stewardship and agency perspectives playing a role in a family firm depends on the level of family influence in business. In particular, we predict the existence of an inverted U-shaped relationship between the percentage of family executives on the TMT and family firm performance. Also, we contend that this relationship is affected by the degree of dynamism existing in the external environment (Baum and Wally 2003).

### **Environmental Dynamism**

Environmental dynamism concerns the amount of uncertainty, complexity, and change emanating from the external environment (Baum and Wally 2003; Keats and Hitt 1988). Miller and Friesen (1983) call dynamism in the general environment “the rate of change of innovation in the industry as well as the uncertainty or unpredictability of the actions of competitor or customer” (p. 222). Accordingly, dynamic environments have the potential to create new business opportunities for firms (Carsrud et al. 2009), but simultaneously pose serious challenges to their survival and growth (Bettis and Hitt 1995). Dynamic markets are characterized by changes in technologies, variations in customer preferences, and fluctuations in product demand that can make current products obsolete and require the development of new ones (Jansen, Van Den Bosch, and Volberda 2005; Sørensen and Stuart 2000). Thus, in highly dynamic environments, firms must respond rapidly and effectively to competitors’ actions, customers’ needs, and other major changes (Combs, Ketchen, Ireland, and Webb 2011; Helfat and Raubitschek 2000). Scholars have argued that managers facing uncertain business environments tend to be more entrepreneurial and to achieve higher performance than managers in less turbulent environments (Aragón-Correa and Sharma 2003; Lumpkin and Dess 2001).

### **Family Members on the Top Management Team and Family Firm Performance**

Previous literature shows that a higher percentage of family members on the TMT favors family firm performance. Having family executives strengthen stewardship behavior towards the organization (Miller et al. 2008), which contributes to an extraordinary commitment to proactively search for innovative strategies and to exercise stewardship over the well-being and continuity of the firm (cf. *asset*) (Miller and Le Breton-Miller 2005; Miller et al. 2008).

Stewardship leads family executives to invest in product research, market share, and reputation development. Intensive training programs are developed to coach employees to do their job well, foster the development of new products, and acquire new knowledge. To this end, family firms devote significant efforts to building “a group of talented, motivated and loyal employees” to guarantee the business’s prosperity over time (Miller et al. 2008, p. 55). Moreover, family executives dedicate more attention to “build enduring networks and associations with clients and other suppliers of valuable resources,” reinforcing the company’s market share (Miller et al. 2008, p. 56). This motivates family firms to be closer to their customers, to improve the exchange of information with them, and to consolidate their family trademark by directing more effort into marketing activities that strengthen performance outcomes (Miller and Le Breton-Miller 2005).

Additionally, given family members’ mutual understanding and intense social relationships (Barney, Clark, and Alvarez 2003; Salvato and Melin 2008), family executives are capable of sharing and efficiently using their knowledge and experiences to arrive at creative and innovative ideas that may support increased performance (Chirico and Salvato 2008; Hoffman, Hoelscher, and Sorenson 2006). Fiol (1994) and Michie, Dooley, and Fryxell (2006), as well as Ling and Kellermanns (2010) in a family firm context, found that high levels of common understanding among team members are positively related to innovative efforts and performance outcomes. Accordingly, many scholars claim that the family is the oxygen that feeds the fire of entrepreneurship (Aldrich and Cliff 2003; Rogoff and Heck 2003). This school of thought suggests that the long-term nature of family firms allows family executives “to dedicate the resources required for innovation and risk taking, thereby fostering entrepreneurship” (Zahra, Hayton, and

Salvato 2004, p. 363). Thus, an increased percentage of family members on the TMT potentially enables a firm to perform increasingly well while combining their unique family resources (Habbershon and Williams 1999; Zellweger, Eddleston, and Kellermanns 2010). This allows them to guarantee and sustain the success of the family firm over time (Corbetta and Salvato 2004; Eddleston and Kellermanns 2007; Zellweger, Nason, and Nordqvist 2012).

However, although an increased percentage of family members on the TMT may improve performance, the benefits of stewardship behavior are at risk of being absorbed by the negative effects of agency problems and the resulting path dependency (cf. *liability*) (e.g., Le Breton-Miller et al. 2011; Le Breton-Miller and Miller 2009). The agency perspective on family firms points to problems that may arise from family influence in the business (Chrisman, Chua, and Litz 2004). A high percentage of family members on the TMT (especially when it becomes almost exclusive) may favor family-centric self-interested conduct over stewardship and business initiatives. This conduct includes hiring incompetent family members, extracting resources for family purposes, and avoiding taking business risks to preserve the family wealth (Le Breton-Miller and Miller 2009; Lubatkin et al. 2007; Schulze et al. 2001). In particular, relationship conflicts, “which typically includes tension, animosity, and annoyance among members within a group” (Jehn 1995, p. 258), are likely to escalate. Le Breton-Miller et al. (2011) found that “the more family members there are in the business, the more they will be required to interact; moreover, the more family ties are subject to conflict and emotional exchanges, the higher the level of family embeddedness and the more likely it is that a family’s self-interested behavior will dominate business stewardship” (p. 707).

In particular, relationship conflicts constrain performance while reducing family members’ ability to recognize alternative approaches. Additionally, Kellermanns and Eddleston (2004) underline that “not only does relationship conflict have a devastating effect on a family firm’s performance, but it also prevents task and process conflict from having a beneficial effect on performance” (p. 221). To avoid conflict, family decision makers often maintain the status quo,

which does not require debate and apparently provides familiarity (Chirico, Sirmon, Sciascia, and Mazzola 2011b). In fact, some evidence suggests that high family influence in business often amplifies family firm myopic, path dependent behaviors in which previous solutions are viewed as less risky (Chirico and Nordqvist 2010; Gallo, Tápies, and Cappuyns 2004; McConaughy, Matthews, and Fialko 2001). For instance, Chirico and Nordqvist (2010) and Sciascia, Mazzola, and Chirico (2012) found that increased family influence in business may run counter to a proactive entrepreneurial process, and instead support conservative efforts promoting stability and poor outcomes. The desire to preserve the family's socioemotional wealth results in an unwillingness to undertake necessary risks (Gomez-Mejia, Haynes, Núñez-Nickel, Jacobson, and Moyano-Fuentes 2007). Thus, the more family members are on the TMT compared to non-family members, the more apt they are to identify with the family rather than the business, and the more likely that family parochial goals, family conflicts and conservative behaviors will prevail over business matters (see Chrisman and Patel 2012; Le Breton-Miller et al. 2011; Le Breton-Miller and Miller 2009; Schulze et al. 2001).

As such, we argue that while a moderate percentage of family members on the TMT provides the potential for increased family firm performance, a high percentage of family members on the TMT might undermine this potential. Specifically, an increase in this percentage from low to moderate is beneficial for performance because of family members' stewardship. At higher levels, however, the presence of family executives might become counterproductive; the emergence of agency problems becomes more likely and eventually their impact exceed the benefits derived from stewardship behavior. Thus, a moderate percentage of family members on the TMT is associated with the highest level of firm performance. This is in line with recent research that suggests the concept of family and the related stewardship behaviors can be extended to non-family members as well (see e.g., Chirico, Ireland, and Sirmon 2011a; Karra, Tracey, and Phillips 2006). When family and non-family members are equally represented or balanced on the TMT we can expect that the family firm would benefit best from stewardship behaviors from both family (e.g., Eddleston and



Kellermanns 2007) and non-family members (e.g., Corbetta and Salvato 2004). In formal terms, we predict that:

**Hypothesis 1:** *An inverted U-shaped relationship exists between the percentage of family members on the top management team and family firm performance.*

### **The Moderating Role of Environmental Dynamism**

In this study, we also contend that the degree of dynamism in the external environment might affect the way family executives take decisions to support the family firm competitiveness and thus the firm's performance. Specifically, we predict that in low dynamic environments although a moderate percentage of family members on the TMT should have positive effects on firm performance, with the positive elements of stewardship outweighing agency costs (Miller et al. 2008; Salvato, Chirico, and Sharma 2010), a higher increase in this percentage is likely to lead to agency problems and path dependency (Arosa, Iturralde, and Maseda 2010; Oswald, Muse, and Rutherford 2009). In fact, a low dynamic market 'does not require' and 'does not force' (Aragón-Correa and Sharma 2003; Lumpkin and Dess, 2001) family executives to take appropriate actions to perform better than competitors and to achieve positive results (e.g., Casillas et al. 2010; Gallo et al. 2004). On the contrary, it favors the emergence of opportunistic behaviors and family goals that differ from those of the firm. Family executives will be more interested in preserving the family wealth and harmony while solving family conflicts that may be generated by increased family influence (Kellermanns and Eddleston 2004). Also, low dynamic markets can favor the decision of some family members to extract assets from the business for personal perquisites, positions, and dividends. As a consequence, fewer resources will be available to pursue core competency development, infrastructure improvement, and product-market renewal (e.g., Bertrand and Schoar 2006; Le Breton-Miller and Miller 2009). For example, Casillas et al. (2010) argue that family firms in low dynamic environments tend to maintain their competitive position within the traditional business and avoid the risk of taking on unrelated business activities. Gallo et al. (2004) found that family firms in less capital-intensive industries have many family members involved in the business

but perform poorly. Thus, we expect that the inverted U-shaped relationship between the percentage of family members on the TMT and family firm performance will be steeper when environmental dynamism is low.

In high dynamic environments, the relationship is likely to be distinctly different. The market requires family executives to act as stewards of the business, being reactive and change-oriented to survive (e.g., Fini, Grimaldi, Marzocchi, and Sobrero 2012; Salvato et al. 2010). This lowers the risk of falling into familiarity traps. Fini et al. (2012) found that the greater family executives' perception of environmental dynamism, the greater their entrepreneurial behavior. Being trapped in intra-family conflicts and favoring familiar or mature solutions and strategies rather than exploiting new ones are not viable options in high-velocity markets (Baum and Wally 2003; Eisenhardt and Martin 2000; Sirmon, Hitt, Arregle, and Campbell 2010). For example, Blake and Saleh (1995) and Lumpkin, Brigham, and Moss (2010) argue that family executives are more apt to take initiative and explore new opportunities in dynamic environments. Also, Cruz and Nordqvist (2012) explain that in dynamic environments when there are more family members involved in governance and/or daily operations (e.g. in the second generation; Gersick et al. 1997), they are more likely to recognize opportunities for growth in order to revitalize and further expand the business (see also Nordqvist, Habbershon, and Melin 2008). Accordingly, Casillas et al. (2010) found that family firms are better able to translate family executives' proactiveness into positive financial outcomes when dynamism is high. Environmental dynamism increases family executives' awareness of the need to display entrepreneurial behavior to sustain the family firm competitiveness across generations. As a result, the positive impact of family influence in business outweighs the negative impact of agency problems. Thus, we expect that an increased percentage of family members on the TMT would enhance family firm performance when environmental dynamism is high. In formal terms, we predict that:

**Hypothesis 2:** *Environmental dynamism moderates the curvilinear relationship between the percentage of family members on the top management team and family firm performance such that a) the inverted U-shaped relationship will be steeper when*

*environmental dynamism is low, while b) the percentage of family members on the top management team will enhance family firm performance when environmental dynamism is high.*

## **Methods**

### **Data and Sample**

Data for this study were collected with a survey of Swiss family firms. To select firms for the survey, we identified all the companies registered with the Chamber of Commerce in Canton Ticino, Switzerland. This provided a sampling frame of 967 firms. Then, following Zahra (2005) and Miller et al. (2008), we determined which of these firms were—in accordance with our definition—family firms. A total of 592 were family firms. We sent the survey to them and received 199 usable responses, a response rate of 33.61 percent. We compared the respondent firms' size, age, and industry with those of non-respondents (whose data were provided by SwissFirms), and found no statistically significant differences. Moreover, no statistically significant differences were found between early and late respondents.

The survey targeted the firms' two highest executives (the CEO and the next-highest senior position). We addressed inter-respondent reliability by correlating the responses per firm. The result indicates significant inter-respondent reliability (Interclass Correlation Coefficient  $> 0.7$ ;  $p < 0.001$ ). Regarding the percentage of family members on the TMT, we found differences in only a few cases. When a mismatch occurred, we called the firm to obtain accurate data.

To address issues of common methods bias, we used the second respondent's data for firm performance and the first respondent's data for environmental dynamism. Also, we performed the Harman's one-factor test on items included in our regression model. The results of the unrotated factor analysis showed that no single factor was dominant, suggesting that common method bias was not a threat in our data (Podsakoff and Organ 1986).

The questionnaire was developed in English, then translated into Italian through a translation and back-translation procedure by two university academics fluent in both languages. Following

this, the questionnaire was pilot-tested on six senior executives belonging to three family firms (two from each firm), and on five academics with expertise in research methodology and family firms. Their recommendations on the content of the survey instrument, wording of items, terminology, and clarity were used to revise the instrument. We piloted the refined instrument on a sample of 53 family firms and made final revisions. The study's key constructs are measured on a five-point scale.

## Variables

*Performance* was assessed through four related financial items ( $\alpha = 0.85$ ) ("how would you rate your company's performance as compared to your competitors: net profit; sales growth; cash flow; growth of net worth") (see Wiklund and Shepherd 2003). To calculate *the percentage of family members on the TMT*, we asked respondents to report on the number of family and non-family executives on the TMT (number of family executives/total number of executives on the TMT) (see Zahra et al. 2007). *Environmental dynamism* was measured with a three-item index taken from Jansen et al. (2005): "environmental changes in our local market are intense," "customers regularly ask for complete new products and services," and "in our market, changes are taking place continuously" ( $\alpha = 0.80$ ).

We also controlled for seven variables<sup>1</sup> believed to influence the relation between our dependent and independent variables. First, because the age of a firm may affect its performance (Leonard-Barton 1992), we controlled for *age* by measuring the number of years the firm had been in existence. Second, because access to external resources is easier for larger firms, and this can affect performance (Zahra and Nielsen 2002), we controlled for *size* by measuring the log of the number of full-time employees. Third, following previous studies (Sciascia et al. 2012), we controlled for R&D investments ( $\alpha = 0.79$ ). Fourth, given the potential effects of a firm's

---

<sup>1</sup> We also added as control variables, generation in control and generational involvement. These two controls were not significant in any of our regressions. Although there is not universal agreement on this issue (Atinc, Simmering, and Kroll 2012; Breaugh 2008; Spector and Brannick 2011), we felt that including nonsignificant control variables would eat up degrees of freedom; and also as expected generation in control was highly correlated with firm age. For these reasons, we finally did not control for these two variables.

*participative strategy* ( $\alpha = 0.87$ ) and *knowledge diversity* ( $\alpha = 0.85$ ) on family firm performance (Chirico et al. 2011b), we controlled for these variables as well. Fifth, because industries may affect performance outcomes (Zahra and Bogner 2000), we controlled for industry type. The agriculture industry was used as the comparison industry, with dummy variables differentiating the following industries: electronics, trade, construction, manufacturing, transportation/communication, finance, and services, and others. Finally, we controlled whether two (0) or more (1) family members were involved/working in the business.

## **Results**

The descriptive statistics and correlations of the study's variables are presented in Table 1. To check for normality, we employed the skewness/kurtosis tests (sktest command). Performance appeared significantly nonnormal in skewness, kurtosis and both statistics considered jointly. Based on the results of STATA's "ladder" command, a square transformation was needed for performance to closely resemble a normal distribution ( $\chi^2(2) = 3.64$ ;  $p(\chi^2) = 0.162$ ) (Hamilton 2009; Kennedy 2008; Wooldridge 2009).

To test for heteroscedasticity, we screened the data with the help of the Breusch-Pagan/Cook-Weisberg test and the White test (Cameron and Trivedi's decomposition of the IM-test). The former tests whether the estimated variance of the residuals from a regression is dependent on the values of the independent variables; the latter establishes whether the residual variance of a variable in a regression model is constant. Both the Breusch-Pagan/Cook-Weisberg test ( $\chi^2(1) = 1.69$ ;  $prob > \chi^2 = 0.19$ ) and the White test ( $\chi^2 = 128.56$ ;  $p = 0.76$ ) indicated that heteroscedasticity was not a concern in our study (Hamilton 2009; Kennedy 2008; Wooldridge 2009). We used regression analysis to test our hypotheses (see Table 2).

– Insert Tables 1 and 2 about here –

To test our first hypothesis, in model 1 we used only the control variables; in model 2 we added environmental dynamism and the percentage of family members on the TMT; and in model 3

we added its squared term. As expected, the percentage of family members on the TMT was positive and significantly related with family firm performance; its squared term was negative and significantly related (although marginally) to family firm performance. Thus, the analytical results marginally supported our first hypothesis. To check for the robustness of this significant nonlinear effect, we also performed the joint  $F$ -test that assesses whether the percentage of family members on the TMT and the percentage of family members on the TMT squared jointly have a significant effect on performance. The joint  $F$ -test further supported our hypothesis (the percentage of family members on the TMT = 0; the percentage of family members on the TMT squared = 0;  $F(2,181) = 3.04$ ;  $Prob > F = 0.05$ ) (Hamilton 2009; Kennedy 2008; Wooldridge 2009). Further, in support of Hypothesis 1, Figure 1 illustrates the presence of the predicted inverted U-shaped relationship.

Hypothesis 2 suggests that environmental dynamism moderates the nonlinear relationship between the percentage of family members on the TMT and family firm performance. We included the interaction terms between environmental dynamism and the percentage of family members on the TMT, and between environmental dynamism and the percentage of family members on the TMT squared in additive models (models 4 and 5, respectively). In both models, the interaction terms are statistically significant, confirming that environmental dynamism moderates the nonlinear relationship between the percentage of family members on the TMT and family firm performance. Hypotheses 2 further suggests that the inverted U-shaped relationship would be steeper when environmental dynamism is low, while the percentage of family members on the TMT would enhance family firm performance when environmental dynamism is high. To fully interpret our findings, we plotted the results in Figure 2; the results fully support our second hypothesis.

– Insert Figures 1 and 2 about here –

## ***Discussion***

By integrating stewardship and agency perspectives, our study extends the understanding of the dynamics that result in a family being an asset or liability for the firm. In particular, it offers a

keen understanding of the joint effect of family influence and environmental dynamism on the performance of firms. Our results show that the percentage of family members on the TMT has an inverted U-shaped relationship with firm performance (see Figure 1). That is, although a moderate percentage of family members on the TMT supports positive performance, a further increase in this percentage drives negative effects.

Stated differently, the more a business and its primary executive actors are socially embedded in a family, the more likely that agency-based rationales will dominate those of stewardship. This is in line with the arguments of Le Breton-Miller and Miller (2009) and Le Breton-Miller et al. (2011) that as family influence in a business increases, the relevance of a stewardship perspective decreases whereas that of an agency perspective increases. However, our study reveals that a more complex relationship (inverted U-shaped) exists between family influence and business performance. While many studies indicate that family involvement has an unambiguously positive or negative influence on family firm outcomes, our study shows that both positions have merit and clarifies them.

Also, as we predicted this inverted U-shaped relationship becomes steeper when environmental dynamism is low: Figure 2 shows that a moderate percentage of family members on the TMT maximizes family firm performance. It also shows that stewardship behavior dramatically wanes and that self-interested agency behavior predominantly waxes only when the percentage of family members on the TMT increases further. Rather, an increased percentage of family members on the TMT enhances family firm performance when environmental dynamism is high.

Moreover, our study further reconciles the two predictions of the stewardship and agency perspectives on family firm outcomes. In particular, it address the call made by Le Breton-Miller et al. (2011) for studies that extended the family firm research on stewardship and agency “to the realm of smaller [and private] family businesses as the intimate and personal nature of such companies may make them ideal venues for stewardship” (p. 718). Our results suggest that in small

and medium-sized private firms<sup>2</sup>, the prevalence of stewardship and agency behaviors depends on the extent of family influence in the business and the dynamism in the market in which the firm operates. In so doing, our findings confirm that family firms are heterogeneous entities (García Álvarez and López-Sintas 2001; Sharma and Nordqvist 2008; Westhead and Howorth 2007).

Finally, our work complements previous studies that have theorized but not found a nonlinear relationship between the presence of family executives and the performance of family firms (see Mazzola et al. 2012). It also extends the work of Kellermanns et al. (2012) that found a positive relationship between family management involvement and family firm performance and of Minichilli et al. (2010) that this relationship is nonlinear but with a U-shaped form. Surprisingly, both Kellermanns et al. (2012) and Minichilli et al. (2010) did not control for dynamism or industry in their regression analyses. We, however, offer a more accurate analysis of this relationship through the moderating role of environmental dynamism. In so doing, we also extend the recent work of De Massis et al. (forthcoming).

However, this work is not without limitations that require future research. First, we did not consider succession, which may lead to lower performance when not handled effectively. Second, we did not directly measure stewardship or agency perspectives in the family firm, but instead argued that they are crucial components to explain the family influence/firm performance relationship. Future research clearly needs to be channeled in these directions. Third, our data were collected exclusively in Switzerland, limiting the possibility of generalizing our findings to other countries. Finally, our measures are based on respondents' personal perceptions, which incorporated subjectivity in the analysis. For instance, an objective measure of environmental dynamism should be used in future studies (see e.g., Bamford, Dean, and Douglas 2004; Bradley, Shepherd, and Wiklund 2011; Dean 1995; Dess and Beard 1984). For instance, the six dimensions of organizational environments proposed by Aldrich could be used (1979): a) *capacity*—the relative level of resources available to the organization; b) *heterogeneity*—the degree of similarity between

---

<sup>2</sup> In our dataset, only five firms have more than 250 employees.



elements of the domain population; c) *stability*—the degree of turnover in environmental elements; d) *concentration*—the degree to which resources are evenly distributed over the environment; e) *consensus*—the degree to which an organization’s claim to a specific domain is disputed by other organizations; and f) *turbulence*—the degree of interconnection among elements in environment.

Our work has also some important managerial implications. In particular, we recognize that “too much family” can be dangerous from a financial perspective due to family members’ self-serving behaviors. However, we also highlight the importance of considering how environmental dynamism affects family members’ conduct and thus family firm performance. We warn family actors about the potential advantages (*assets*) and, most important, the disadvantages (*liabilities*) of family influence in business, especially in different environmental contexts. Accordingly, we trust this study will help family firms to better understand how to maximize their performance outcomes, and will encourage family firm scholars to develop future work on the joint effects of family and non-family TMT composition and of external dynamism in family firms.

## References

- Aldrich, H., and J. Cliff (2003). "The Pervasive Effects of Family on Entrepreneurship: Toward a Family Embeddedness Perspective," *Journal of Business Venturing*, 18(5), 573-596.
- Anderson, R. C., and D. M. Reeb (2003). "Founding-family ownership and firm performance: evidence from the S&P 500," *The Journal of Finance* 58(3): 1301-1327.
- Aragón-Correa, J. A., and S. Sharma (2003). "A Contingent Resource-Based View of Proactive Corporate Environmental Strategy," *Academy of Management Review*, 28(1), 71-88.
- Arosa, B., T. Iturralde, and A. Maseda (2010). "Outsiders on the Board of Directors and Firm Performance: Evidence from Spanish Non-Listed Family Firms," *Journal of Family Business Strategy*, 1(4), 236-245.
- Arregle, J. L., M. A. Hitt, D. Sirmon, and P. Very (2007). "The Development of Organizational Social Capital: Attributes of Family Firms," *Journal of Management Studies*, 44(1), 73-95.
- Atinc, G., M. J. Simmering, and M. J. Kroll (2012). "Control variable use and reporting in macro and micro management research," *Organizational Research Methods*, 15(1), 57-74.
- Bamford, C. E., T. J. Dean, and T. J. Douglas (2004). "The temporal nature of growth determinants in new bank foundings: implications for new venture research design," *Journal of Business Venturing*, 19(6), 899-919.
- Barney, J. B., D. N. Clark, and S. Alvarez (2003). "When Do Family Ties Matter? Entrepreneurial Market Opportunity Recognition and Resource Acquisition in Family Firms," *Babson-Kaufman Entrepreneurship Research Conference*, Available at SSRN: <http://ssrn.com/abstract=1791760>.
- Baum, J. R., and S. Wally (2003). "Strategic Decision Speed and Firm Performance," *Strategic Management Journal*, 24(11), 1107-1129.
- Beck, L., W. Janssens, M. Debruyne, and T. Lommelen (2011). "A Study of the Relationships Between Generation, Market Orientation, and Innovation in Family Firms," *Family Business Review*, 24(3), 252-272.
- Bertrand, M., and A. Schoar (2006). "The role of family in family firms," *The Journal of Economic Perspectives*, 20(2), 73-96.
- Bettis, R. A., and M. A. Hitt (1995). "The New Competitive Landscape," *Strategic Management Journal*, 16(1), 7-19.
- Blake, C. G., and S. D. Saleh (1995). "A model of family owned small business performance," *Family Business Annual*, 1(1), 22-31.
- Bradley, S. W., D. A. Shepherd, and J. Wiklund (2011). "The importance of slack for new organizations facing 'tough' environments," *Journal of Management Studies*, 48(5), 1071-1097.
- Breaugh, J. A. (2008). "Important considerations in using statistical procedures to control for nuisance variables in non-experimental studies," *Human Resource Management Review*,

18(4), 282-293. Carsrud, A. L. (1994). "Meanderings of a resurrected psychologist or, lessons learned in creating a family business program," *Entrepreneurship Theory and Practice*, 19(1), 39-48.

Carsrud, A. L. (1994). "Meanderings of a resurrected psychologist or, lessons learned in creating a family business program," *Entrepreneurship Theory and Practice*, 19(1), 39-48.

Carsrud, A., and M. Brännback (2012). "Understanding Family Businesses," New York, NY: Springer.

Carsrud, A., M. Brännback, J. Elfving, and K. Brandt (2009). "Motivations: the entrepreneurial mind and behavior," in Carsrud A., and J. Brännback. *Understanding the entrepreneurial mind*. New York, NY: Springer.

Casillas, J. C., A. M. Moreno, and J. L. Barbero (2010). "A Configurational Approach of the Relationship Between Entrepreneurial Orientation and Growth of Family Firms," *Family Business Review*, 23(1), 27-44.

Chirico, F., R. D. Ireland, and D. Sirmon (2011a). "Franchising and the Family Firm: Creating Unique Sources of Advantage Through 'Familianness'," *Entrepreneurship Theory and Practice*, 35(3), 483-501.

Chirico, F., and M. Nordqvist (2010). "Dynamic Capabilities and Trans-Generational Value Creation in Family Firms: the Role of Organizational Culture," *International Small Business Journal*, 28(5), 487-504.

Chirico, F., and C. Salvato (2008). "Knowledge Integration and Dynamic Organizational Adaptation in Family Firms," *Family Business Review*, 21(2), 169-181.

Chirico, F., D. Sirmon, S. Sciascia, and P. Mazzola (2011b). "Resource orchestration in family firms: investigating how entrepreneurial orientation, generational involvement, and participative strategy affect performance," *Strategic Entrepreneurship Journal*, 5(4), 307-326.

Chrisman, J. J., J. H. Chua, and R. A. Litz (2004). "Comparing the Agency Costs of Family and Non-Family Firms: Conceptual Issues and Exploratory Evidence," *Entrepreneurship Theory and Practice*, 28(4), 335-354.

Chrisman, J. J., and P. C. Patel (2012). "Variations in R&D investments of family and nonfamily firms: Behavioral agency and myopic loss aversion perspectives," *Academy of Management Journal*, 55(4), 976-997.

Claessens, S., S. Djankov, and L. H. Lang (2000). "The separation of ownership and control in East Asian corporations," *Journal of Financial Economics*, 58(1), 81-112.

Combs, J. G., J. D. J. Ketchen, R. D. Ireland, and J. W. Webb (2011). "The Role of Resource Flexibility in Leveraging Strategic Resources," *Journal of Management Studies*, 48(5), 1098-1125.

Corbetta, G., and C. A. Salvato (2004). "The Board of Directors in Family Firms: One Size Fits All?" *Family Business Review*, 17(2), 119-134.

- Cruz, C., and M. Nordqvist (2012). "Entrepreneurial Orientation in Family Firms: a Generational Perspective," *Small Business Economics*, 38(1), 33-49.
- De Massis A., J. Kotlar, G. Campopiano, and L. Cassia (forthcoming). "The Impact of Family Involvement on SMEs' Performance: Theory and Evidence," *Journal of Small Business Management*.
- De Massis, A., P. Sharma, J. H. Chua, and J. J. Chrisman (2012). *Family Business Studies: an Annotated Bibliography*. Cheltenham, UK: Edward Elgar Publishing.
- Dean, T. J. (1995). *New venture formations in United States manufacturing: The role of industry environments*. New York, NY: Garland Publishing.
- Dess, G. G., and D. W. Beard (1984). "Dimensions of organizational task environments," *Administrative Science Quarterly*, 52-73.
- Eddleston, K. A., and F. W. Kellermanns (2007). "Destructive and Productive Family Relationships: a Stewardship Theory Perspective," *Journal of Business Venturing*, 22(4), 545-565.
- Eddleston, K. A., F. W. Kellermanns, and R. Sarathy (2008). "Resource Configuration in Family Firms: Linking Resources, Strategic Planning and Technological Opportunities to Performance," *Journal of Management Studies*, 45(1), 26-50.
- Eisenhardt, K. M., and J. A. Martin (2000). "Dynamic Capabilities: What Are They?," *Strategic Management Journal*, 21(10/11), 1105-1121.
- Faccio, M., and L. H. Lang (2002). "The ultimate ownership of Western European corporations," *Journal of Financial Economics*, 65(3), 365-395.
- Fini, R., R. Grimaldi, G. L. Marzocchi, and M. Sobrero (2012). "The Determinants of Corporate Entrepreneurial Intention Within Small and Newly Established Firms," *Entrepreneurship Theory and Practice*, 36(2), 387-414.
- Fiol, C. M. (1994). "Consensus, Diversity, and Learning in Organizations," *Organization Science*, 5(3), 403-420.
- Gallo, M. Á., J. Tápies, and K. Cappuyns (2004). "Comparison of Family and Nonfamily Business: Financial Logic and Personal Preferences," *Family Business Review*, 17(4), 303-318.
- García Álvarez, E., and J. López-Sintas (2001). "A Taxonomy of Founders Based on Values: the Root of Family Business Heterogeneity," *Family Business Review*, 14(3), 209-230.
- Gedajlovic, E., M. Carney, J. J. Chrisman, and F. W. Kellermanns (2012). "The Adolescence of Family Firm Research Taking Stock and Planning for the Future," *Journal of Management*, 38(4), 1010-1037.
- Gersick, K. E., J. A. Davis, M. M. Hampton, I. Lansberg (1997). *Generation to generation: life cycles of the family business*. Cambridge, MA: Harvard University Press.
- Gomez-Mejia, L. R., K. T. Haynes, M. Núñez-Nickel, K. J. L. Jacobson, and J. Moyano-Fuentes (2007). "Socioemotional Wealth and Business Risks in Family-Controlled Firms: Evidence From Spanish Olive Oil Mills," *Administrative Science Quarterly*, 52(1), 106-137.

- Habbershon, T. G., and M. L. Williams (1999). "A Resource-Based Framework for Assessing the Strategic Advantages of Family Firms," *Family Business Review*, 12(1), 1-25.
- Hamel, G. (2000). *Leading the Revolution*. Boston, MA: Harvard Business School Press.
- Hamilton, L. C. (2009). *Statistics with Stata*. Mason, OH: Cengage Learning.
- Helfat, C. E., and R. S. Raubitschek (2000). "Product Sequencing: Co-Evolution of Knowledge, Capabilities and Products," *Strategic Management Journal*, 21.
- Hoffman, J., M. Hoelscher, and R. Sorenson (2006). "Achieving Sustained Competitive Advantage: a Family Capital Theory," *Family Business Review*, 19(2), 135-145.
- Jansen, J. J. P., F. A. J. Van Den Bosch, and H. W. Volberda (2005). "Managing Potential and Realized Absorptive Capacity: How Do Organizational Antecedents Matter?" *Academy of Management Journal*, 48(6), 999-1015.
- Jehn, K. A. (1995). "A multimethod examination of the benefits and detriments of intragroup conflict," *Administrative Science Quarterly*, 256-282.
- Karra, N., P. Tracey, and N. Phillips (2006). "Altruism and agency in the family firm: Exploring the role of family, kinship, and ethnicity," *Entrepreneurship Theory and Practice*, 30(6), 861-877.
- Keats, B. W., and M. A. Hitt (1988). "A Causal Model of Linkages Among Environmental Dimensions, Macro Organizational Characteristics, and Performance," *Academy of Management Journal*, 570-598.
- Kellermanns, F. W., and K. A. Eddleston (2004). "Feuding families: When conflict does a family firm good," *Entrepreneurship Theory and Practice*, 28(3), 209-228.
- Kellermanns, F. W., K. A. Eddleston, R. Sarathy, and F. Murphy (2012). "Innovativeness in Family Firms: a Family Influence Perspective," *Small Business Economics*, 38(1), 85-101.
- Kennedy, P. E. (2008). *A Guide to Econometrics*. Hoboken, NJ: Wiley, ÆBlackwell.
- La Porta, R., F. López de Silanes, and A. Shleifer (1999). "Corporate Ownership Around the World," *Journal of finance*, 54(2), 471-517.
- Le Breton-Miller, I., D. Miller, and R. H. Lester (2011). "Stewardship or agency? A social embeddedness reconciliation of conduct and performance in public family businesses," *Organization Science*, 22(3), 704-721.
- Le Breton-Miller, I., and D. Miller (2009). "Agency vs. stewardship in public family firms: A social embeddedness reconciliation," *Entrepreneurship Theory and Practice*, 33(6), 1169-1191.
- Leonard-Barton, D. (1992). "Management of Technology and Moose on Tables," *Organization Science*, 3(4), 556-558.
- Ling, Y., and F. W. Kellermanns (2010). "The Effects of Family Firm Specific Sources of TMT Diversity: the Moderating Role of Information Exchange Frequency," *Journal of Management Studies*, 47(2), 322-344.

- Lubatkin, M., Y. Ling, and W. Schulze (2007). "An Organizational Justice-Based View of Self-Control and Agency Costs in Family Firms," *Journal of Management Studies*, 44(6), 955-971.
- Lumpkin, G. T., K. H. Brigham, and T. W. Moss (2010). "Long-Term Orientation: Implications for the Entrepreneurial Orientation and Performance of Family Businesses," *Entrepreneurship & Regional Development: An International Journal*, 22(3-4), 241-264.
- Lumpkin, G. T., and G. G. Dess (2001). "Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: the Moderating Role of Environment and Industry Life Cycle," *Journal of Business Venturing*, 16(5), 429-451.
- Mazzola, P., S. Sciascia, and F. W. Kellermanns (2012). "Non-Linear Effects of Family Sources of Power on Performance," *Journal of Business Research*, 1-7.
- McConaughy, D. L., C. H. Matthews, and A. S. Fialko (2001). "Founding Family Controlled Firms: Performance, Risk, and Value," *Journal of Small Business Management*, 39(1), 31-49.
- Michie, S. G., R. S. Dooley, and G. E. Fryxell (2006). "Unified Diversity in Top-Level Teams: Enhancing Collaboration and Quality in Strategic Decision-Making," *International Journal of Organizational Analysis*, 14(2), 130-149.
- Miller, D., and P. H. Friesen (1983). "Successful and Unsuccessful Phases of the Corporate Life Cycle," *Organization Studies*, 4(4), 339-356.
- Miller, D., and I. Le Breton-Miller (2005). "Management Insights From Great and Struggling Family Businesses," *Long Range Planning*, 38(6), 517-530.
- Miller, D., I. Le Breton-Miller, and B. Scholnick (2008). "Stewardship vs. Stagnation: An Empirical Comparison of Small Family and Non-Family Businesses," *Journal of Management Studies*, 45(1), 51-78.
- Minichilli, A., G. Corbetta, and I. C. MacMillan (2010). "Top Management Teams in Family-Controlled Companies: 'Familianness,' 'Faultlines,' and Their Impact on Financial Performance," *Journal of Management Studies*, 47(2), 205-222.
- Morck, R., and B. Yeung (2003). "Agency Problems in Large Family Business Groups," *Entrepreneurship Theory and Practice*, 27(4), 367-382.
- Neubauer, F., and A. G. Lank (1998). *The family business: Its governance for sustainability*. New York: Macmillan.
- Nordqvist, M., T. G. Habbershon, and L. Melin (2008). "Transgenerational entrepreneurship: exploring entrepreneurial orientation in family firms," in Landström, H., H. Crijns, E. Laveren, D. Smallbone. *Entrepreneurship, sustainable growth and performance: Frontiers in European entrepreneurship research*. Cheltenham, UK: Edward Elgar.
- Oswald, S. L., L. A. Muse, and M. W. Rutherford (2009). "The Influence of Large Stake Family Control on Performance: Is It Agency or Entrenchment?" *Journal of Small Business Management*, 47(1), 116-135.
- Podsakoff, P. M., and D. W. Organ (1986). "Self-Reports in Organizational Research: Problems and Prospects," *Journal of Management*, 12(4), 531-544.

- Rogoff, E. G., and R. K. Z. Heck (2003). "Evolving Research in Entrepreneurship and Family Business: Recognizing Family as the Oxygen That Feeds the Fire of Entrepreneurship," *Journal of Business Venturing*, 18(5), 559-566.
- Salvato, C. (2004). "Predictors of Entrepreneurship in Family Firms," *The Journal of Private Equity*, 7(3), 68-76.
- Salvato, C., F. Chirico, and P. Sharma (2010). "Understanding Exit From the Founder's Business in Family Firms," *Advances in Entrepreneurship, Firm Emergence and Growth*, 12, 31-85.
- Salvato, C., and L. Melin (2008). "Creating Value Across Generations in Family-Controlled Businesses: The Role of Family Social Capital," *Family Business Review*, 21(3), 259-276.
- Schulze, W., M. Lubatkin, and R. Dino (2003). "Toward a Theory of Agency and Altruism in Family Firms," *Journal of Business Venturing*, 18(4), 473-490.
- Schulze, W., M. Lubatkin, R. Dino, and A. Buchholtz (2001). "Agency relationships in family firms: Theory and evidence," *Organization science*, 12(2), 99-116.
- Sciascia, S., P. Mazzola, and F. Chirico (2012). "Generational Involvement in the Top Management Team of Family Firms: Exploring Non-Linear Effects on Corporate Entrepreneurship," *Entrepreneurship Theory and Practice*.
- Sharma, P., J. J. Chrisman, and J. H. Chua (1996). *A review and annotated bibliography of family business studies*. Boston, MA: Kluwer Academic Publishers.
- Sharma, P., and M. Nordqvist (2008). "A Classification Scheme for Family Firms: From Family Values to Effective Governance to Firm Performance. In Tàpies, J., and J. L. Ward (Eds.), *Family Values and Value Creation: How Do Family-Owned Businesses Foster Enduring Values* (pp. 71-101). New York: Palgrave Macmillan.
- Sirmon, D., J.-L. Arregle, M. Hitt, and J. Webb (2008). "The Role of Family Influence in Firms' Strategic Responses to Threat of Imitation," *Entrepreneurship Theory and Practice*, 32(6), 979-998.
- Sirmon, D., M. Hitt, J.-L. Arregle, and J. T. Campbell (2010). "The Dynamic Interplay of Capability Strengths and Weaknesses: Investigating the Bases of Temporary Competitive Advantage," *Strategic Management Journal*, 31(13), 1386-1409.
- Sørensen, J. B., and T. E. Stuart (2000). "Aging, Obsolescence, and Organizational Innovation," *Administrative Science Quarterly*, 45(1), 81-112.
- Spector, P. E., and M. T. Brannick (2011). "Methodological urban legends: The misuse of statistical control variables," *Organizational Research Methods*, 14(2), 287-305.
- Tiwana, A., and E. R. Mclean (2005). "Expertise integration and creativity in information systems development," *Journal of Management Information Systems*, 22(1), 13-43.
- Uhlener, L. M., F. W. Kellermanns, K. A. Eddleston, and F. Hoy (2010). "The Entrepreneurial Family: a New Paradigm for Family Business Research," *Small Business Economics*, 38(1), 1-11.

- Carney, M., E. R. Gedajlovic, P. P. Heugens, M. Van Essen, and J. H. Van Oosterhout (2011). "Business group affiliation, performance, context, and strategy: A meta-analysis," *Academy of Management Journal*, 54(3), 437-460.
- Westhead, P., and C. Howorth (2007). "'Types' of Private Family Firms: an Exploratory Conceptual and Empirical Analysis," *Entrepreneurship & Regional Development: An International Journal*, 19(5), 405-431.
- Wiklund, J., and D. Shepherd (2003). "Knowledge-Based Resources, Entrepreneurial Orientation, and the Performance of Small and Medium-Sized Businesses," *Strategic Management Journal*, 24(13), 1307-1314.
- Wooldridge, J. M. (2009). *Introductory Econometrics: a Modern Approach*. Mason, OH: Cengage Learning.
- Zahra, S. A. (2005). "Entrepreneurial Risk Taking in Family Firms," *Family Business Review*, 18(1), 23-40.
- Zahra, S. A., and W. C. Bogner (2000). "Technology Strategy and Software New Ventures' Performance: Exploring the Moderating Effect of the Competitive Environment," *Journal of Business Venturing*, 15(2), 135-173.
- Zahra, S. A., J. Hayton, and C. Salvato (2004). "Entrepreneurship in Family vs. Non-Family Firms: A Resource-Based Analysis of the Effect of Organizational Culture," *Entrepreneurship Theory and Practice*, 28(4), 363-382.
- Zahra, S. A., D. O. Neubaum, and B. Larraneta (2007). "Knowledge Sharing and Technological Capabilities: the Moderating Role of Family Involvement," *Journal of Business Research*, 60(10), 1070-1079.
- Zahra, S. A., and A. P. Nielsen (2002). "Sources of Capabilities, Integration and Technology Commercialization," *Strategic Management Journal*, 23(5), 377-398.
- Zellweger, T. M., K. A. Eddleston, and F. W. Kellermanns (2010). "Exploring the Concept of Familiness: Introducing Family Firm Identity," *Journal of Family Business Strategy*, 1(1), 54-63.
- Zellweger, T. M., R. S. Nason, and M. Nordqvist (2012). "From Longevity of Firms to Transgenerational Entrepreneurship of Families Introducing Family Entrepreneurial Orientation," *Family Business Review*, 25(2), 136-155.



**Table 1. Descriptive Statistics and Correlations\***

		Mean	SD	1	2	3	4	5	6	7	8
1	Performance	3,92	0,56	1,00							
2	% Family Members on TMT	0,75	0,31	0,10	1,00						
3	Dynamism	3,27	0,72	0,08	0,08	1,00					
4	Age	46,27	39,38	-0,04	-0,05	-0,06	1,00				
5	Size	92,33	738,39	-0,07	-0,12	-0,17	0,08	1,00			
6	R&D Investments	3,69	0,82	0,30	-0,10	0,12	-0,10	-0,03	1,00		
7	Participative Strategy	3,84	0,60	0,62	0,04	0,05	0,05	-0,03	0,22	1,00	
8	Knowledge Diversity	3,88	0,61	0,41	-0,04	0,14	-0,08	-0,04	0,82	0,29	1,00
9	Electronics/informatics	0,04	0,20	-0,24	0,06	0,10	-0,10	-0,02	-0,11	-0,01	-0,13
10	Trade	0,25	0,43	-0,03	-0,01	0,08	0,18	-0,05	-0,01	0,01	-0,04
11	Construction	0,14	0,35	0,05	0,08	0,00	0,12	-0,04	-0,02	-0,04	0,04
12	Manufacturing	0,20	0,40	-0,09	-0,13	-0,11	0,15	-0,03	0,08	-0,03	0,06
13	Transportation/communication	0,03	0,17	0,06	0,06	0,02	0,03	-0,01	0,03	0,07	0,04
14	Finance	0,02	0,12	0,20	0,03	-0,03	-0,06	-0,01	-0,05	0,06	-0,04
15	Services	0,21	0,41	0,06	-0,04	0,01	-0,23	0,16	0,00	0,01	-0,01
16	Others	0,09	0,29	0,10	0,02	0,00	-0,13	-0,03	0,03	0,07	0,06
17	Two or more family members	0,47	0,50	0,01	0,08	-0,10	0,16	-0,04	0,05	0,07	0,05
		<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	
9	Electronics/informatics	1,00									
10	Trade	-0,12	1,00								
11	Construction	-0,08	-0,23	1,00							
12	Manufacturing	-0,10	-0,28	-0,20	1,00						
13	Transportation/communication	-0,04	-0,10	-0,07	-0,09	1,00					
14	Finance	-0,03	-0,07	-0,05	-0,06	-0,02	1,00				
15	Services	-0,11	-0,30	-0,21	-0,26	-0,09	-0,06	1,00			
16	Others	-0,06	-0,18	-0,13	-0,16	-0,06	-0,04	-0,16	1,00		
17	Two or more family members	-0,04	-0,02	0,14	0,12	0,07	-0,12	-0,14	-0,08	1,00	

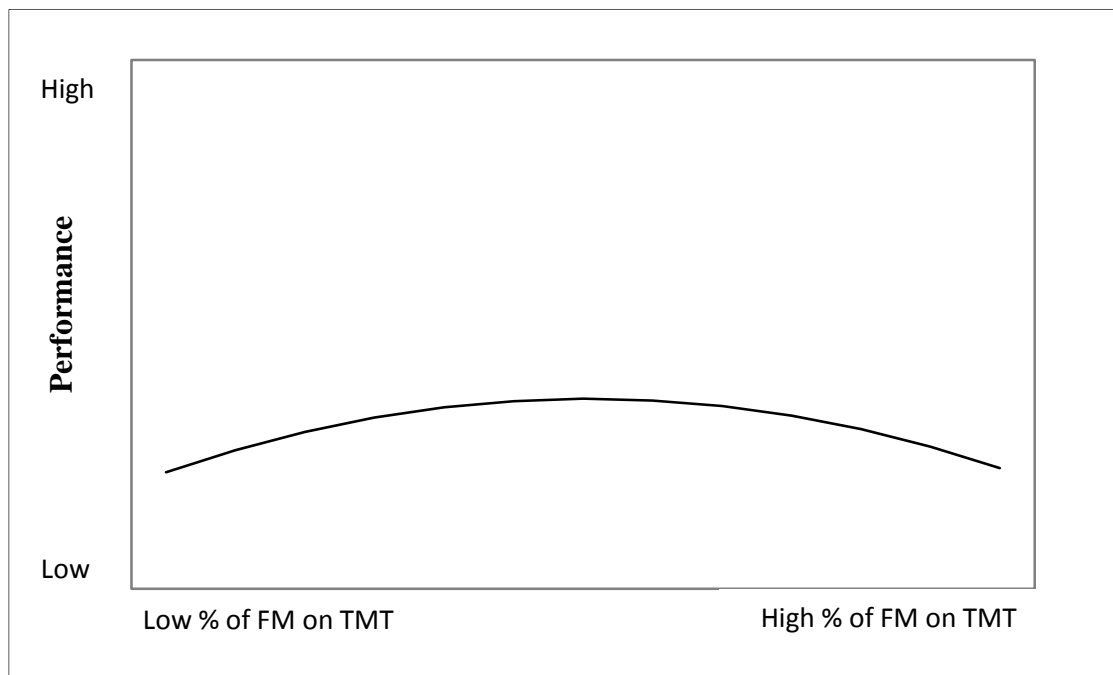
N = 199; Correlations with values of |.14| or greater are significant at  $p < 0.05$ . In this table we report the values of performance and size without transformations.

**Table 2. Results of Regression on Performance**

	Model 1	Model 2	Model 3	Model 4	Model 5
Age	-0.059	-0.054	-0.054	-0.048	-0.045
Size	0.067	0.081	0.092	0.080	0.106+
R&D Investments	-0.036	-0.018	-0.015	-0.017	-0.019
Participative Strategy	0.518***	0.514***	0.516***	0.510***	0.482***
Knowledge Diversity	0.259**	0.246**	0.239*	0.250**	0.260**
Electronics/informatics	-0.182*	-0.186*	-0.181*	-0.191*	-0.187*
Trade	-0.045	-0.042	-0.041	-0.043	-0.018
Construction	0.020	0.018	0.021	0.026	0.038
Manufacturing	-0.111	-0.097	-0.103	-0.103	-0.101
Transportation and communication	0.004	-0.000	-0.003	-0.004	-0.009
Finance	0.190**	0.190**	0.188**	0.190**	0.195**
Services	0.030	0.038	0.043	0.047	0.059
Others	0.022	0.025	0.032	0.035	0.056
Two or more family members	-0.021	-0.031	-0.044	-0.042	-0.059
% Family Members on TMT (fmTMT)		0.094+	0.547*	0.200	2.935*
Dynamism		0.022	0.031	-0.123	0.289
fmTMT <sup>2</sup>			-0.461+	-0.411	-3.197*
fmTMT x Dynamism				0.351	-2.765+
fmTMT <sup>2</sup> x Dynamism					2.993*
$R^2$	0.51	0.51	0.52	0.53	0.54
Adjusted R2	0.47	0.47	0.48	0.48	0.49
F statistic	13.70***	12.29***	11.86***	11.32***	11.16***

N = 199; + p < .10; \* p < .05; \*\* p < .01; \*\*\* p < .001

**Figure 1**  
**Inverted U-Shaped Relationship Between the Percentage of Family Members on the Top Management Team and Family Firm Performance**



**Figure 2**  
**The Curvilinear Relationship Between the Percentage of Family Members on the Top Management Team and Family Firm Performance for Low and High Levels of Environmental Dynamism**

