

8-9-2019

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Two essays on diversification behavior in family firms

By  
TITLE PAGE  
Youyi Su

A Dissertation  
Submitted to the Faculty of  
Mississippi State University  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy  
in Management  
in the Department of Management and Information Systems

Mississippi State, Mississippi

August 2019

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2019

Two essays on diversification behavior in family firms

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## ABSTRACT

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Title of Study: Two essays on diversification behavior in family firms

Pages in Study 228

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Prior research shows that family firms are generally less likely to diversify, but it remains unclear which mode of diversification in terms of internal versus external diversification family firms are more likely to choose once they decide to diversify. Similarly, it is unclear which type of diversification in terms of product versus international diversification family firms are more likely to focus on in comparison to nonfamily firms. Based on insights drawn from the goals, governance, and resources framework, this dissertation investigates the modes/types of diversification in family and nonfamily firms, as well as among various types of family firms. Specifically, I propose that family firms will prefer internal to external diversification to a larger extent than nonfamily firms. I further propose the strength of preference for internal to external diversification is likely to vary among different types of family firms manifested in the level of family ownership, family participation in the top management team and board, and generation of family members owning and controlling the family firm. Likewise, I theorize that family firms would prefer product to international diversification to a larger extent than nonfamily firms and that the strength of preference for product diversification is likely to vary among different types of family firms. A sample of 573 firms drawn

from the S&P 1500 index was used to examine the difference between family and nonfamily firms, and 136 family firms to test the heterogeneity hypotheses. No significant differences were found between family and nonfamily firms in their relative choice on internal over external diversification (Essay 1) and product over international diversification (Essay 2). Consistent with my prediction, I found *family representation in the top management team* has a significantly positive effect on a firm's tendency to engage in product rather than international diversification. However, in both Essay 1 and Essay 2, I did not find significant effects of the other heterogeneous variables on a family firm's tendency to engage in one mode/type of diversification over the other. A rationale for these non-significant relationships is provided. Contributions and implications of this study are also discussed.

## ACKNOWLEDGEMENTS

The completion of my dissertation concludes the four years of wonderful life at the Mississippi State University in Starkville, Mississippi. The completion of Ph.D. program and dissertation wouldn't be possible without the support and help of too many people. I owe a debt of gratitude to every single one of them.

First of all, I would like to give special thanks to my dissertation chair Dr. James J. Chrisman for being an incredible mentor. Dr. Chrisman, thank you for your patience, persistence and trust in me that greatly motivated me to progress in the Ph.D. program and finish my dissertation on time. Thank you for reading my long manuscripts and providing me with prompt and constructive feedback. Thank you for giving me the time and opportunities to make mistakes and then learn from them. Your hard-working spirit is a great inspiration to many of us.

I would also like to give special thanks to Dr. Daniel Holt. Dr. Holt, thank you for always encouraging me to think outside the box. It has been my great pleasure to work with you as a graduate assistant throughout the program. I have learned so much from you. I also thank Dr. Laura Marler. Dr. Marler, thank you for always being willing to share your knowledge with us. Thank you for cultivating a supportive environment for the Ph.D. students to thrive in the program. I would also like to express my gratitude to my other dissertation committee members including Dr. Kulraj Singh and Dr. Adam

Farmer for your constant encouragement and constructive feedback that help me to improve my dissertation substantially.

Special thanks are also given to other wonderful faculty members in the Department of Management and Information Systems (MIS) for their kind support and encouragement. I am especially grateful to Dr. Josh Daspit (now with Texas State University) for your kindness and support during my Ph.D. program. Josh, thank you for your generous sharing of teaching materials with me and guiding me through the first few semesters of teaching Business Policy (BUS 4853).

I am also thankful to my fellow Ph.D. students in the MIS and Finance and Economics departments. I am blessed to have these amazing friends around to support each other along the Ph.D. journey. I would like to give special thanks to my good friend Dr. Hangqing (Chevy) Fang (Missouri University of Science and Technology) for your generous sharing and answering many tedious questions during my data analysis process.

I would also like to thank Ms. Nadine Rosinski and Angella Baker for the administrative work and support so that I can focus on my research and teaching. I would also like to give thanks to Ms. L for providing us with a clean office environment to help make our work more productive.

Special thanks are also given to my family in China for their unconditional love. Last but not least, I give thanks to Lord Jesus for molding me into who I am today and guiding me through every step of my Ph.D. life. Without Him, none of the above would be possible. “And we know that in all things God works for the good of those who love him, who have been called according to His purpose.” (Romans 8:28)



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## CHAPTER I

### INTRODUCTION

Family firms represent the most prevalent form of business organization around the world (Chang, Chrisman, Chua, & Kellermanns, 2008; Villalonga, Amit, Trujillo, & Guzmán, 2015). Studies show that family firms account for over 33% of large publicly listed US firms (Anderson & Reeb, 2003) and the ownership structures of large corporations in 27 wealthy countries are typically controlled by families. These statistics highlight the prevalence of large-scale family firms in the world and indicate that like nonfamily firms, family firms seek to expand the scope of their activities through corporate diversification.

However, prior research has shown that family firms usually invest less in diversification (e.g., Chrisman & Patel, 2012; Gomez-Mejia et al. 2010). For example, Chrisman and Patel (2012) found that family firms invest less in R&D, or internal development, in comparison to nonfamily firm. Miller and colleagues (2010) also found family firms are less likely to engage in external acquisition activities. In addition, family firms are found to have lower levels of product diversification (Gomez-Mejia et al., 2010) and international diversification (Fang, Memili, Chrisman, & De Massis, 2018). As the statistics above highlight, large-scale family firms are prevalent around the world and that family firms do, indeed, engage in diversification albeit at a potentially lesser scale, although they are more reluctant to do so than nonfamily firms.

However, a question remaining in the extant literature is *how* family firms diversify once they decide to do so. Family business researchers have recognized that the nature of the goals followed (Chrisman, Chua et al., 2012), the governance system enacted (Carney, 2005), and the resources available through family involvement (Habbershon & Williams, 1999) appear to lead to differences in behaviors between family and nonfamily firms, as well as among various types of family firms. Thus, based on the insights drawn from the goals, governance, and resources framework, this dissertation investigates *how* the modes of diversification (internal versus external diversification) and dimensions of diversification (product versus international diversification) differ in family and nonfamily firms, as well as among various types of family firms. Specifically, I theorize that family firms will exhibit a stronger preference for internal to external diversification than nonfamily firms in Essay 1 and family firms have a stronger preference for product to international diversification than nonfamily firms in Essay 2.

Research further suggests that family firms are largely a heterogeneous group (Chrisman, Chua, Pearson, & Barnett, 2012; Chua, Chrisman, Steier, & Rau, 2012). An important source of heterogeneity of family firms arise from family involvement in governance through their ownership, management, and board participation (Chrisman, Chua, & Sharma, 2005; Chrisman & Holt, 2016), and heterogeneity in governance is likely to be associated with differences in goals and resource configurations (Chua et al., 2012). I therefore further theorize and test that the strength of preference for internal diversification to external diversification (Essay 1) and the strength of product to international diversification (Essay 2) will vary among different types of family firms



represented by the level of family ownership in the firm, the presence of a family CEO, the representation of family executives in the TMT, the presence of a family board chair, the representation of family directors on the board, and the presence of the founding generation family members in the firm.

An empirical analysis of 573 manufacturing firms drawn from the S&P 1500 index for the fiscal years 1998 to 2017 shows no significant differences between family and nonfamily firms in their relative emphasis on internal and external diversification. Likewise, no differences were found among various types of family firms. These results provide no empirical support for the theoretical model proposed in Essay 1. In Essay 2, I did not find significant difference between family and nonfamily firms in their relative emphasis on product versus international diversification. Consistent with my prediction, *family representation in the top management team* (H11) was found to have a significantly positive effect on a firm's tendency to engage in product rather than international diversification. This finding is robust across different tests. A rationale for the non-significant relationships in Essay 1 and Essay 2 is provided.

This dissertation makes several important contributions to the family business and diversification literatures. First, this dissertation extends our knowledge of diversification behavior in family firms. By investigating *how* family firms diversify in terms of modes and types of diversification, this dissertation enhances our knowledge of a firm's diversification behavior. Second, our knowledge of the variance among family firms regarding their propensity towards modes/types of diversification remains limited. By investigating diversification preference among various types of family firms, this dissertation contributes to our knowledge of heterogeneity across family firms. Third, by

introducing the roles of goals, governance, and resources of the dominant coalition in affecting a firm's diversification, specifically in family firms, this dissertation helps provide a finer-grained understanding of the antecedents of a firm's diversification.

The remainder of this dissertation is organized as follows. The following two sections provide detailed accounts of Essay 1 and Essay 2. This dissertation ends with a conclusion chapter summarizing the important results and implications.

## CHAPTER II

### ESSAY 1: AN INVESTIGATION OF DIVERSIFICATION MODES IN FAMILY FIRMS

#### Introduction

Family firms are the most prevalent form of business organization in the world (Chang, Chrisman, Chua, & Kellermanns, 2008; Daspit, Chrisman, Sharma, Pearson, & Long, 2017; La Porta, López de Silanes, & Shleifer, 1999)<sup>1</sup>. It is estimated that family firms represent over 33% of large publicly listed US firms (Anderson & Reeb, 2003b; Villalonga & Amit, 2006) and about 90% of all businesses in the US economy, including privately held firms (Astrachan & Shanker, 2003; Villalonga, Amit, Trujillo, & Guzman, 2015). Corporate diversification decisions, i.e., decisions on the entry into new lines of activity, are of key importance to a firm's new business development strategy. An entrant firm is concerned not only about what markets to enter but also about how to enter them. Internal direct development and external acquisition represent two vehicles of corporate diversification<sup>2</sup>. An established firm can enter a new product market internally through investments in R&D or externally by acquiring an existing entity or both.

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<sup>1</sup> In this essay, family firms are defined by a family's involvement in a firm, which allows it to pursue family-centered goals as well as utilize family-based resources in its strategic initiatives (Bennedsen et al., 2010; Chua et al., 1999).

<sup>2</sup> I recognize that a mix of entry modes such as joint ventures is also possible (Lamont & Anderson, 1985). However, firms are more likely to utilize internal direct development or acquisition for domestic market entries, although joint ventures are common for entries into foreign markets (Lee & Lieberman, 2010).

Family business studies show that family firms usually invest less in R&D than nonfamily firms (e.g., Chen & Hsu, 2009; Chrisman & Patel, 2012; De Massis, Frattini, & Lichtenthaler, 2013; Patel & Chrisman, 2014). Likewise, family firms are found to be less likely to engage in acquisition activities (e.g., Gomez-Mejia, Patel, & Zellweger, 2015; Miller, Le Breton-Miller, & Lester, 2010). However, this does not mean family firms do not make such investments but it may mean they are more reluctant in the investments they make. Given the prevalence of family firms, especially the existence of large-scale family firms (Miller & Le Breton-Miller 2005), our knowledge related to how family firms grow and diversify with respect to internal versus external diversification remains limited. It seems reasonable that we need to not only understand the levels of diversification in family firms but also how they diversify. In particular, we need to understand the conditions that may lead family firms to pursue one diversification mode over the other.

Thus, the purpose of this essay is to investigate family firms' choice of entry mode for diversification in terms of internal development from R&D investments and external acquisitions<sup>3</sup>. Specifically, I address the following two questions: *how do the goals, governance, and resources of family firms affect their choice of entry mode in comparison to nonfamily firms? How do different goals, governance systems, and idiosyncratic resources among family firms affect the choice of entry mode?* Based on the literature that family firms are distinct from nonfamily firms with regard to the importance attached to the pursuit of noneconomic goals, idiosyncratic resources, and

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<sup>3</sup> It is important to note that the focus of this essay is to look at the relative preference for these two modes of diversification (i.e., internal diversification and external diversification) in family and nonfamily firms, as well as among various types of family firms.

unique governance systems (Chrisman, Sharma, Steier, & Chua, 2013), I theorize that family firms will exhibit a stronger preference for internal diversification to external diversification in comparison to nonfamily firms. However, family firms are not a homogeneous group (Chrisman, Chua, Pearson, & Barnett, 2012; Chua, Chrisman, Steier, & Rau, 2012). An important source of heterogeneity of family firms arises from family involvement in governance through their ownership, management, and board participation (Arregle, Naldi, Nordqvist, & Hitt, 2012; Chrisman, Chua, & Sharma, 2005; Chrisman & Holt, 2016; Chrisman et al., 2013), and heterogeneity in governance is likely to be associated with differences in goals and resource configurations (Chua et al., 2012). I therefore further theorize and test that the strength of preference for internal diversification to external diversification will vary among different types of family firms.

This study makes several important theoretical contributions to the literature, primarily to the family business literature. First, while prior research shows that family firms differ from nonfamily firms in the level of diversification (Anderson & Reeb, 2003a; Gomez-Mejia, Makri, & Kintana, 2010), the question regarding how family firms diversify in terms of internal versus external remains unanswered. By studying entry modes in family firms as well as various types of family firms, this study enhances our knowledge of diversification in general and diversification modes in particular in family firms. Moreover, there is a growing body of research that investigates R&D investments (e.g., Chrisman & Patel, 2012; De Massis et al., 2013) and corporate acquisitions (e.g., Miller et al., 2010; Gomez-Mejia et al., 2015) in family firms. However, most of these studies investigate these two entry modes independently. The present study represents the first attempt to investigate internal and external diversification simultaneously in family

firms, thus providing a more comprehensive understanding of how family firms diversify and grow.

Second, while diversification is one of the most studied topics in the strategic management literature (Ahuja & Novelli, 2017; Hoskisson & Hitt, 1990; Wan, Hoskisson, Short, & Yiu, 2011), the effects of behavioral motives of the dominant coalition on a firm's diversification has not been adequately investigated, with most of the studies focusing on the amount of diversification (e.g., Anderson et al., 2003a; Gomez-Mejia et al., 2010). By introducing the roles of the goals, governance, and resources of the dominant coalition in affecting a firm's choice of entry mode, specifically in family firms, as a key explanatory variable in understanding an entrant's choice of mode, this study helps provide a finer-grained understanding of the antecedents of a diversifying firm's mode of entry.

Third, I find that there is no significant difference between family and nonfamily firms in their relative emphasis on internal over external diversification. Likewise, no significant differences have been shown among various types of family firms in terms of their relative emphasis on these two modes of diversification. These insignificant findings highlight that the combined influence of goals, governance systems, and idiosyncratic resources on a family firm's behavior is more complicated than we expected. Future research can further examine how goals, governance, and resources are interrelated to one another and how such interrelationships affect a family firm's diversification behavior.

### **Theoretical Background and Hypotheses**

The literature on diversification can be traced back to the pioneering works of Chandler (1962), Ansoff (1965), and Rumelt (1974), who established the motivations for

diversification and the general nature of the diversified firms. Since then, diversification remains one of the most explored topics in the literature (e.g., Ahuja et al., 2017; Alessandri & Seth, 2014; Anjos & Fracassi, 2015; Arikian & Stulz, 2016; Busija, O'Neill, & Zeithaml, 1997; Chen, 1996; Hofer & Chrisman, 1989; Hoskisson et al., 1990; Wan et al., 2011; Wiersema & Bowen, 2008). Within the diversification literature, there is a major body of research investigating how the entry is made for a diversifying firm (e.g., Lee & Lieberman, 2010; Lieberman, Lee & Folta, 2016; Sharma, 1998; Speckbacher, Neumann & Hoffmann, 2015; Yip, 1982). Entry mode can be defined as a decision on the means of accessing a new market or the investment of resources in a new target market. (Chatterjee, 1990; Lee et al., 2010; Speckbacher et al., 2015). Internal direct development and external acquisition are two alternatives firms can use to access a new market. Internal entry mode is a firm's decision to expand the scope of its business into new lines of activity and grow organically through internal development, whereas external entry mode is a firm's decision to enter new markets by acquiring a firm or business unit that is already established (Lee et al., 2010).

Prior literature has identified various factors that help entrant firms choose the mode of entry (e.g., Bigelow & Argyres, 2008; Jacobides & Hitt, 2005; Leiblein & Miller, 2003; Qian, Agarwal, & Hoetker, 2012). For example, from a knowledge perspective, previous studies have shown that mode of entry is determined by the focal firm's efficiency in transferring knowledge relative to other firms and the attributes of the knowledge to be transferred (Kogut & Zander, 1993; Speckbacher et al., 2015). Specifically, prior studies show that the higher the transferability of an established firm's resources to the new business segment, the more likely a firm will choose internal

development (Speckbacher et al., 2015). High transferability of existing resources provides the firm with immediate opportunities to build up and accumulate the required resources internally and can thus significantly reduce the costs and risks of entry (Qian et al., 2012; Speckbacher et al., 2015). Conversely, if the transferability of a firm's resources is low, it will become more advantageous to acquire resources in the market via acquisition.

Similarly, a firm's mode of entry into the new market can also be predicted by the availability of the firm's human capital (Beaumont, Hebert, & Lyonnet, 2017). Beaumont et al. (2017) show that firms are more likely to enter a new market externally if, prior to entry, their human capital is not adapted to operate in the new business segment.

Moreover, their study shows that the link between human capital and diversification mode is more pronounced for larger firms, for which acquisitions represent a presumably more affordable alternative (Beaumont et al., 2017). This literature suggests that firms diversify externally in order to acquire human capital, whereas firms diversify internally because they have the ability to redeploy preexisting human capital in the new business segment. These studies highlight the relevance and importance of a firm's initial bundle of resources and capabilities in affecting a firm's choice of entry mode (Jacobides et al., 2005; Qian et al., 2012).

Further, from a resource-based view, research has suggested when the required resources to enter a target market are highly related to the firm's existing set of resources and capabilities, the firm would favor direct entry through internal development (Busija et al., 1997; Lee et al., 2010; Penrose, 1959; Qian et al., 2012). This is because internal development enables the entering firm to leverage existing resources into the new



business and allow the firm to exploit their organizational and technical expertise (Chatterjee & Singh, 1999; Hill, Hitt, & Hoskisson, 1992; Speckbacher et al., 2015). On the other hand, acquisitions allow the firm to extend its resource base and offer the opportunities to acquire complementary resources and capabilities in the context of a new business area (Capron & Mitchell, 2009; Hagedoorn & Duysters, 2002; Karim & Mitchell, 2000; Kaul, 2012; Lee et al., 2010). In other words, an acquisition would give the firm access to proven resources in a new and unfamiliar area where its own ability to develop these resources may be uncertain (Hennart & Reddy, 1997). For example, Lee and Lieberman (2010) show that inside a firm's primary business domain, acquisitions are used to fill persistent gaps near the firm's existing products, whereas, outside that domain, acquisitions are used to extend the enterprise in new directions. Thus, acquisitions are argued to be particularly valuable for a firm looking to exploit its technological innovation in an unfamiliar market (Capron, 1999; Capron, Dussauge, & Mitchell, 1998).

Lastly, the literature on international entry mode choice also sheds some light on factors determining a firm's choice of entry, specifically to a foreign market (Brouthers & Brouthers, 2000; Harzing, 2002; Martin, 2013; Slangen & Hennart, 2007). For example, prior research suggests that internal uncertainty that occurs when a firm cannot accurately assess its agents' performance by objective, readily available output measures (Anderson & Gatignon, 1986; Meyer, Estrin, Bhaumik, & Peng, 2009) is an important factor determining a firm's choice of entry mode. When the level of internal uncertainty is high, firms need to impose subjective judgment to monitor behavior (Meyer et al., 2009). In this case, external acquisitions may make it more challenging to develop goal congruence

and loyalty in the acquired firm. As such, firms may prefer direct Greenfield entry to acquisition entry when the level of internal uncertainty is high.

### **Relative Advantages and Disadvantages of These Two Entry Modes**

Acquisition and internal development are likely to differ from one another in terms of costs, speed, and risks of entry (Clarysse, Bruneel, & Wright, 2011; Lee et al., 2010). Acquisitions usually require payments of a significant financial premium. At the same time, acquisitions incur non-trivial costs of integrating the acquired firm with the acquiring company (Haspeslagh & Jemison, 1991; Kim, Halebian, & Finkelstein, 2011; Lakshman, 2011; Sharma, 1998). Post-acquisition integration is considered a complicated process, which involves the integration of culture and strategy between the acquiring and acquired firms (Ellis, Reus, & Lamont, 2009; Lakshman, 2011). Indeed, most acquisitions fail to create synergy through integration (Birkinshaw, Bresman, & Hakanson, 2000). While internal development usually does not have to bear the costs of integrating an acquired firm into the acquiring firm's corporate structure and systems, internal development may also face high development costs (Teng, 2007), which can be related to experiments with new technological opportunities inside the firm.

Internal development and acquisition also differ in the speed of entry. Most acquisitions are consummated relatively quickly (Capron et al., 2009; Pettus, Kor, Mahoney, & Michael, 2017), whereas internal development normally takes a relatively long period of time which can be many months or years (Lee et al., 2010). When speed is important, acquisitions are more likely to be used as the entry mode for quick growth (Clarysse et al., 2011; Kaul, 2012; Kim et al., 2011; Lee et al., 2010). Research drawn from multinational enterprises entering foreign countries suggests that firms will use

acquisitions when they need to make speedy entry (Hennart, 2009; Slangen et al., 2007). For example, studies of firms in the computing and communication industry show that firms would acquire other firms in order to gain access to their streams of innovative activity more quickly (Helfat & Lieberman, 2002).

Both acquisition and internal development carry risks. Acquisitive entry involves a large one-time investment. While it is possible that firms make ‘toe-hold’ acquisitions to evaluate the potential of a new product-market and then make full commitment if the opportunity looks promising, it usually entails great risk when a firm makes an acquisition of another ongoing entity, whether small or large, because the acquiring firm invests in all aspects of business operations up front. The possibility of overpaying is also high because of the asymmetry of information regarding the true value of the target firm. The seller usually has better knowledge about the target firm than the buyer does, thus increasing the possibility of purchasing a firm with serious but previously unknown problems (i.e., a lemon) (Akerlof, 1970).

On the other hand, while internal development usually involves periodic incremental investments by the parent firm and provides a firm with the opportunity before fully committing itself to test its capabilities against those of competition (Sharma, 1998), internal development also entails great risk (Verbeke, Chrisman, & Yuan, 2007). The process whereby firms engage in diversification through internal development is also known as corporate entrepreneurship (CE, Burgelman, 1983; Covin & Slevin, 1991; Sharma & Chrisman, 1999). Corporate entrepreneurship literature suggests that CE embodies renewal activities that enhance a corporation’s ability to compete and take risks (Phan, Wright, Ucbasaran, & Tan, 2009; Zahra, Filatotchev, & Wright, 2009). Thus, risk-

taking is an important attribute of corporate entrepreneurship or internal diversification (Lumpkin & Dess, 1996; Srivastava & Lee, 2005).

Specifically, based on the literature that entrepreneurship is defined as “carrying out new combinations” (Schumpeter, 1934: 66), CE requires changes in the pattern of resource deployment and the infusion of resources and new knowledge into the firm’s operations (Guth & Ginsberg, 1990; Zahra et al., 2009). CE is also considered the result of the interlocking entrepreneurial activities of multiple participants (Burgelman, 1983). Thus, the risk associated with CE, specifically, the risk in developing new products, technologies, and capabilities, is usually high (Kelley, Peters, & O’Connor, 2009; Teng, 2007). This suggests internal diversification in the form of developing new technologies and new ways of doing business and entering new markets in new organizational forms carries great risk (Shepherd, Covin, & Kuratko, 2009; Zahra, 1995).

While both internal diversification and external diversification entail great risks for the firm, the potential to manage the downside risks of internal diversification would be greater than those of external diversification. As mentioned earlier, external diversification involves a large one-time investment, whereas internal development involves periodic incremental investments. Relative to an acquired entity, the internal business is usually a great deal more compatible with the firm in terms of systems, culture, and procedures (Sharma, 1998). It is plausible that internally developed businesses would be more likely than acquired businesses to be able to leverage the resources of the parent firm into the entered industry. Managers leading the internal business are likely to be more effective in drawing upon relevant resources because they are likely to have connections through work and social networks with their counterparts

in other operating divisions of the firm (Sharma, 1998). This is in contrast to the difficulty associated with the post-acquisition integration process due to lack of history between managers of the acquired business and those of the parent firm. Moreover, operations of acquired businesses usually are disrupted as the new parent firm tries to integrate them within the corporate context. Therefore, it is reasonable to assume that it is more difficult to manage the downside risks of external acquisitive entry, as is manifested in the high odds of failure of acquisitions (King, Dalton, Daily, & Covin, 2004).

In sum, internal diversification and external diversification are likely to differ from one another in the aspects of costs, speed, and risks of entry. The characteristics of internal diversification and external diversification are captured and shown in Table 1.

While in choosing between these two modes of entry, a firm must consider their relative advantages and disadvantages with respect to costs, speed, and risks of entry, the roles of goals, governance, and resources of the dominant coalition in affecting a firm's choice of entry mode, specifically in family firms, also need to be considered. Recent advancement in the field of family firms has highlighted the importance of the combination of goals, governance, and resources in influencing a family firm's strategic behavior and outcomes (Chrisman et al., 2016; Chrisman et al., 2013; Daspit et al., 2017). Goals, governance, and resources are regarded as the three pillars that capture the nature of family firms and the essence of family influence on a firm's behaviors and strategies (Chrisman et al., 2013).

## The Goals, Governance, and Resources Framework

### *Goals*

The importance of goals including economic and noneconomic goals in affecting a firm's strategies and behaviors has long been emphasized in the behavioral theory of the firm (Cyert & March, 1963). According to the behavioral theory of the firm, firms have economic goals as well as a variety of noneconomic ones that are reflected in the behaviors and strategies of the firm (Argote & Greve, 2007; Cyert et al., 1963). In family firms where the dominant coalition is controlled by family members, it seems likely that noneconomic goals related to the family would be especially important (Chrisman, Chua, & Sharma, 2005; Westhead & Howorth, 2007). Indeed, a greater emphasis on noneconomic goals is argued to be an important characteristic that differentiates family from nonfamily firms (Chrisman, Chua, et al., 2012; Chrisman, Chua, & Sharma, 2005; Debicki, Kellermanns, Chrisman, Pearson, & Spencer, 2016). Noneconomic goals may include goals related to maintaining family control over the firm (Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson, & Moyano-Fuentes, 2007), perpetuation of the family dynasty and legacy (Casson, 1999; Chrisman, Chua et al., 2012; Daspit, Holt, Chrisman, & Long, 2016; Hammond, Pearson, & Holt, 2016), providing jobs for family members (Chrisman, Memili, & Misra, 2014), and maintaining the family's identity and reputation (Zellweger, Kellermanns, Chrisman, & Chua, 2012), among others. Berrone and colleagues (2012: 259) coin these unique noneconomic goals as the FIBER model, which stands for *Family control and influence, Identification of family members with the firm, Binding social ties, Emotional attachment of family members, and Renewal of family bonds to the firm through dynastic succession*. These noneconomic goals will guide family firms' decision-

making that may satisfy the preferences of the dominant controlling family (Chrisman, Kellermanns, Chan, & Liano, 2010; Chua, Chrisman, & Sharma, 1999).

There is a growing number of studies in the family business literature that recognize differences between family and nonfamily firms and among various types of family firms due to the presence of family-centered noneconomic goals of the owning families (Chrisman, Chua et al., 2012; Gomez-Mejia et al., 2007; 2010). Family firms are argued to favor strategies that can help achieve these goals (Chrisman, Chua et al., 2012) and be averse to strategies that may potentially hinder the achievement of these goals (Gomez-Mejia et al., 2007). For example, Gomez-Mejia et al. (2007) show that family firms are willing to risk financial losses and bear a greater probability of failure in order to maintain family control of the firm.

While there may be a number of goals that can be related to a family firm's choice of entry mode, two goals are especially important, including goals related to exercising family control and maintaining the family's identity and reputation. Because of the intimate connection between the family and the business, the desire to maintain family control is an important goal in family firms' strategic decision-making (Chrisman, Chua et al., 2012; Gomez-Mejia et al., 2007). Moreover, family firm members are likely to view their business as an extension of their family (Dyer & Whetten, 2006), and they strive to create and maintain a strong family identity and reputation (Patel et al., 2014; Zellweger & Nason, 2008). The importance attached to the pursuit of these goals has important implications for our understanding of a family firm's preference for internal to external diversification in comparison to nonfamily firms.

The importance attached to the pursuit of noneconomic goals may also vary among different types of family firms. For example, family firms under the leadership of a family CEO are likely to have a stronger desire to maintain close family control of the firm than family firms led by a nonfamily CEO (Chrisman et al., 2014; Minichilli, Nordqvist, Corbetta, & Amore, 2014). Further, the goals of founding generation family owner-managers may differ from those of later generation family owners (Fang, Kotlar, Memili, Chrisman, & De Massis, 2018; Gomez-Mejia et al., 2007). Due to their strong personal attachment and commitment to the firm, founding family owners are argued to be more likely to pursue non-economic goals than later generation family owners (Fang et al., 2018). For example, prior research shows that economic goals associated with reducing business risk are found to hold greater sway when the family firm is under the control of later generation of family owners (Gomez-Mejia et al., 2007).

### ***Governance***

The family business literature suggests that the governance structure of family firms may be different from that of nonfamily firms (Carney, 2005). The distinctive governance system of family firms occurs because family members have controlling ownership and often hold prominent positions in the top management team (TMT) and/or the board of directors, which gives the family firm owners power and legitimacy to make rapid and particularistic decisions and favors the parsimonious use of resources (Carney, 2005). Personalized heuristics of top managers and directors will be used in the planning and strategic decisions of family firms (Fang, 2016; Gedajlovic, Lubatkin & Schulze, 2004). In addition, these dominant positions in corporate governance allow decision-makers to transmit their goals into strategic actions of the firm (Cyert et al., 1963; Fang,



2016; Tang, Crossan, & Rowe 2011). This suggests governance not only ensures decision-makers' goals influence the formulation of strategic decisions but also facilitates the spread of such a decision throughout the organization (Hofer & Schendel, 1978).

Specifically, Carney (2005) suggests —personalization, particularism, and parsimony, characterize the unique governance structure of family firms. The unification of ownership and control concentrates and incorporates organizational authority in the family. The concentrated family ownership provides the controlling family owners with the power and discretion to make decisions in idiosyncratic ways. Indeed, it is this personalization of authority in the family firm that allows the family to project its own vision onto the business (Chua et al., 1999). Particularism indicates that family firms view the firm as “our business” (Carney, 2005; Demsetz & Lehn, 1985). Thus, the extent to which family-centered goals can be transmitted into firm decision-making is dependent upon the power and legitimacy of the dominant coalition (Carney, 2005). Since family firms make decisions with the family's personal wealth, family firms have the tendency toward careful resource conservation and allocation (Carney, 2005). Indeed, family firms are argued to “possess a strong incentive to assure capital is deployed sparingly and used intensively and that indirect production costs are tightly managed” (Carney, 2005: 254). Parsimony is expected to determine the formulation of strategic choices in family firms (Carney, 2005). However, this would not suggest that having a personalized, particularized governance structure and making parsimonious use of resources automatically ensure certain strategic decisions. Decisions in family firms are made when the governance aligns with goals mentioned above.

Further, family firms may differ from one another in their governance structures, which may be reflected in the amount of family ownership, the level of family representation in the TMT and/or the board in the firm, the generation of family members owning and controlling the family firm. These different governance structures are likely to give these various family firms different levels of power and discretion to make decisions that are consistent with the goals of family owners. For example, the increased control through ownership can heighten both the legitimacy and importance of the family's pursuit of noneconomic goals (Carney, 2005; Zellweger et al., 2010).

### ***Resources***

Goals and governance also require resources if strategic intentions are to be successfully realized through the firm's actions (Hofer et al., 1978). Resources are the essential building block of a firm because a firm achieving above-normal returns will be a function of the strategy used to leverage those resources to pursue environmental opportunities (cf. Barney, 1996; Hofer et al., 1978; Chrisman, Chua, & Zahra, 2003). Family business literature suggests that the family's aspirations and values would be reflected in the resources managed and the opportunities pursued (Chrisman, Chua, & Zahra, 2003; Sirmon & Hitt, 2003). Family involvement may bring in distinctive resources unique to family firms (Chrisman, Chua, & Litz, 2003; Habbershon & Williams, 1999; Habbershon, Williams, & MacMillan, 2003; Sirmon et al., 2003). Such distinctive and synergistic bundles of resources created by the interaction of family and business was coined as "familiness" (Habbershon et al., 1999), which reflects the vision and intention constituting the essence of a family business (Chua et al., 1999; Habbershon et al., 2003; Pearson, Carr, & Shaw, 2008). Familiness is argued to

positively influence the use of resource enrichment processes that are intended to elaborate and recombine the firm's capabilities and resource stabilization processes which are activities designed to maintain the firm's current strategy (Carnes & Ireland, 2013). Family governance is also argued to have an advantage over nonfamily firm governance in the process of creating, accumulating, and managing resources (Sirmon et al., 2003). For example, prior research suggests that family firms are more efficient in transferring and orchestrating resources than nonfamily firms (Duran, Kammerlander, Van Essen, & Zellweger, 2016; Li, 2017). Specifically, Duran and colleagues (2016) argue that tacit knowledge among employees in family firms can facilitate the transfer of valuable knowledge and ideas across departments and thereby support resource orchestration within the firm.

Further, resource stocks may differ among different types of family firms. For example, family firms under the leadership of a family CEO are likely to have different bundles of resources from those under the leadership of a nonfamily CEO (Duran et al., 2016; Li, 2017). In comparison to nonfamily CEOs, family CEOs are expected to possess valuable individual-level human capital, particularly knowledge about the internal affairs of their firm because they have often started getting involved in the business as early as their childhood (Cabrera-Suarez, De Saa-Perez, & Garcia-Almeida, 2001). As such, family CEOs are argued to be more efficient in orchestrating and transferring resources due to their tacit knowledge and idiosyncratic managerial capabilities (Li, 2017).

### **Modes of Entry in Family and Nonfamily Diversifying Firms**

The fact that family firms have distinctive goals, in combination with the unique governance structure and idiosyncratic resources (Chrisman, Chua, et al., 2012; Chrisman

et al., 2013), suggests that the strength of the preference for internal to external entry may vary between family and nonfamily firms. Specifically, I propose that family-specific goals, governance, and idiosyncratic resources should impose an additional incentive that will strengthen the tendency to choose internal entry (vs. external entry) in family firms. Several reasons can support this line of argument.

First, prior literature suggests that an entry through internal diversification is likely to be more compatible with the parent firm in terms of culture, systems, and procedures than an entry through external diversification (Dierickx & Cool, 1989; Sharma, 1998). Since family firms are argued to have highly idiosyncratic assortment of resources (Chua et al., 2012; Habbershon et al., 1999; 2003; Sirmon et al., 2003), I argue that family firms will be particularly motivated to use internal diversification because their distinctive resources would make the compatibility with the parent firm extra difficult should diversification be conducted via the external mode. Indeed, the existence of highly specific human assets and knowledge that are developed over a long period of time (Le Breton-Miller & Miller, 2006; Sirmon et al., 2003) motivates family firms to use internal activities for governing their production and operations (Memili, Chrisman, & Chua, 2011). Moreover, as discussed earlier, high level of transferability of the existing resources also enables a firm to develop the required target segment resources internally (Speckbacher et al., 2015). Family business scholars suggest that high level of tacit knowledge among employees in family firms facilitates the transfer of ideas and resources across departments in the firm (Bammens, Notelaers, & Van Gils, 2015; Sirmon et al., 2003) and thereby supports more efficient resource orchestration within the family firm (Duran et al., 2016; Li, 2017). The high transferability of resources in family

firms also supports the argument that family firms will be more likely to rely on internal rather than external diversification in comparison to nonfamily firms.

Second, acquisitions often involve stock swaps, which can dilute the family ownership of the firm. On the other hand, internal development can provide a firm with continued control (Teng, 2007). Unlike nonfamily firms, family firms are often driven by the goal of maintaining family control of the firm (Berrone et al., 2012; Gomez-Mejia et al., 2007). This suggests that family firms would prefer internal to external diversification relative to nonfamily firms. Moreover, acquisition research has highlighted great uncertainty associated with the post-acquisition process (Homburg & Bucerius, 2006). Acquisitions involve organizational restructuring and changes in both the acquired and acquiring firms (Barkema & Schijven, 2008; Buono & Bowditch, 2003; Kim et al., 2011). Indeed, achieving the necessary level of organizational integration is a fundamental challenge after an acquisition (Datta, 1991; Zollo & Singh, 2004). Such challenges may arise from the retention of employees in the acquired firm (Cannella & Hambrick, 1993), knowledge transfer between the acquiring and acquired companies (Ranft, 1997), and the potential incompatibility of organizational routines between the acquired and acquiring firms (Chang & Rosenzweig, 2001). The poor performance of the acquiring and acquired firms after the acquisition is associated with the challenges of the post-acquisition integration (Ahuja et al., 2017). Based on the family business literature suggesting family firms are likely to avoid the reconfiguration of organizational structures (König, Kammerlander, & Enders, 2013) and exhibit a high level of similarity and persistency in strategy implementation (Fang, 2016), I expect that family firms may

show greater reluctance to use external acquisition to enter a new market due to the possibility of reconfiguring organizational structures after an acquisition.

Third, relative to acquisition, internal development provides stronger safeguards to protect the value of the existing resources and capabilities and thus prevent undesired resource leakage to external parties (Chi, 1994; Gulati & Singh, 1998). Empirical studies on the sources of R&D projects have shown that fear of capability leakage leads to a greater use of internal entry as a source of new skills development (Pisano, 1990). Family business literature suggests that family firms often have strong emotional ties to the existing resources within their firms and are likely to maintain intense, personal relationships within their organizations and with other actors in the environment (Berrone et al., 2012; Chrisman, Chua, & Kellermanns, 2009). I argue that these rich “community” and “connections” resources (Miller et al., 2005) will serve as extra incentives for family firms to choose internal entry, which can help to achieve the goal of safeguarding the value of the existing resources and keeping control of the assets of the firm, and thus avoid leakage to external parties that might otherwise be caused via acquisitions. This would suggest that family firms are likely to have stronger incentives to use internal rather than external diversification in comparison to nonfamily firms. Conversely, acquisition raises appropriation concerns that may be associated with the difficulties in screening and transferring capabilities into the firm (Williamson, 1975), as well as the possibility of purchasing a “lemon” (Akerlof, 1970) due to asymmetric information about the quality of the target assets (Balakrishnan & Koza, 1993). Because family firms are characterized as parsimonious in utilizing resources, I argue that family firms have a stronger preference for internal to external diversification relative to nonfamily firms.

Fourth, the notion of “local search” drawn from the behavioral theory of the firm (Cyert et al., 1963) also offers important insights on why firms might prefer internal to external diversification and this tendency is likely to be stronger in family than nonfamily firms. According to the behavioral theory of the firm, organizational decision makers conduct a local search by “searching in the neighborhood of the problem symptom and current alternatives” (Cyert et al., 1963: 121) for relevant and new capabilities when they face a problem. In other words, firms have the tendency to engage in local searches and the exploitation of what is already known (Martin & Mitchell, 1998). Local search suggests that firms would focus on exploiting old routines rather than on developing new ones (Levinthal, 1997; Levinthal & March, 1993; Rosenkopf & Nerkar, 2001) and it would also allow firms to avoid large upfront development costs (Basu, Sahaym, Howard, & Boeker, 2015; Baum, Li, & Usher, 2000; Winter, Cattani, & Dorsch, 2007).

Following this “local search” logic, I would expect that firms are more likely to use internally generated developments than external acquisitions (Rosenkopf et al., 2001) and this “local search” tendency by choosing internal entry is more likely to be manifested in family firms because of family firms’ “inward orientation” (Kelly, Athanassiou, & Crittenden, 2000: 36) and their parsimonious use of resources. Family firms are argued to be inwardly oriented and the focus of the decision makers is more oriented toward internal issues such as efficiency than to the external conditions of the market (Kelly et al., 2000). Indeed, prior family business research suggests that family firms tend to engage in local search by searching in the neighborhood of existing knowledge (Ahuja & Lampert, 2001; Winter et al., 2007). The local search tendency, especially by investing in exploitative R&D, can strengthen the firm’s core businesses

and thus augment the reputation and identity of the firm due to the firm's historic linkages with those business activities (Patel et al., 2014). These arguments also suggest that family firms are likely to have a stronger preference for internal to external diversification relative to nonfamily firms.

Fifth, while insights drawn from the corporate entrepreneurship literature suggest that internal development also entails great development and operating costs (Teng, 2007), operating costs associated with internal development are likely to be lower than those of external acquisitions (Lee et al., 2010), especially when the resource requirements of the target industry are highly related to those of the existing industry. The leveraging of these existing resource bases via internal development can help overcome barriers to entry and reduce operating costs in comparison to external acquisitions (Chang & Singh, 1999; Chatterjee, 1990; Lee et al., 2010). In contrast, acquisitions involve a large amount of lump-sum expense as well as non-trivial integration costs (Sharma, 1998). Family business research suggests that family firms are parsimonious in utilizing resources and tend to minimize operating costs (Carney, 2005; Chrisman, Chua, & Steier, 2005; De Massis, Kotlar, Frattini, Chrisman, & Nordqvist, 2016). Thus, I argue that the relative cost advantage associated with an internal entry will be more appealing to family firms than nonfamily firms and family firms would be more likely to choose internal versus external diversification than nonfamily firms. Thus,

Hypothesis 1: Family firms will rely more on internal than external diversification in comparison to nonfamily firms.



## **Heterogeneity within Family Firms**

Although I expect the strength of preference of internal to external diversification to vary in family and nonfamily entrant firms (as per Hypothesis 1), I must account for family business heterogeneity (Chrisman, Chua et al., 2012; Chrisman, Fang, Kotlar, & De Massis, 2015; Chua et al., 2012; Melin & Nordqvist, 2007). Differences in goals and resource configurations can arise from family involvement in governance through their ownership, management, and board participation (Chua et al., 2012). Specifically, these differences may be manifested in the level of family ownership (Fang, 2016; Zellweger et al., 2012), the identity of the CEO of the firm (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010; Duran et al., 2016; Feldman, Amit, & Villalonga, 2016; Li, 2017), the representation of family members in the top management team and/or the board of directors (e.g., Miller, Le Breton-Miller, & Lester, 2013), as well as the generation of the family owning and managing the family business (Fang et al., 2018; Gomez-Mejia et al., 2007). Heterogeneity in governance is likely to drive heterogeneity in goals and resources. For example, family firms with a large percentage of family ownership heighten both the legitimacy and importance of the family's pursuit of noneconomic goals. A family CEO is more likely to pursue family-centered noneconomic goals such as maintaining ownership control within the hands of the family because the family CEO typically has his or her personal wealth concentrated in the firm (Chrisman, Chua, & Litz, 2004; Duran et al., 2016). Likewise, personal attachment and self-identification with the firm are likely to be stronger in the founding-family-controlled firms than family firms controlled by other generation family members (Gomez-Mejia et al., 2007). Further, different types and amounts of resource stocks may exist in various types of family firms.

For example, resource flows in family firms that place greater weight on noneconomic goals might be different in type or amount from family firms that place greater weight on wealth creation (Chrisman, Chua, & Litz, 2003; Dierickx & Cool, 1989).

### ***The Effect of Family Ownership on the Mode of Entry***

I argue that family firms where the controlling family holds a large percentage of shares would be more likely to prefer internal to external entry than other family firms. The family's control of the firm through ownership is critical, because it provides the controlling family owners with the power and legitimacy to make decisions in idiosyncratic ways and pursue its interests through the firm (Carney, 2005; Chrisman, Fang, et al., 2015; De Massis, Kotlar, Chua, & Chrisman, 2014). Such decisions mainly reflect the values and aspirations of the owners. In other words, when family members are the large shareholders, they are likely to have the discretion and disposition to allocate, direct, and dispose of a firm's resources and shape the firm's strategy (Chrisman, Chua, De Massis, Frattini, & Wright, 2015). As such, a higher percentage of family ownership is likely to be associated with higher discretion and power to act in ways that tend to the needs of the family (Carney, 2005; Fang, Randolph, Memili, & Chrisman, 2016). Consistent with the arguments used in the development of Hypothesis 1 (H1), I expect that family firms with a large percentage of family ownership are more likely to prefer internal to external diversification than other family firms.

For example, the larger percentage of shares the dominant family owns, the more the cost of particular behavior will be borne by the family (Zellweger et al., 2012). Further, according to the corporate entrepreneurship literature, while internal development also incurs great development costs, the costs associated with internal

development would be lower in most cases because of the accumulative nature of internal development. Relative to acquired businesses, internally developed businesses would be more likely to leverage the resources of the parent firm to the entered industry (Sharma, 1998). As such, I argue that family firms with a large percentage of family ownership are more likely to be cognizant of the relative cost and resource leveraging advantages associated with internal development. Thus, as the percentage of family ownership increases, I expect that the tendency to use internal rather than external diversification should become stronger. Thus,

Hypothesis 2: The percentage of shares held by the family is positively related to the extent of using internal rather than external diversification.

### *The Effect of a Family CEO*

Firm leaders usually have substantial say in decisions related to the allocation of firm resources and the monitoring and direct usage of those resources (Hambrick & Mason, 1984). The CEO, in particular, is argued to most important in shaping the firm's strategy and resource-allocation process (Jung, Chow, & Wu, 2003). Family firms with a family CEO are likely to exhibit goals and resource idiosyncrasies that are different from those without a family CEO (e.g., Duran et al., 2016). For example, family CEOs are likely to have more tacit knowledge about the family firm (Duran et al., 2016). Prior research has shown that the family identity of the CEO can influence a firm's strategies such as corporate divestitures (Feldman et al., 2016), innovation inputs and outputs (Duran et al., 2016; Li, 2017), environmental practices (Berrone et al., 2010), and strategic conformity (Miller et al., 2013). I propose that family firms where a family CEO

is at the helm of the company would prefer internal to external diversification to a larger extent than other family firms.

A family CEO is likely to give the family firm power and discretion to make decisions that favor the pursuit of the goals of the family (Berrone et al., 2010; Duran et al., 2016), specifically, retaining family control of the firm and maintaining the family's identity. Moreover, since acquisitions often involve stock swaps that can dilute family ownership, I argue that family firms led by a family CEO, who is likely to have a stronger desire to maintain close control of the operations, will select the internal entry mode. On the other hand, while a nonfamily CEO may be influenced by the presence of family executives, there may be an incongruity between the goals of the nonfamily CEO and the family (Gomez-Mejia, Nunez-Nickel, & Gutierrez, 2001). Moreover, due to bounded rationality, nonfamily CEOs are unlikely to fully understand the importance of pursuing noneconomic goals for the family even if they had previous family firm experience (Chrisman et al., 2014; Minichilli et al., 2014; Stewart & Hitt, 2012). As a result, the investment preferences of CEOs who are not family members are likely to deviate from the investment preferences of the dominant family coalition (Singla, Veliyath, & George, 2014), because they do not possess substantial ownership rights and do not have the same non-financial goals as family firm owners do.

Furthermore, unlike family CEOs who are endowed with superior knowledge, particularly tacit knowledge about their firm's processes and systems (Duran et al., 2016), nonfamily CEOs are less likely to have deep knowledge about the family firm. This may suggest the transferability of knowledge and resources will be higher in family firms under the leadership of family CEOs because family CEOs possess valuable human

capital and knowledge about the internal affairs of their firm (Duran et al., 2016; Li, 2017), thus facilitating diversification through internal entry mode. Indeed, compared to nonfamily outside professionals, family CEOs are argued to undertake fewer short-sighted acquisitions and engage in more long-term R&D and capital expenditures projects and develop more distinctive capabilities (Miller & Le Breton-Miller, 2006; Minichilli, Corbetta, & MacMillan, 2010). Thus,

Hypothesis 3: Family firms with a family CEO will rely more on internal than external diversification in comparison to family firms without a family CEO.

### ***The Effect of Family Representation in the TMT***

Family influence on a firm's behavior is also through the representation of family members in the TMT. I argue that family firms where there is a large representation of family members in the TMT are more likely to prefer internal to external diversification in comparison to other family firms. A large representation of family members in the TMT gives the family firm power and discretion to make idiosyncratic decisions. The concept of "dominant logic" of the top managers (Grant, 1988; Prahalad & Bettis, 1986) will provide some insights to support the argument that the percentage of family executives is positively associated with the extent of internal to external diversification. Dominant logic is a cognitive concept that is defined as a "mindset or a worldview or a conceptualization of the business" among the dominant coalition (Prahalad et al., 1986: 491). Dominant logic is typically reflected in the administrative tools to accomplish goals and make decisions (Grant, 1988; Prahalad et al., 1986), and it is often rooted in the problems the top managers have encountered and the skills they have acquired over time while managing the firm's businesses. I argue that a large representation of family

executives in a family firm suggests that the “dominant logic” of family executives is more likely to be salient and these family managers are more likely to have a shared view on the business at the strategic level. Indeed, “top management teams (of family firms) become more homogeneous as family influence increases and such homogeneity is associated with...local search” (Konig et al., 2013: 426). This would suggest that family firms with a large representation of family executives are likely to have a stronger preference for internal to external diversification in comparison to other family firms.

Moreover, family executives are likely to have more experience and deep knowledge related to product and market (Chua et al., 2012; Sirmon et al., 2003), which will allow them to deploy valuable, firm-specific tacit knowledge in an efficient manner and result in efficient “resource orchestration” (Duran et al., 2016: 1225). Put differently, the particularistic and long-term socialization process of these top family executives within the firm also facilitates the transfer of tacit knowledge and social capital in family firms (Bammens et al., 2015; Verbeke & Kano, 2012). The greater compatibility of the skills required for the critical tasks in the new segment and the existing firm via internal development permits greater sharing of management expertise between the parent and the entrant (Harrison, Hall, & Nargundkar, 1993; Sharma & Kesner, 1996). The high level of transferability of resources (Speckbacher et al., 2015) and greater compatibility would provide extra incentives for choosing internal entry in family firms with a large representation of family executives in the TMT. Thus,

Hypothesis 4: The percentage of family members in the top management team is positively related to the extent of using internal rather than external diversification.

### *The Effect of a Family Board Chair*

I argue that family firms with a family board chair are more likely to prefer internal to external diversification than other family firms. Although the chair of the board is not directly involved in a firm's strategic decision-making, prior studies show that the board chair plays an important role in influencing firm strategies and outcomes (Dalton, Daily, Ellstrand, & Johnson, 1998). This is especially true in family firms where a family can exert influence on a firm's strategic decision-making by assuming the board chair position of the firm (Berrone et al., 2012). From a governance perspective, a family board chair is likely to grant the controlling family power and discretion to make decisions that favor their pursuit of family-centered noneconomic goals. This would suggest the interests of a family board chair are likely to be in line with those of the dominant family coalition. Thus, the reasons for a stronger preference for internal to external diversification argued above, including safeguarding benefits associated with internal diversification, as well as the importance attached to goals related to maintaining family control of the firm and the family's identity via internal entry can help justify the argument that family firms with a family board chair are likely to have a stronger preference for internal to external diversification in comparison to other family firms.

Thus,

Hypothesis 5: Family firms with a family board chair will rely more on internal than external diversification in comparison to family firms without a family board chair.

### ***The Effect of Family Representation on the Board***

I argue that family firms with a large representation of family members on the board of directors would prefer internal to external diversification to a larger extent than other family firms. As discussed above, a greater proportion of family members on the board increases their power to pursue strategies consistent with the goal of family owners who the family board members represent. Indeed, prior research shows that a high family representation on the board will increase disproportionately the attention on family needs (Minichilli et al., 2014). Therefore, in comparison to other family firms, family firms with a large representation of family directors are more likely to have the power and discretion to pursue internal diversification, which is consistent with the goal of retaining family control of the firm and maintaining family's identity discussed above. Thus,

Hypothesis 6: The percentage of family members on the board is positively related to the extent of using internal rather than external diversification.

### ***The Effect of Founding Generation Family Owners***

The importance of generation in affecting a family firm behaviors and strategies has received growing recognition (Chirico & Salvato, 2016; Fang et al., 2018). The interests of succeeding family generations may be different from those of the founding generation (Gersick, Davis, Hampton, & Lansberg, 1997; Miller & Le Breton-Miller, 2006). The founding generation is typically believed to be interested in maintaining control over the firm and be more averse to decentralization of power (Gomez-Mejia et al., 2007). The founding generation family owners tend to share the common goal of keeping the family together in the business and perceive the business as an extension of the family (Berrone et al., 2012). Later generations of family owners are believed to be



less attached to the family firm and less concern about the pursuit of noneconomic goals for the family (Chua, Chrisman, & Sharma, 1999; Gomez-Mejia et al., 2007; Le Breton-Miller & Miller, 2013). Therefore, consistent with my previous arguments regarding the relationship between family firms' goals, governance, and resources and diversification preference, I expect family firms under the leadership of the founding generation would exhibit a stronger preference for internal diversification to external diversification relative to other family firms.

Prior research suggests that the family's social capital that resides in the business in terms of shared language and network ties is higher when the family firm is at the founding-family-controlled and managed stage (Gomez-Mejia et al., 2007; Sirmon et al., 2003). Social capital is expected to have a positive influence on a family's commitment and attachment to the firm (Gomez-Mejia et al., 2007). Thus, founding generation family firms would be more reluctant to relinquish control (Gomez-Mejia et al., 2007). Since external acquisitions may involve stock swaps and thus dilute family control of the firm, I expect that in comparison to other family firms, founding-family-controlled and managed firms would be more reluctant to use acquisitions for diversification due to their high level of attachment to the firm and the possibility of relinquishing control of the firm associated with external entry.

Since the founding generation often acts with future generations in mind and engage in future-oriented investments to assure the firm's continued viability for future generations (Gedajlovic & Carney, 2010), they have greater motivation to explore alternative uses of knowledge-based resources and are likely to be more entrepreneurial (Fang et al., 2018). Internal development is often associated with entrepreneurial activity

and innovation (Burgelman, 1983; Srivastava et al., 2005). I expect that family firms under the leadership of the founding generation will be more likely to prefer internal to external diversification relative to other family firms. Founding generation family owners are also likely to attach more importance to long-term family goals and willing to make risky long-term R&D investments (Chrisman & Patel, 2012). In addition, founding generation family owners are argued to possess implicit and tacit knowledge because they have typically known the business since its inception (Duran et al., 2016). Such knowledge is crucial for innovation and internal development. For example, founder CEOs who possess the unique tacit knowledge and human capital are the “focal points” of their organization (Gimmon & Levie, 2010; Kaplan, Sensoy, & Stromberg, 2009). Given that internal ability is important for a firm to develop new technologies internally (Teng, 2007), I argue that founding generation family owners are likely to prefer internal to external entry compared to other family firms. On the other hand, unlike founding generation family owners, later generation family members would have more limited knowledge about the family firm (Memili, Fang, & Welsh, 2015), which might impede their choice of internal development. Research also suggests founding generations are likely to have more patient capital (Sirmon, Arregle, Hitt, & Webb, 2008; Sirmon et al., 2003). Such patient capital can facilitate founding generation family owners with internal diversification, which takes a relatively long period of time (Lee et al. 2010).

In sum, founding generation family members’ entrepreneurial tendency and internal ability to coordinate and integrate knowledge from different tasks and routines will form as extra incentives for founding generations to use internal rather than external diversification in comparison to other family firms. Thus,

Hypothesis 7: Family firms run by founding generation family members will rely more on internal than external diversification in comparison to other family firms.

In sum, these relationships are depicted in the theoretical model in Figure 1.

## **Methodology**

### **Sample and Data Collection**

To test these hypotheses, I drew my sample from several sources including Standard & Poor's (S&P) Compustat, the Center for Research in Security Prices (CRSP), Mergent Online, company proxy statements (DEF 14A), company annual reports (10-K), and company Web sites. My sample consists of 573 manufacturing firms drawn from the S&P 1500 index for the fiscal years 1998 to 2017. Due to the differences in reporting information about operating segments of a firm pre- and post-1998 (Kumar, 2009; Jiraporn, Kim, & Davidson, 2008), I chose 1998 as the cutting-off year.

I have manually collected data on firm characteristics including ownership structure of the firm, family management, and governance from firms' proxy statements filed with the Securities and Exchange Commission (SEC)<sup>4</sup>. Where the proxies contained insufficient information on the familial relationships between owners, executives, and board members, I visited Mergent Online and company Web site for more information. Special attention was given to situations where personal name changes were brought about by marriage and the possibility that some families controlled their firms via their ownership of other organizations. Consistent with prior literature (Chrisman & Patel, 2012; Miller, Le Breton-Miller, Lester, & Cannella, 2007; Villalonga et al., 2006), I

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<sup>4</sup> SEC is accessed via <https://www.sec.gov/>. This data collection process involved several hundred hours of work over a period of six months.

consider the focal family as the one with the largest voting power in the firm. Data on diversification and accounting information was drawn from Compustat, and market performance data was obtained from the CRSP. To offset the limitation that R&D data is largely missing in Compustat<sup>5</sup>, I also manually collected R&D information from firms' annual reports for my sampled firms from 1998 to 2017.

To keep the industry background consistent, I focus on manufacturing firms of S&P 1500 with 4-digit SIC codes ranging from 2000 to 3999. I exclude utility and service firms, because these firms are subject to specific government regulations compared to other firms (Anderson & Reeb, 2003b; Chrisman & Patel, 2012). Such exclusion ensures greater homogeneity in my sample. To ensure the direction of causality, one-year lags between the dependent and other variables are used. Specifically, the independent and control variables are measured from 1998 to 2016, whereas the dependent variable is measured from 1999 to 2017. Due to the longitudinal nature of data, this essay uses fixed-effect longitudinal regression models to test all hypotheses<sup>6</sup>.

In total, initial data collection generates 578 firms representing 11,560 firm-year observations from 1998 to 2017 for further cleaning and analysis. Within this sample, I carried out an initial cleaning of the data. Following a practice commonly used in the current literature (Miller et al., 2007), I replace missing values associated with research and development expenditures with zero. Likewise, I replace missing values associated with acquisition expenditures with zero. The final sample yielded an unbalanced panel dataset consisting of 573 firms representing 9,491 firm-year observations used to analyze

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<sup>5</sup> Approx. 55.9% of R&D values are missing in Compustat, compared to 21.4% in my sample.

<sup>6</sup> Hausman test also confirmed the superiority of fixed effects model over random effects ( $p < 0.001$ ).

the difference between family and nonfamily firms (H1), and 136 family firms representing 1,811 firm-year observations used to analyze the heterogeneity hypotheses (H2 - H7). The actual sample size varies for each model due to the difference in the inclusion of variables and missing data associated with the variables.

## Measures

### *Dependent Variable*

In this study, I am interested in examining the relative emphasis on these two modes of diversification (i.e., internal and external diversification) in family and nonfamily firms, as well as in various types of family firms. Past studies have generally utilized a dichotomous measure of internal and external diversification (e.g., Lee et al., 2010)<sup>7</sup>. This measure has limitations because of its “all or nothing” bias, that is, this measure arbitrarily assigns all diversification moves of a firm to either acquisition or internal development. In this study, I use a continuous measure of the mode of entry that captures the degree of emphasis on internal or external expansion across a series of diversification moves (Chatterjee et al., 1999). Specifically, I measure internal diversification using the ratio of a firm’s R&D expenditures to sales in year  $t$  adjusted by subtracting median industry-level R&D expenditures to sales in the same year (Chrisman & Patel, 2012). Likewise, I measure external diversification using the ratio of a firm’s acquisition expenditures to sales in year  $t$  adjusted by subtracting median industry-level acquisition expenditures to sales in the same year. Thus, the relative emphasis on internal

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<sup>7</sup> I have also used dichotomous approach to measure internal and external diversification. Given the dichotomous measure (0 or 1), I have used the difference between internal and external to capture the relative emphasis on these two modes of diversification. I then use *xtlogit* STATA command to run the logistic regression. Similar results were obtained.

over external diversification is calculated by taking the difference between these two ratios<sup>8</sup>, specifically,

$$\text{Difference between internal and external diversification} = \text{industry adjusted} \left( \frac{\text{R\&D cost}}{\text{total sales}} \right) - \text{industry adjusted} \left( \frac{\text{acquisition cost}}{\text{total sales}} \right)$$

Ideally, I would have liked to construct measures that directly captured the extent of internal diversification. One alternative was to measure internal diversification using the amount of increase in sales due to internal product development. But such detailed data were not available. From a theoretical standpoint, the fact that the measures may be capturing the investment in R&D and acquisitions is consistent with my arguments. Apart from this issue, my choice of the above two measures was also motivated by other important theoretical considerations. In this study, my purpose is to understand differences in the strength of preference for internal diversification (versus external diversification) between family and nonfamily firms, as well as among different types of family firms. Addressing this question calls for measures that reflect the level of internal development from investment in R&D versus external investment in terms of acquisitions.

### ***Independent Variables***

*Family firms.* Consistent with prior literature (Anderson & Reeb, 2003; Chrisman & Patel, 2012; Gomez-Mejia, Makri, & Kintana, 2010; Gomez-Mejia, Patel, & Zellweger, 2015; Villalonga & Amit, 2006), I use a binary measure of family firms. The binary family firm measure distinguishes family firms (=1) from nonfamily firms (=0) on

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<sup>8</sup> I also took the *ratio* of these two industry-adjusted values as an alternative measure for the relative emphasis on internal over external diversification.

the basis of ownership and family involvement in management and board of directors. I classify firms as family firms when the following two conditions are met: 1) at least 5% of shares held by the controlling family; 2) at least two family members who are or have been employed as significant owners, top managers, or directors in the firm's history<sup>9</sup>. The advantage of this operationalization is that it signals intra-family succession intention, which is considered the essence in the definition of a family firm (Chua et al., 1999).

This operationalization of the definition of family firms also allows me to separate "real" family firms from lone founder firms. Lone founder firms are those in which an individual is one of the company's founders with no other family members involved, and is also a large owner (5% or more of the firm's equity) or an insider (director or executive officer). Firms where the founder is present alongside other family members are categorized as family firms. Thus, a lone founder firm, by my definition, cannot be a family firm, nor vice versa. This distinction is important because these two groups of firms might display differences in their strategies and outcomes (Miller et al., 2007). Following these operationalizations, firms such as PDF Solutions Inc. that are considered first generation family firms by other scholars (Villalonga et al., 2006) are not categorized as family firms in my sample since there is no family involvement in the firm. Rather I count them as lone founder businesses. Firms such as NIKE Inc. and

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<sup>9</sup> Family member is a person who is related by blood or by marriage to the owning family. To further test if my results hold at various ownership threshold levels, I also used a more conservative definition of family control by using a measure of ownership where the family owns at least 10% or 20% of the equity and at least two family members who are or have been involved in the top management team or the board or as significant owners. Results obtained are largely consistent with those obtained when 5% ownership threshold was used.

Brown Forman Corp are considered family businesses as there are multiple members of the Knight and Brown families, respectively, serving as major owners, directors, or officers of the firm.

*Family ownership.* Although family ownership has been used to classify family and nonfamily firms, it still significantly varies among family firms. Some family firms may have large family ownership compared to others. Family ownership is measured as a continuous variable based on the overall percentage of shares owned by the controlling family (Anderson et al., 2003a; Fang et al., 2016). Since I am interested in the variation of family ownership in the family business population only to test heterogeneity hypotheses, any firm with less than 5% of family ownership is not included in the analysis.

*Family CEO.* I define family CEO as a dummy variable that takes a value of 1 when the CEO of the family firm is a family member and 0 otherwise<sup>10</sup>.

*Family board chair.* I define family board chair as a dummy variable that takes a value of 1 when the chair of the board is a family member and 0 otherwise<sup>11</sup>.

*Representation of family members in the TMT.* This variable is measured using the number of family executives divided by the total number of executives in the TMT<sup>12</sup>.

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<sup>10</sup> Since part of my theoretical arguments are made from a resource perspective, I also used the duration of the CEO working in the firm as an alternative measure for the presence of a family CEO in the firm. Similar results were obtained.

<sup>11</sup> I also used the duration of the chair working in the firm as an alternative measure for the presence of a family chair in the firm. Similar results were obtained.

<sup>12</sup> As a robustness check, I also used count variable as an alternative measure to capture family representation in the TMT. Similar results were obtained.



*Representation of family members on the board.* This variable is measured based on the number of family directors divided by the total number of directors on the board<sup>13</sup>.

*Founding generation family members.* This variable is defined as a dummy variable and takes the value of 1 when there is a founding generation family member involved in the ownership of the firm, the TMT and/or the board and 0 otherwise.

### ***Control Variables***

I include a number of control variables in my analysis to account for alternative explanations of the relationship between family firms and the strength of the preference for internal to external diversification. My selection of these control variables follows Chrisman and Patel (2012), Fang (2016), and Miller et al. (2007). I first control for influence of *firm age* and *firm size*, because these variables can affect a firm's choice of entry mode (Beaumont et al., 2017; Lee et al., 2010). Firm age is calculated using the number of years since the firm was founded. Firm size is measured using the natural logarithm of total number of employees of the firm. I also control for *debt to equity ratio* using the total debt divided by the market value of common equity (Dean & Sharfman, 1996; Miller et al., 2007). In addition, I control for *past performance* of the firm, because performance may affect a firm's strategic decisions (McNamara, Vaaler, & Devers, 2003). A firm's past performance is measured as industry-adjusted Tobin's Q in *t-1* term, which is calculated as firm Tobin's Q minus median industry Tobin's Q, at a 2 digit SIC<sup>14</sup>. Tobin's Q is the ratio of the firm's market value to book value (Chung & Pruitt,

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<sup>13</sup> As a robustness check, I also used count variable as an alternative measure to capture family representation on the board. Similar results were obtained.

<sup>14</sup> Industry-adjusted Return on Assets (ROA) in *t-1* term is used for a robustness test of a firm's performance. ROA is measured as income before extraordinary items divided by total assets (Miller et al., 2007).

1994; Miller et al., 2007). Industry dummies measured at the two-digit SIC level and year dummies were also used to control for differences in diversification behavior across industries and years, respectively.

Moreover, consistent with prior literature (Miller et al., 2007), I control for *advertising to sales ratio* and *new investment in plant and equipment*. Advertising is calculated using advertising expense divided by total sales of the firm. Investment is calculated as capital expenditures divided by plant property and equipment. In addition, internationalization is argued and found to be associated with a firm's product diversification (Mayer, Stadler, & Hautz, 2014; Wiersema et al., 2008). Hence, I also control for internationalization, which is measured using the amount of sales generated from foreign markets divided by the total sales of the firm (Tallman & Li, 1996). Lastly, firms are often path dependent and "a firm's current position is often shaped by the path it has traveled" (Teece, Pisano, & Shuen, 1997: 522). I thus also control for *a firm's extent of internal versus external diversification* in  $t-1$ . Specifically, I took the difference between the two industry-adjusted ratios (i.e., R&D cost /sales and acquisition cost/sales) in  $t-1$ <sup>15</sup>.

I have argued there will be differences in the strength of the preference for internal to external diversification between family and nonfamily firms as well as among different types of family firms. It was important to ensure that my findings were not caused by other types of concentrated ownership. Therefore, I also include *non-family blockholder ownership* as another control variable. Non-family blockholder ownership is

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<sup>15</sup> I also took the ratio of these two industry-adjusted values in year  $t-1$  as an alternative measure. I have also used industry-adjusted ID and industry-adjusted ED as two separate controls. Similar results were obtained.

measured based on the total percentage of shares hold by all nonfamily block holders which are individuals or institutions listed in the firm proxy statements as beneficial owners of at least 5% of the firm. I also control for family *CEO duality* (when both the CEO and the chair positions are assumed by a family member who may or may not be the same person). This dual position might particularly enable the dominant family to pursue strategies that attend to the needs of the dominant family (Duran et al., 2016) and strengthen the family influence on a firm's diversification behavior. Family CEO duality is measured as a binary variable and takes the value of 1 when both the CEO and the board chair positions are assumed by a member from the dominant family. Finally, the *inverse Mills ratio* calculated to control for endogeneity is added as an additional control in all models<sup>16</sup>.

### **Controlling for Endogeneity**

Self-selection bias may be present among firms reporting internal and external diversification. I therefore employed the Heckman selection model, a two-stage procedure that corrects for self-selection bias in regression analysis (Heckman, 1979; Lee, Maddala, & Trost (1980). I adopted two instrumental variables that are highly related to the independent variables but are not related to the dependent variable to control for alternative explanations. I included *family trust holdings* affiliated with the largest owners of the firm in a given year as an instrumental variable (Fang, 2016). Family trust or foundations are often used by family firms as means to take care of the

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<sup>16</sup> Inverse Mills ratio, a probability density function that corrects for the estimation bias as a result of the truncated observations, is included in the second-stage analysis as an instrumental variable to correct for any selection bias.

needs of their family members. Thus, family trust holdings are likely to be highly related to family business variables but should not be related to the dependent variable (i.e., the relative emphasis on internal over external diversification). Family trust holdings are measured as a binary variable in which 1 denotes the situation where the owner holds either trusts or foundations associated with family members and 0 otherwise. Data related to family trust holdings was manually collected from firms' proxy statements. I also included *family firms' fraction of sales by industry* as an instrumental variable (Amit, Ding, Villalonga, & Zhang, 2015; Fang, 2016)<sup>17</sup>. This variable is naturally correlated with the probability that a firm in the industry is a family firm, however, it should not be correlated with the second-stage dependent variable. *Family firms' fraction of sales by industry* is measured using the amount of sales by family firms in a particular industry divided by the total amount of sales in this industry.

STATA package (version 13.0) was used for data analysis. Using Heckman's two-stage procedure, I ran a probit analysis that regresses the family firm variable against variables that predict family firms in the first stage of the procedure. These predictors include nonfamily block holder ownership, firm age, firm size, debt to equity ratio, firm performance, advertising to sales ratio, new investment in plant and equipment, internationalization, family trust holdings, family firms' fraction of sales by industry, and firm prior diversification experience (Anderson & Reeb, 2003b; Fang, 2016; Miller et al.,

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<sup>17</sup> Initially, I included *family firms' fraction of capital expenditure by industry* and *family firms' fraction of advertisement expenditure by industry* as other instrumental variables. After running analyses, these variables were found not to significantly predict family firms, and thus were not included in my subsequent analyses.

2007). Based on the first-stage regression, I calculated the inverse Mills ratio and included it in my second-stage models, which are used to test my hypotheses.

## Analyses

I took a number of steps to address important methodological issues that are common in panel data analysis. First, I employed a firm fixed effects model to attend to the potential issue of unobserved heterogeneity that might arise out of multiple observations per firm (Certo & Semadeni, 2006; Hsiao, 1985). The fixed effects model focuses on within-firm variation over time, so the coefficients are not biased by time-invariant firm heterogeneity (Greene, 2003). I conducted Hausman tests and the results confirmed the superiority of fixed effects model over random effects ( $p < 0.001$ ) (Hausman & Taylor, 1981). Accordingly, all analyses were estimated using the *xtreg* STATA command with fixed-effects option (*fe*). Second, a Woolridge test (Woolridge, 2002) and a Breusch-Pagan test (Breusch & Pagan, 1979) provide evidence of serial correlation and heteroskedasticity in my panel dataset. To control for these problems, I estimated robust standard errors using the Huber-White sandwich estimator clustered at the firm level (White, 1980). Specifically, I used the *vce(robust)* STATA command to obtain robust standard errors. Third, I also controlled for multicollinearity by examining correlation matrix of coefficient of *xtreg* model using the *estate vce, corr* STATA command<sup>18</sup>. I followed the threshold of 0.6 correlation recommended by Allison (1999). The results obtained were well below 0.6 except for the correlation between *family CEO*

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<sup>18</sup> Variance inflation factor (VIF) is designed to check for multicollinearity for pooled OLS regression. Since I used fixed effects models, I checked multicollinearity by examining correlation matrix of coefficient (Allison, 1999).

and *family CEO duality* and the correlation between *family board chair* and *family CEO duality*. As such, family CEO duality was not included as a control in several models related to testing H3 (family CEO) and H5 (family board chair). Finally, all variables were winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentile in response to extreme outliers in the data set<sup>19</sup>.

### **Empirical Results**

Variables included in my analysis are listed and defined in Table 2, along with their sources. Means, standard deviations, and correlations for the variables are presented in Table 3<sup>20</sup>. In general, family firms represent 19.3% of my sample, while lone-founder firms represent 7.9%. These numbers are comparable to other studies exploring publically traded family firms and lone-founder firms (Fang, 2016; Miller et al., 2007). Consistent with prior literature, family firms are found to be significantly and negatively related to a firm's R&D investment and acquisition activities (e.g., Chrisman & Patel, 2012; Miller et al., 2010).

As mentioned above, this study uses Heckman's two-stage approach to partially control for endogeneity. Model 1 in Table 4 is the first-stage probit treatment model in which family business as a binary variable is regressed against instrumental variables and other controls. Lone founder firms are not included as a control, because lone founder firms are mutually exclusive from family firms. Overall, family trust holdings and family firms' fraction of sales by industry are positively and significantly related to the family

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<sup>19</sup> I have also run all of the analyses with the full sample. Similar results were obtained.

<sup>20</sup> Comparison of the means, standard deviations, and ranges of all variables for family and nonfamily firms, as well as among various types of family firms are also provided and shown in Table 24, 25, 26, and 27.

business variable, suggesting that the selection of these instrumental variables is reasonable. Model 2 of Table 4 tests H1, which predicted that family firms will rely more on internal than external diversification in comparison to nonfamily firms. Results show that debt to equity ratio ( $B=0.047, p<0.001$ ) and a firm's diversification experience in the previous year ( $B=0.592, p<0.001$ ) have a significantly positive effect on a firm's tendency to engage more in internal rather than external diversification. The effect of family firms on a firm's tendency to engage in internal rather than external diversification is positive, however, this effect is not significant ( $B=0.106, p>0.1$ ). Hence, H1 is not supported.

Model 3-9 (Table 5, 6, and 7) test heterogeneity hypotheses (H2 - H7) concerning the effects of the level of family ownership, family CEO, family representation in the TMT, family board chair, family representation on the board, and founding generation family members on a firm's tendency to engage in internal rather than external diversification. Model 3 (Table 5) tests the hypothesis that whether the percentage of shares held by the family is positively related to the extent of using internal rather than external diversification. The result shows that family ownership is positively related to a firm's tendency to engage in internal rather than external diversification, however, the coefficient is not significantly different from zero ( $B=0.0001, p>0.1$ ). Thus, H2 is not supported. Model 4 (Table 5) tests the effect of a family CEO on a family firm's tendency to engage in internal rather than external diversification. Family CEO is found to be negatively related to a firm's tendency to engage in internal rather than external diversification, and this effect is not significant ( $B=-0.020, p>0.1$ ). Thus, H3 is not supported. Model 5 (Table 5) tests the percentage of family members in the top

management team is positively related to the extent of using internal rather than external diversification. Family representation in the TMT was also found to be negatively related to a firm's tendency to engage in internal rather than external diversification and this effect is not significant ( $B=-0.029, p>0.1$ ). Thus, H4 is not supported.

Model 6 (Table 6) tests H5 that predicts family firms with a family board chair will rely more on internal than external diversification in comparison to family firms without a family board chair. The result shows that the presence of a family board chair has a non-significant positive effect on a firm's tendency to use internal rather than external diversification ( $B=0.027, p>0.1$ ). Thus, H5 is not supported. Regarding the effect of family directors, it is shown that family representation on the board is negatively related to a firm's tendency to engage in internal rather than external diversification and this relationship is not significant ( $B=-0.112, p>0.1$ ). H6 is not supported. This finding is shown in Model 7 (Table 6). Lastly, Model 8 (Table 6) captures the effect of founding generation family member on a firm's tendency to engage in internal rather than external diversification. The result shows that founding generation family is positively associated with a firm's tendency to use internal rather than external diversification, however, this relationship is not significant ( $B=0.026, p>0.1$ ). Thus, H7 is not supported. Model 9 (Table 7) shows the regression that tests all the heterogeneity hypotheses simultaneously. The results are largely consistent with those obtained when these variables are analyzed separately; no significant relationships emerge.

### **Robustness and Post-hoc Tests**

A number of measures were employed to establish the robustness of my results. First, in my analyses above, I have used the *difference* between internal and external



diversification to capture a firm's relative emphasis on internal over external diversification. As a robustness check, I have also used the *ratio* of internal to external diversification as an alternative measure to capture a firm's relative emphasis on these two modes of diversification. Results obtained are largely consistent with those obtained when the *difference* measure was used. These results are reported in Models 10-18 (Table 8, 9, 10, and 11). Specifically, family firms were found to have a non-significant positive effect on a firm's tendency to engage in these two modes of diversification ( $B=0.760$ ,  $p>0.1$ ) (Model 11 of Table 8). In addition, the results for testing the heterogeneity hypotheses are as follows: family ownership ( $B=0.039$ ,  $p>0.1$ ) (Model 12 in Table 9), family CEO ( $B=0.960$ ,  $p>0.1$ ) (Model 13 of Table 9), family representation in the TMT ( $B=7.038$ ,  $p>0.1$ ) (Model 14 of Table 9), family board chair ( $B=3.719$ ,  $p>0.1$ ) (Model 15 of Table 10), family representation on the board ( $B=10.140$ ,  $p>0.1$ ) (Model 16 of Table 10), and founding generation family ( $B=-10.665$ ,  $p<0.05$ ) (Model 17 of Table 10). In addition, when all heterogeneity variables are included in the regression, the results are largely consistent with those obtained when these variables are examined separately (Model 18 of Table 11). It is worth noting that founding generation family is found to have a significantly negative effect on a firm's tendency to engage in internal rather than external diversification when the dependent variable is measured using the *ratio* of internal to external diversification. Further analyses show that this finding is not robust. Specifically, the effect of founding generation is not significant when family firms are defined using 5% family ownership and the DV is measured using the *difference* approach ( $B=0.026$ ,  $p>0.1$ ) (Model 8 of Table 6), or 10% family ownership and the DV is measured using the *difference* approach ( $B=0.046$ ,  $p>0.1$ ) (Model 26 of Table 14), or

20% family ownership and the *difference* approach is used to define the DV ( $B=0.070$ ,  $p>0.1$ ) (Model 35 of Table 18).

Second, in my analyses above, I have used the threshold of 5% family ownership to define family firms. As a post-hoc analysis, I have also used 10% family ownership threshold to define family firms. Results obtained are largely consistent with those obtained when 5% family ownership threshold is used. These results are shown in Model 19-27 of Table 12-15<sup>21</sup>. It is worth noting that family CEO was found to have a significantly negative effect on a firm's tendency to engage in internal rather than external diversification ( $B=-0.026$ ,  $p<0.1$ ) when family firms are defined using 10% family ownership threshold. However, a further robustness check shows this finding is not robust. The effect of family CEO on a firm's tendency to engage in internal rather than external diversification is not significant when family firms are measured using 5% family ownership threshold ( $B=-0.020$ ,  $p>0.1$ ) (Model 4 of Table 5), or 20% family ownership threshold ( $B=-0.007$ ,  $p>0.1$ ) (Model 31 of Table 17).

As a further robustness check, I have also used the threshold of 20% family ownership to define family firms. Results obtained are largely consistent with those obtained when a 5% or 10% family ownership is used. These results are reported in Model 28-36 of Table 16-19<sup>22</sup>. Specifically, the effect of family business is not significant ( $B=0.026$ ,  $p>0.1$ ) (Model 29 of Table 16). The results for testing the heterogeneity hypotheses are as follows: family ownership ( $B=0.0004$ ,  $p>0.1$ ) (Model 30

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<sup>21</sup> The analysis reported herein is based on that the DV is measured using the *difference* approach. Similar results were obtained when the *ratio* approach is used. These results are available upon request.

<sup>22</sup> The analysis reported herein is based on that the DV is measured using the *difference* approach. Similar results were obtained when the *ratio* approach is used. These results are available upon request.

of Table 17), family CEO ( $B=-0.007, p>0.1$ ) (Model 31 of Table 17), family representation in the TMT ( $B=0.022, p>0.1$ ) (Model 32 of Table 17), family board chair ( $B=0.041, p>0.1$ ) (Model 33 of Table 18), family representation on the board ( $B=-0.096, p>0.1$ ) (Model 34 of Table 18), and founding generation family ( $B=0.070, p>0.1$ ) (Model 35 of Table 18). In addition, when all heterogeneity variables are included in the regression, the results are largely consistent with those obtained when these variables are examined separately (Model 36 of Table 19).

Third, in my data cleaning process above, I have replaced missing values associated with R&D and acquisition expenditures with zero. As a further check on the robustness of my results, I have dropped observations with R&D and acquisition expenditures missing values. This process leads to a sample of 7,539 firm-year observations and 493 firms for testing H1 and 1,317 firm-year observations and 108 firms for testing heterogeneity hypotheses. Results obtained are largely consistent with those obtained when the full sample was used. These results are shown in Model 37-45 in Table 20-23.

Fourth, given that few significant results were obtained in my study, it is important to calculate the power of my statistical tests to further strength confidence in my results. As such, I did a post hoc power analyses to verify whether the non-significant result is due to really no relation in the sample or due to lack of statistical power. I use G\*Power (3.1.9.4) program to calculate the power of my statistical tests<sup>23</sup>. G\*Power is a power analysis program commonly used in the social, behavioral, and biomedical sciences (Carbonell, Rodríguez-Escudero, & Pujari, 2009; Faul, Erdfelder, Buchner, &

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<sup>23</sup> G\*Power is a free power analysis program, which can be downloaded at <http://www.gpower.hhu.de>.

Lang, 2009; Minichilli et al., 2010). Statistical power,  $1-\beta$ , is computed as a function of significance level  $\alpha$ , sample size, and population effect size (Cohen, 1988). Based on inputs related to  $\alpha$  error probability, total sample size, effect size, and number of predictors, a post hoc power is computed. An illustration of the power calculation using G\*Power is attached in Figure 2. The post-hoc power test revealed that statistical power of each regression model was well above the commonly accepted threshold of 0.8 (Cohen, 1992). Specifically, the statistical power of the regression model testing the effect of family firm on a firm's tendency to engage in internal rather than external diversification is close to 1. The power of the regression models testing the heterogeneity family business variables range from 0.88 and 1. The powers of these models are presented with the regression results in each of the attached tables. These results provide greater confidence in my results.

Lastly, both internal and external diversification are considered risky behaviors (Lee et al., 2010). Family business scholars have argued that family firms are more likely than nonfamily firms to diversify risk when making multiple decisions (Berrone et al., 2012; Chrisman & Patel, 2012; Gomez-Mejia et al., 2007). As such, I have also tested whether there is any difference between family and nonfamily firms in diversifying risk when they make multiple decisions. In the new model, I included external diversification as the dependent variable, internal diversification as an independent variable, the interaction between family firms and internal diversification as another independent variable, as well as other control variables. The finding shows that a firm's internal diversification has a significantly positive effect on a firm's external diversification ( $B=0.143, p<0.05$ ), confirming that a firm's engaging in one risky behavior will affect

their subsequent risky behavior (Bromiley, McShane, Nair, & Rustambekov, 2015). However, the interaction effect between family firms and internal diversification is not significant ( $B=0.034, p>0.1$ ), suggesting there is no significant difference between family and nonfamily firms in the influence of one risky decision on another<sup>24</sup>.

In addition, I have checked whether there is any performance implication of a firm's strong tendency to engage in one mode of diversification over the other, as well as the interaction effect between family firms and this tendency on a firm's performance. As such, in the new model, I have included firm performance as the dependent variable, the emphasis of internal over external diversification as an independent variable, the interaction between family businesses and the relative emphasis on these two modes of diversification as another independent variable, as well as other control variables. The results show that the emphasis on internal over external diversification is negatively associated with a firm's performance although this effect is not significant ( $B=-0.039, p>0.1$ ). The interaction effect between family firms and the emphasis on internal over external diversification is positively related to a firm's performance, however, this effect is not significant ( $B=0.065, p>0.1$ ). This result suggests that there is no significant difference between family and nonfamily firms in terms of the performance outcome of a firm's relative emphasis on internal over external diversification<sup>25</sup>.

## Discussion and Conclusions

Diversification is one of the most studied topics in the strategic management literature. Firms are concerned about what market to enter, at the same time, they are also

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<sup>24</sup> These results are available upon request.

<sup>25</sup> Results to these tests are available upon request.

concerned about how to enter a market. Internal diversification and external acquisitions are two alternatives firms can use to diversify. Prior research has shown that the choice of entry mode depends on the characteristics of the firm (Beaumont et al., 2017; Speckbacher et al., 2015), the characteristics of the entered industry (Lee et al., 2010; Sharma, 1998), and the relation between the existing industry and the entered industry (Busija et al., 1997). But how the unique goals, governance, resources embedded in a firm may affect a firm's choice of entry mode has not been addressed in terms of the relative emphasis on one entry mode over the other.

Based on the literature that family firms differ from nonfamily firms in the goals, resources and governance structure (Chrisman et al., 2013), I argue that the tendency to choose internal (vs. external diversification) is likely to be stronger in family than nonfamily firms (H1). Due to the heterogeneous nature of family firms that is likely to be manifested in different configurations of family ownership, family involvement in the TMT and/or the board, I further examine the strength of preference for internal (vs. external diversification) in various types of family firms. Specifically, I propose the stronger preference for internal to external diversification is likely to be shown in family firms with a large percentage of family ownership (H2), the presence of a family CEO (H3), a large representation of family executives (H4), the presence of a family board chair (H5), and a large representation of family directors (H6), and the presence of founding generation family members in the firm (H7).

An empirical assessment of 573 manufacturing firms drawn from the S&P 1500 index provides no support for the proposed theoretical model. While prior research has shown family firms invest less in both internal (e.g., Chrisman & Patel, 2012) and

external diversification (e.g., Gomez-Mejia et al., 2018; Miller et al., 2007), I did not find any significant difference between family and nonfamily firms in terms of their relative emphasis on these two modes of diversification. There are a number of alternative explanations for the non-significant relationships. First, from a resource perspective, I have argued that family firms' highly idiosyncratic assortment of resources may motivate family firms to use internal activities for governing their operations and production (Memili et al., 2011) and thus family firms are likely to show a stronger tendency towards internal rather than external diversification. In addition, these idiosyncratic resources would make the compatibility of an acquisition with the parent firm extra difficult should diversification be conducted via the external mode. On the other hand, prior research also suggests that like nonfamily firms, family firms often face the difficulty of managing the process of coordinating resources associated with making R&D investments due to their constrained managerial capacity and limited ability to manage the R&D process (Chrisman & Patel, 2012). Indeed, research has shown that the advantage associated with family firms' high levels of tacit knowledge among employees is likely to be manifested in innovation output (i.e., patent creation) rather than innovation input (i.e., R&D investment) (Duran et al., 2016). According to Duran and colleagues (2016), tacit knowledge among employees and idiosyncratic assortment of resources in family firms can foster the transfer of valuable ideas across departments and support the resource orchestration within the firm and thus result in higher innovation output (Duran et al., 2016). However, such advantage associated with idiosyncratic resources is unlikely to be observed during the innovation inputs or R&D investment process (Duran et al., 2016). These literatures, to a certain extent, may explain why

family firms have no particular preference for internal to external diversification in comparison to nonfamily firms.

Second, from a goals perspective, I have argued that family firms may show greater reluctance to use external acquisition to enter a new market because acquisitions often involve stock swaps and thus dilute the family ownership control of the firm. The finding that family firms have no particular preference for internal or external diversification compared to nonfamily firms indicates that both internal and external diversification may impose great risks on relinquishing a family firm's ownership control of the firm. Indeed, internal diversification often requires external capital and increases the possibility of family firms to raise money from the stock market and thus increases their debt level (Mishra & McConaughy, 1999). This will ultimately lead to the diluting of family ownership control of the firm. This suggests the goal of retaining family control over the firm will render family firms' internal diversification limited (Duran et al., 2016).

Further, both external and internal diversification incur non-trivial costs. On one hand, external diversification requires payments of a significant financial premium (Lakshman, 2011). On the other hand, internal diversification faces high development costs. The average level of firms' investment in R&D can exceed 10% of their revenues (European Commission, 2013). Both internal and external diversification are considered risky decisions (Lee et al., 2010). While external diversification entails great risk associated with the post-acquisition integration process, internal diversification also entails great risk and embodies renewal activities as well as risk associated with corporate entrepreneurship (Sharma et al., 1999). These literatures suggest both internal and



external diversification entail risks and benefits. The finding that family firms have no particular preference for internal diversification to external suggests that neither type of risk and goal systems plays a more dominant role in affecting a family firm's diversification behavior. Indeed, family firm decision-making are influenced by a diverse set of goals (Chua, Chrisman, De Massis, & Wang, 2018; Kotlar & De Massis, 2013). How these different goals interact with one another and together affect family firms' strategic decisions represents a promising area for future research.

Lastly, it is also worth discussing the two significant findings observed in the robustness tests. First, founding generation family members was found to have a significant negative effect on a firm's tendency to engage in internal rather than external diversification when the dependent variable is measured using the *ratio* of internal to external diversification and when the family firms are measured using 5% family ownership threshold. However, this significant effect was not observed in further robustness tests, specifically, when the dependent variable is measured using the *ratio* approach and when family firms are defined using 10% or 20% family ownership threshold. In addition, the significant effect of founding generation family members was not observed when family firms are defined using 5% or 10% or 20% family ownership threshold and when the dependent variable is measured using the *difference* approach. This significant effect was also not observed when the hypothesis was tested using a sample with observations that R&D and acquisition costs are missing and deleted. Thus, it is likely that the observed significant negative effect of founding generation may be due to chance.

The second significant finding shown in the robustness test is related to the effect of family CEO. Family CEO was found to have a significantly negative effect on a firm's tendency to engage in internal rather than external diversification when family firms are defined using 10% family ownership threshold and the DV is measured using the *difference* approach. However, the significant effect of family CEO was not observed when family firms are defined using 5% family ownership or 20% family ownership and the DV is measured using the *difference* approach. However, the effect of family CEO is not significant when the DV is measured using the *ratio* approach and family firms are defined using either 5% or 10% or 20% family ownership threshold. The effect of family CEO is not significant when I used a sample with observations that R&D and acquisition costs are missing and deleted and defined family firms using 10% family threshold. Likewise, when I use the number of years the CEO has worked in the firm as an alternative measure for family CEO, the significant negative effect is not observed. While the significant negative effect of family CEO is not observed in these further robustness tests, the significant negative effect of family CEO observed when family firms are defined using 10% family ownership shows that findings may be sensitive to the way in which family businesses are defined. This finding confirms the argument that the varying levels of family ownership and control can serve as an important contingency in firm's strategic decisions (Chrisman et al., 2005; Melin et al., 2007). Although 5% family ownership was widely used as a cutting-off point in the study of family influence on a firm's behavior, such an arbitrary dichotomous definition of family firms is receiving a growing criticism (Chrisman et al., 2012; Villalonga et al., 2006). Future research was

recommended to run robustness checks for the results using different threshold family ownership.

By introducing the importance of unique goals, governance structure, idiosyncratic resources of the firm in understanding a diversifying firm's entry mode, this study has several theoretical implications. First, empirical studies show that family ownership is negatively related to the level of diversification (Anderson et al., 2003a; Gomez-Mejia et al., 2010). For example, Anderson and Reeb (2003a) found family firms exhibit about 15% less corporate diversification than nonfamily firms. But how family firms diversify (internal versus external diversification) once they decide to diversify has not been addressed. Using the goals, governance, and resources framework, this study provides an integrated understanding of the influence of the three elements in a family firm's decision-making related to the choice of entry mode and thus helps advance a theory of the family firm (Chrisman et al., 2016). In so doing, this study contributes to our knowledge of the antecedents of diversification and diversification mode in particular.

Moreover, goals, governance, and resources are the essence to understand the fundamental differences between family and nonfamily firms as well as among different types of family firms (Chrisman et al., 2013). However, most of the current research using this framework has used proxies to capture such influence. This study represents one of the first few attempts to capture the different dimensions of the framework, specifically, the resource and governance dimensions. In this study, I used the number of years the CEO has worked in the firm as an alternative measures to capture their superior knowledge of the firm. Likewise, I have used the number of years the board chair has

worked in the firm as another measure for the presence of a family board chair in the firm. These measures generated results that are consistent with those obtained using the proxy measures. These consistent findings suggest the validity of using the presence of a family CEO and a family board chair to capture their influence on a firm's behavior (Berrone et al., 2010; Duran et al., 2016).

There are several limitations to the current research. These limitations suggest a number of promising research directions. A major limitation of this study is the operationalization of the family firm variable. In this study, consistent with prior literature (e.g., Chrisman & Patel, 2012; Miller et al., 2007), family firms are operationalized using two conditions related to the percentage of family ownership and the family involvement in the TMT and/or the board. Although the inclusion of the second condition—at least two family members are or have been involved in the firm, to a certain extent, helps capture the family's transgenerational succession intention (Chrisman & Patel, 2012), this operationalization is unlikely to fully capture the essence of family influence on a firm's behavior (Chrisman, Chua, & Sharma, 2005; Chua et al., 1999). Future research is recommended to use other research designs such as surveys to directly capture the essence of the family influence and their relation with a firm's strategy related to diversification modes.

Second, the measure of the dependent variable, i.e., relative emphasis on internal over external diversification may represent another limitation. Internal diversification was measured using industry-adjusted value of R&D expenditures divided by the total sales of the firm, whereas external diversification was based on industry-adjusted value of acquisition costs divided by the total sales of the firm. The relative emphasis on internal

over external diversification was calculated using the *difference* between these two industry-adjusted ratios. The *ratio* of these two values was used as an alternative measure. While results obtained using the *difference* and *ratio* approaches are largely similar, future research is recommended to measure internal and external diversification directly. For example, future research can measure internal entry using the amount of increase in sales due to internal product development and external entry using the amount of increase in sales due to external acquisitions. More research based on a variety of measures shall help us gain a better understanding of a firm's diversification behavior.

In conclusion, this study investigates diversification modes in terms of internal versus external diversification in family firms. Drawing upon the goals, governance, and resources framework, this study proposes that family firms and nonfamily firms exhibit differences in their choice of mode for diversification, specifically, family firms are more likely to prefer internal to external diversification than nonfamily firms. This stronger preference for internal to external diversification is also proposed to be shown in family firms with a large percentage of family ownership, a family CEO, a large representation of family executives, a family board chair, a large representation of family directors, and the founding generation of family members in the firm. An empirical analysis of 573 manufacturing firms drawn from the S&P 1500 index shows there is no significant difference between family and nonfamily firms in their strength of preference for internal to external diversification, as well as among different types of family firms. These insignificant findings drawn from this study highlight the complexity of family firm behavior and the influence of the combination of goals, governance, and resources on a family firm's behavior is more complicated than we expected.

Table 1 The characteristics of internal diversification and external diversification

	Internal diversification	External diversification
Costs	- faces high development costs, which can be related to experiments with new technological opportunities inside the firm	- requires payments of a significant financial premium - incurs non-trivial costs of integrating the acquired firm with the acquiring firm
Speed	- takes a relatively long period of time which can be many months or years	- most acquisitions are consummated relatively quickly - acquisitions are more likely to be used as the entry mode for quick growth
Risks	- involves periodic incremental investments, however, internal development also entails great risk - the risk associated with corporate entrepreneurship, specifically, the risk in developing new products, technologies, and capabilities, is usually high - the potential to manage the downside risks of internal diversification would be greater - the internal business is usually a great deal more compatible with the firm in terms of systems, culture, and procedures	- carries risk because acquisitions entry involves a large one-time investment; usually entails great risk when a firm makes an acquisition of another ongoing entity, because the acquiring firm invests in all aspects of business operations up front - high possibility of overpaying because of the asymmetry of information regarding the true value of the target firm - great difficulty associated with the post-acquisition integration process due to lack of history between managers of acquired business and those of the parent firm - more difficult to manage the downside risks of external acquisitive entry

Table 2 Summary of variables and measures – Essay 1

Variable	Definition/Measure
<i>Dependent Variable</i>	
Industry-adjusted relative emphasis on internal diversification over external diversification	Difference between industry-adjusted internal diversification (i.e., R&D cost/total sales) and industry-adjusted external diversification (i.e., acquisition cost/total sales); Ratio of industry-adjusted internal diversification to industry-adjusted external diversification as an alternative measure; Source: R&D cost manually collected from Firm annual reports; Acquisition cost downloaded from Compustat.
<i>Independent Variables</i>	
Family Firm	Family firm is a binary variable; 1 indicates presence of family. Two conditions are required to be considered a family firm: 1) at least 5% of the firm's equity hold by the family; 2) at least two family members involved in the firm as insiders (officers or directors) or large owners; 10% and 20% of the firm's equity hold by the family as alternative measures; Source: Firm Proxy Statements; Mergent Online; Company Web Site.
Family Ownership	The total voting share expressed as a percentage of total outstanding shares owned by the controlling family; Source: Firm Proxy; Company Web Site.
Family CEO	Family CEO is a binary variable; 1 indicates that any family member holds the title of chief executive officer (CEO); The duration of the CEO working in the firm as an alternative measure; Source: Firm Proxy Statements.
Family Board Chair	Family board chair is a binary variable; 1 indicates that any family member holds the title of chairman of the board; The duration of the board chair working in the firm as an alternative measure; Source: Firm Proxy Statements.
Family Representation in the TMT	The number of family executives in the TMT as a percentage of total number of executive members; Count variable as an alternative measure; Source: Firm Proxy Statements.
Family Representation on the Board	The number of family directors on the board as a percentage of total number of directors; Count variable as an alternative measure; Source: Firm Proxy Statements.
Founding Generation Family	A binary variable; 1 indicates a family firm with family member(s) present from the founding generation. Source: Firm Proxy Statements; Company Web Site; Other public web source.

Table 2 (continued)

<i>Control Variables</i>	Definition/Measure
Firm Age	Calculated in years as the difference between the data year and the firm's founding year; Source: Firm Proxy Statements; Mergent Online; Company Web Site; Other public web source.
Firm Size	The natural log of total number of employees of the firm; Source: Compustat.
Debt to Equity Ratio	Calculated as the values of total debt divided by the market value of common equity; Source: Compustat.
Tobin's Q	Tobin's Q is the ratio of the firm's market value to book value; Source: Compustat.
Industry Adjusted Tobin's Q	Calculated as firm Tobin's Q minus median industry Tobin's Q at a two digit SIC; Source: Compustat.
Return on Assets (ROA)	ROA is calculated as income before extraordinary items divided by total assets of the firm. Source: Compustat.
Industry Adjusted Prior Diversification Experience Advertising	Industry-adjusted relative emphasis on internal over external diversification in year $t-1$ ; Source: Compustat.
Investment	Advertising expense ratio is calculated as advertising expense divided by total sales. Firms with missing data were coded =0. Source: Compustat.
Internationalization	Investment ratio is calculated as capital expenditures divided by plant property and equipment. Firms with missing data were coded =0. Source: Compustat.
Nonfamily Block Holder Ownership	Calculated as the total amount of sales generated from foreign markets divided by total sales of the firm; Source: Compustat.
Family CEO Duality	Calculated as the total percentage of shares hold by all nonfamily block holders. Block holders are individuals or institutions listed in the firm proxy statement as beneficial owners of at least 5% of the firm. Source: Firm Proxy Statements.
Lone Founder	A binary variable; 1 indicates when both the CEO and the board chair positions are assumed by a family member. Source: Firm Proxy Statements; Company Web Site; Other public source.
Family Trust Holdings	Lone founder firm is a binary variable; 1 indicates a lone founder's involvement. Lone founder firms are defined as those in which an individual is one of the company's founders with no other family members involved, and is also an insider (officer or director) or a large owner (5% or more of the firm's equity). Source: Firm Proxy; Company Web Site; Other public sources.
Family Firm's Fraction of Sale by Industry	A binary variable; 1 indicates family trust or foundations are set up in the family firm. Source: Firm Proxy Statements.
	Calculated as the amount of sales by family firms in a particular industry divided by the total amount of sales in that industry; Source: Compustat.



Table 3 Descriptive statistics and correlation – Essay 1

	Mean	S.D.	1	2	3	4	5	6	7	8
1. Difference between ID and ED	0.061	0.518	1.000							
2. Ratio of ID to ED	-5.752	43.371	-0.183***	1.000						
3. Industry Adjusted ID	0.099	0.502	0.892***	-0.172***	1.000					
4. Industry Adjusted ED	0.039	0.106	-0.346***	0.068***	0.110***	1.000				
5. Family Firm	0.193	0.394	-0.022	0.035**	-0.050***	-0.050***	1.000			
6. Family Ownership	6.600	17.496	-0.017	0.032**	-0.041***	-0.044***	0.780***	1.000		
7. Lone Founder	0.079	0.269	0.009	-0.036**	0.009	-0.003	-0.135***	-0.105***	1.000	
8. Family CEO	0.114	0.318	-0.009	0.026*	-0.044***	-0.068***	0.684***	0.565***	-0.041***	1.000
9. Family Rep in the TMT	0.039	0.105	-0.007	0.019	-0.036**	-0.057***	0.712***	0.609***	-0.059***	0.821***
10. Family Chair	0.152	0.359	-0.019	0.032**	-0.049***	-0.057***	0.800***	0.665***	-0.043***	0.807***
11. Family Rep on the Board	0.040	0.093	-0.017	0.029*	-0.042***	-0.048***	0.845***	0.726***	-0.080***	0.717***
12. Founding Generation Family	0.096	0.294	-0.006	0.010	-0.028*	-0.043***	0.596***	0.428***	0.005	0.600***
13. Family CEO Duality	0.107	0.309	-0.009	0.028*	-0.043***	-0.067***	0.673***	0.555***	-0.060***	0.941***
14. Nonfamily Block Holder	4.148	9.726	-0.030*	0.040***	-0.050***	-0.035**	0.588***	0.311***	-0.048***	0.443***
15. Family Trust Holdings	0.176	0.381	-0.019	0.032**	-0.044***	-0.047***	0.903***	0.751***	-0.059***	0.613***
16. Firm Age	50.805	40.302	-0.068***	0.075***	-0.102***	-0.056***	0.061***	0.070***	-0.191***	-0.048***
17. Firm Size (ln)	1.493	1.710	-0.161***	0.142***	-0.203***	-0.057***	-0.068***	-0.026*	-0.229***	-0.144***
18. Debt to Equity Ratio	0.269	0.413	-0.108***	0.050***	-0.075***	0.091***	0.020	0.032**	-0.065***	0.022
19. Industry Adjusted Tobin's Q	0.392	1.512	0.126***	-0.067***	0.126***	-0.023*	-0.030*	-0.020	0.082***	-0.022
20. Internationalization	0.047	0.329	-0.008	0.013	-0.022	-0.028*	-0.015	0.013	-0.091***	-0.048***
21. Advertising	0.012	0.028	-0.012	0.013	-0.027*	-0.029*	0.166***	0.254***	-0.024*	0.148***
22. Investment	0.107	0.084	0.120***	-0.065***	0.128***	-0.009	0.002	0.003	0.154***	0.057***
23. FFs' Sale by Industry	0.145	0.136	-0.015	0.018	-0.035**	-0.038**	0.197***	0.181***	0.034**	0.135***

Table 3 (continued)

	9	10	11	12	13	14
9. Family Rep in the TMT	1.000					
10. Family Chair	0.806***	1.000				
11. Family Rep on the Board	0.785***	0.818***	1.000			
12. Founding Generation Family	0.667***	0.664***	0.633***	1.000		
13. Family CEO Duality	0.799***	0.811***	0.703***	0.607***	1.000	
14. Nonfamily Block Holder	0.401***	0.485***	0.485***	0.421***	0.422***	1.000
15. Family Trust Holdings	0.645***	0.748***	0.811***	0.575***	0.602***	0.504***
16. Firm Age	-0.054***	0.006	0.047***	-0.173***	-0.043***	0.031**
17. Firm Size (ln)	-0.150***	-0.102***	-0.092***	-0.146***	-0.140***	-0.117***
18. Debt to Equity Ratio	0.012	0.020	0.017	-0.018	0.026*	0.017
19. Industry Adjusted Tobin's Q	-0.011	-0.040***	-0.028*	0.042***	-0.016	-0.056***
20. Internationalization	-0.039***	-0.005	0.006	-0.023*	-0.047***	-0.042***
21. Advertising	0.174***	0.177***	0.167***	0.047***	0.135***	0.053***
22. Investment	0.057***	0.032**	0.030*	0.072***	0.056***	-0.011
23. FFs' Sale by Industry	0.117***	0.173***	0.173***	0.142***	0.141***	0.103***

	15	16	17	18	19	20	21	22	23
15. Family Trust	1.000								
16. Firm Age	0.062***	1.000							
17. Firm Size (ln)	-0.055***	0.406***	1.000						
18. Debt to Equity	-0.003	0.061***	0.193***	1.000					
19. Tobin's Q	-0.017	-0.135***	-0.158***	-0.283***	1.000				
20. Internationalization	0.004	0.076***	0.218***	0.011	-0.039***	1.000			
21. Advertising	0.191***	0.099***	0.065***	-0.059***	0.102***	0.078***	1.000		
22. Investment	0.013	-0.260***	-0.251***	-0.155***	0.351***	-0.016	0.105***	1.000	
23. FFs' Sale by	0.203***	0.039***	0.050***	0.107***	-0.002	-0.002	0.085***	0.093***	1.000

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

Table 4 Fixed-effect longitudinal regression analysis: H1

	Model 1	Model 2
Dependent Variable	Family Firm	Difference between ID and ED
Sample	Family Firms and Nonfamily Firms	Family Firms and Nonfamily Firms
Family Business (H1)		<b>0.106</b>
Lone Founder Firm		0.029
Nonfamily Block Holder Ownership	0.044***	-0.001
Firm Age	0.001	-0.0002
Firm Size (log value of employees)	-0.059**	0.008
Debt to Equity Ratio	0.202**	0.047***
Industry Adjusted Tobin's Q	-0.058**	-0.010
Advertising	0.540	-0.989*
Investment	-0.091	0.087
Internationalization	-0.133	-0.003
Family Trust Holding	3.127***	
Family Sales Ratio by Industry	0.664***	
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.021	0.592***
Inverse Mills Ratio		0.044
Constant	-2.285***	-0.113
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	9,491	9,490
Number of Firms	573	573
Absolute Log Likelihood	1174.123***	
Within R-Square		0.417
F-statistics		19.11***
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 5% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 1

Table 5 Fixed-effect longitudinal regression analysis: H2, H3, and H4

	Model 3	Model 4	Model 5
Dependent Variable	Difference between ID and ED	Difference between ID and ED	Difference between ID and ED
Sample	Family Firms	Family Firms	Family Firms
Family Ownership (H2)	<b>0.0001</b>		
Family CEO (H3)		<b>-0.020</b>	
Family Representation in the TMT (H4)			<b>-0.029</b>
Nonfamily Blockholder Ownership	-0.002	-0.002	-0.002
Family CEO Duality	-0.015		-0.014
Firm Age	0.012	0.012	0.011
Firm Size (log value of employees)	0.004	0.004	0.003
Debt to Equity Ratio	0.067***	0.067***	0.067***
Industry Adjusted Tobin's Q	-0.004	-0.004	-0.004
Advertising	-0.007	0.006	0.028
Investment	0.060	0.057	0.059
Internationalization	-0.008	-0.008	-0.009
Industry Adjusted Prior Diversification Experience	0.707***	0.706***	0.707**
Inverse Mills Ratio	-0.007	-0.009	-0.008
Constant	-0.583	-0.574	-0.545
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,811	1,811	1,811
Number of Firms	136	136	136
Within R-Square	0.568	0.568	0.568
F-statistics	65.54***	64.26***	64.98***
Power (1- $\beta$ error prob)	1.00	1.00	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 5% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4.  $\dagger p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 1

Table 6 Fixed-effect longitudinal regression analysis: H5, H6, and H7

	Model 6	Model 7	Model 8
Dependent Variable	Difference between ID and ED	Difference between ID and ED	Difference between ID and ED
Sample	Family Firms	Family Firms	Family Firms
Family Board Chair (H5)	<b>0.027</b>		
Family Representation on the Board (H6)		<b>-0.112</b>	
Founding Generation Family (H7)			<b>0.026</b>
Nonfamily Blockholder Ownership	-0.002	-0.002	-0.002
Family CEO Duality		-0.016	-0.016
Firm Age	0.014	0.010	0.016
Firm Size (log value of employees)	0.004	0.001	0.003
Debt to Equity Ratio	0.067***	0.066***	0.066***
Industry Adjusted Tobin's Q	-0.003	-0.004	-0.004
Advertising	0.017	0.015	-0.005
Investment	0.055	0.062	0.063
Internationalization	-0.009	-0.007	-0.008
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.709***	0.707**	0.707**
Inverse Mills Ratio	-0.009	-0.009	-0.007
Constant	-0.713	-0.439	-0.784
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,811	1,811	1,811
Number of Firms	136	136	136
Within R-Square	0.568	0.568	0.568
F-statistics	61.86***	65.44***	73.48***
Power (1- $\beta$ error prob)	1.00	1.00	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 5% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 1

Table 7 Fixed-effect longitudinal regression analysis testing all the heterogeneity hypotheses simultaneously

	Model 9
Dependent Variable	Difference between ID and ED
Sample	Family Firms
Family Ownership (H2)	<b>0.0002</b>
Family CEO (H3)	<b>-0.016</b>
Family Representation in the TMT (H4)	<b>-0.031</b>
Family Board Chair (H5)	<b>0.045</b>
Family Representation on the Board (H6)	<b>-0.143</b>
Founding Generation Family (H7)	<b>0.034</b>
Nonfamily Blockholder Ownership	-0.002
Family CEO Duality	-0.012
Firm Age	0.014
Firm Size (log value of employees)	0.003
Debt to Equity Ratio	0.065***
Industry Adjusted Tobin's Q	-0.003
Advertising	0.004
Investment	0.064
Internationalization	-0.007
Industry Adjusted Prior Diversification Experience	0.706***
Inverse Mills Ratio	-0.007
Constant	-0.675
Industry Dummies	Yes
Year Dummies	Yes
Number of Observations	1,811
Number of Firms	136
Within R-Square	0.569
F-statistics	70.90***
Power (1- $\beta$ error prob)	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 5% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 1

Table 8 Fixed-effect longitudinal regression analysis: robustness check on H1

	Model 10	Model 11
Dependent Variable	Family Firm	Ratio of ID to ED
Sample	Family Firms and Nonfamily Firms	Family Firms and Nonfamily Firms
Family Business (H1)		<b>0.760</b>
Lone Founder Firm		-2.709
Nonfamily Block Holder Ownership	0.048***	-0.024
Firm Age	0.001	1.327*
Firm Size (log value of employees)	-0.041	1.247
Debt to Equity Ratio	0.191*	-0.263
Industry Adjusted Tobin's Q	-0.039	2.865**
Advertising	1.812	-179.048
Investment	-0.205	-14.486
Internationalization	-0.146	7.604*
Family Trust Holding	3.081***	
Family Sales Ratio by Industry	0.826***	
Industry Adjusted Prior Diversification Experience (Ratio Measure)	0.0005	0.021***
Inverse Mills Ratio		0.423
Constant	-2.367***	-67.526*
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	6,864	5,940
Number of Firms	533	533
Absolute Log Likelihood	830.831***	
Within R-Square		0.031
F-statistics		1.84**
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *ratio* between ID and ED and family firms are measured using 5% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 10

Table 9 Fixed-effect longitudinal regression analysis: robustness check on H2, H3, and H4

	Model 12	Model 13	Model 14
Dependent Variable	Ratio of ID to ED	Ratio of ID to ED	Ratio of ID to ED
Sample	Family Firms	Family Firms	Family Firms
Family Ownership (H2)	<b>0.039</b>		
Family CEO (H3)		<b>0.960</b>	
Family Representation in the TMT (H4)			<b>7.038</b>
Nonfamily Blockholder Ownership	0.079	0.073	0.069
Family CEO Duality	2.625		2.007
Firm Age	3.625	3.553	3.782
Firm Size (log value of employees)	-1.128	-1.403	-1.367
Debt to Equity Ratio	9.743*	9.817*	9.911*
Industry Adjusted Tobin's Q	3.480***	3.472**	3.463***
Advertising	-171.787 <sup>†</sup>	-172.787 <sup>†</sup>	-175.490 <sup>†</sup>
Investment	-35.209	-35.395	-35.633
Internationalization	3.539	3.343	3.379
Industry Adjusted Prior Diversification Experience (Ratio Measure)	-0.026	-0.025	-0.025
Inverse Mills Ratio	1.875	1.721	1.699
Constant	-179.111	-172.658	-186.052
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,055	1,055	1,055
Number of Firms	118	118	118
Within R-Square	0.034	0.033	0.034
F-statistics	1.78*	1.89**	1.88*
Power (1- $\beta$ error prob)	0.88	0.88	0.88

Notes:

1. DV is measured using the *ratio* between ID and ED and family firms are measured using 5% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 10



Table 10 Fixed-effect longitudinal regression analysis: robustness check on H5, H6, and H7

	Model 15	Model 16	Model 17
Dependent Variable	Ratio of ID to ED	Ratio of ID to ED	Ratio of ID to ED
Sample	Family Firms	Family Firms	Family Firms
Family Board Chair (H5)	<b>3.719</b>		
Family Representation on the Board (H6)		<b>10.140</b>	
Founding Generation Family (H7)			<b>-10.665*</b>
Nonfamily Blockholder Ownership	0.072	0.072	0.061
Family CEO Duality	1.121	2.507	3.077
Firm Age	3.568	3.781	1.395
Firm Size (log value of employees)	-1.305	-1.226	-1.511
Debt to Equity Ratio	9.825*	9.799*	10.298*
Industry Adjusted Tobin's Q	3.487***	3.470***	3.461***
Advertising	-170.017 <sup>†</sup>	-171.824 <sup>†</sup>	-162.827
Investment	-36.002	-35.817	-39.114
Internationalization	3.348	3.148	3.446
Industry Adjusted Prior Diversification Experience (Ratio Measure)	-0.025	-0.026	-0.025
Inverse Mills Ratio	1.781	1.869	1.356
Constant	-176.101	-187.298	-61.618
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,055	1,055	1,055
Number of Firms	118	118	118
Within R-Square	0.034	0.034	0.036
F-statistics	1.83*	1.92*	1.86*
Power (1- $\beta$ error prob)	0.88	0.88	0.88

Notes:

1. DV is measured using the *ratio* between ID and ED and family firms are measured using 5% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 10

Table 11 Fixed-effect longitudinal regression analysis: robustness check testing all the heterogeneity hypotheses simultaneously

	Model 18
Dependent Variable	Ratio of ID to ED
Sample	Family Firms
Family Ownership (H2)	<b>0.043</b>
Family CEO (H3)	<b>-2.797</b>
Family Representation in the TMT (H4)	<b>14.010</b>
Family Board Chair (H5)	<b>2.382</b>
Family Representation on the Board (H6)	<b>9.990</b>
Founding Generation Family (H7)	<b>-12.629*</b>
Nonfamily Blockholder Ownership	0.068
Family CEO Duality	3.027
Firm Age	0.998
Firm Size (log value of employees)	-1.310
Debt to Equity Ratio	10.528*
Industry Adjusted Tobin's Q	3.445***
Advertising	-178.136†
Investment	-39.392
Internationalization	3.486
Industry Adjusted Prior Diversification Experience (Ratio Measure)	-0.027
Inverse Mills Ratio	1.926
Constant	-48.586
Industry Dummies	Yes
Year Dummies	Yes
Number of Observations	1,055
Number of Firms	118
Within R-Square	0.037
F-statistics	2.04**
Power (1- $\beta$ error prob)	0.90

Notes:

1. DV is measured using the *ratio* between ID and ED and family firms are measured using 5% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 10

Table 12 Fixed-effect longitudinal regression analysis: robustness check on H1

	Model 19	Model 20
Dependent Variable	Family Firm	Difference between ID and ED
Sample	Family Firms and Nonfamily Firms	Family Firms and Nonfamily Firms
Family Business (H1)		<b>0.025</b>
Lone Founder Firm		0.015
Nonfamily Block Holder Ownership	0.021***	-0.001†
Firm Age	0.001	-0.0003
Firm Size (log value of employees)	-0.062***	0.010
Debt to Equity Ratio	0.153**	0.040***
Industry Adjusted Tobin's Q	-0.039*	-0.008
Advertising	2.834***	-1.009*
Investment	-0.572†	0.091
Internationalization	-0.086	0.001
Family Trust Holding	2.690***	
Family Sales Ratio by Industry	0.675***	
Industry Adjusted Prior Diversification Experience (Difference Measure)	-0.008	0.593***
Inverse Mills Ratio		-0.001
Constant	-2.202***	0.008
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	9,491	9,490
Number of Firms	573	573
Absolute Log Likelihood	1491.143***	
Within R-Square		0.416
F-statistics		19.54***
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 10% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 19

Table 13 Fixed-effect longitudinal regression analysis: robustness check on H2, H3, and H4

	Model 21	Model 22	Model 23
Dependent Variable	Difference between ID and ED	Difference between ID and ED	Difference between ID and ED
Sample	Family Firms	Family Firms	Family Firms
Family Ownership (H2)	<b>0.0001</b>		
Family CEO (H3)		<b>-0.026<sup>†</sup></b>	
Family Representation in the TMT (H4)			<b>-0.038</b>
Nonfamily Blockholder Ownership	-0.002	-0.002	-0.002
Family CEO Duality	-0.020		-0.018
Firm Age	0.007	0.007	0.007
Firm Size (log value of employees)	0.013	0.013	0.012
Debt to Equity Ratio	0.077***	0.077***	0.077***
Industry Adjusted Tobin's Q	-0.007	-0.007	-0.007
Advertising	-0.027	-0.027	0.006
Investment	0.201*	0.201*	0.202*
Internationalization	-0.008	-0.009	-0.009
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.717***	0.716***	0.717***
Inverse Mills Ratio	-0.031	-0.036	-0.032
Constant	-0.373	-0.326	-0.322
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,536	1,536	1,536
Number of Firms	129	129	129
Within R-Square	0.551	0.551	0.551
F-statistics	98.65***	103.94***	99.23***
Power (1- $\beta$ error prob)	1.00	1.00	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 10% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 19

Table 14 Fixed-effect longitudinal regression analysis: robustness check on H5, H6, and H7

	Model 24	Model 25	Model 26
Dependent Variable	Difference between ID and ED	Difference between ID and ED	Difference between ID and ED
Sample	Family Firms	Family Firms	Family Firms
Family Board Chair (H5)	<b>0.029</b>		
Family Representation on the Board (H6)		<b>-0.135</b>	
Founding Generation Family (H7)			<b>0.046</b>
Nonfamily Blockholder Ownership	-0.002	-0.002	-0.002
Family CEO Duality		-0.020	-0.020
Firm Age	0.009	0.005	0.006
Firm Size (log value of employees)	0.014	0.011	0.013
Debt to Equity Ratio	0.078***	0.077***	0.077***
Industry Adjusted Tobin's Q	-0.007	-0.007	-0.007
Advertising	0.007	-0.002	-0.037
Investment	0.195*	0.206*	0.210*
Internationalization	-0.009	-0.008	-0.009
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.720***	0.716***	0.718***
Inverse Mills Ratio	-0.035	-0.030	-0.031
Constant	-0.478	-0.212	-0.355
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,536	1,536	1,536
Number of Firms	129	129	129
Within R-Square	0.551	0.552	0.552
F-statistics	102.88***	103.42***	117.53***
Power (1- $\beta$ error prob)	1.00	1.00	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 10% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4.  $\dagger p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 19

Table 15 Fixed-effect longitudinal regression analysis: robustness check testing all the heterogeneity hypotheses simultaneously

	Model 27
Dependent Variable	Difference between ID and ED
Sample	Family Firms
Family Ownership (H2)	<b>0.0001</b>
Family CEO (H3)	<b>-0.020</b>
Family Representation in the TMT (H4)	<b>-0.040</b>
Family Board Chair (H5)	<b>0.051</b>
Family Representation on the Board (H6)	<b>-0.169</b>
Founding Generation Family (H7)	<b>0.054</b>
Nonfamily Blockholder Ownership	-0.002
Family CEO Duality	-0.014
Firm Age	0.005
Firm Size (log value of employees)	0.013
Debt to Equity Ratio	0.076 <sup>***</sup>
Industry Adjusted Tobin's Q	-0.007
Advertising	0.004
Investment	0.210*
Internationalization	-0.008
Industry Adjusted Prior Diversification Experience	0.716 <sup>***</sup>
Inverse Mills Ratio	-0.028
Constant	-0.254
Industry Dummies	Yes
Year Dummies	Yes
Number of Observations	1,536
Number of Firms	129
Within R-Square	0.553
F-statistics	110.08 <sup>***</sup>
Power (1- $\beta$ error prob)	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 10% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 19

Table 16 Fixed-effect longitudinal regression analysis: robustness check on H1

	Model 28	Model 29
Dependent Variable	Family Firm	Difference between ID and ED
Sample	Family Firms and Nonfamily Firms	Family Firms and Nonfamily Firms
Family Business (H1)		<b>0.026</b>
Lone Founder Firm		0.014
Nonfamily Block Holder Ownership	-0.006**	-0.001
Firm Age	-0.0004	-0.0003
Firm Size (log value of employees)	-0.057**	0.010
Debt to Equity Ratio	0.094 <sup>†</sup>	0.040***
Industry Adjusted Tobin's Q	-0.014**	-0.008
Advertising	4.224***	-1.035*
Investment	-0.520	0.093
Internationalization	-0.204*	0.001
Family Trust Holding	2.549***	
Family Sales Ratio by Industry	0.805***	
Industry Adjusted Prior Diversification Experience (Difference Measure)	-0.029	0.593***
Inverse Mills Ratio		-0.005
Constant	-2.328***	0.018
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	9,491	9,490
Number of Firms	573	573
Absolute Log Likelihood	1560.069***	
Within R-Square		0.416
F-statistics		19.45***
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 20% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 28

Table 17 Fixed-effect longitudinal regression analysis: robustness check on H2, H3, and H4

	Model 30	Model 31	Model 32
Dependent Variable	Difference between ID and ED	Difference between ID and ED	Difference between ID and ED
Sample	Family Firms	Family Firms	Family Firms
Family Ownership (H2)	<b>0.0004</b>		
Family CEO (H3)		<b>-0.007</b>	
Family Representation in the TMT (H4)			<b>0.022</b>
Nonfamily Blockholder Ownership	-0.001	-0.001	-0.001
Family CEO Duality	-0.001		-0.004
Firm Age	-0.031	-0.019	-0.032
Firm Size (log value of employees)	0.018	0.013	0.016
Debt to Equity Ratio	0.090***	0.088***	0.091***
Industry Adjusted Tobin's Q	-0.001	0.001	-0.001
Advertising	0.048	0.125	0.048
Investment	0.184 <sup>†</sup>	0.057	0.187 <sup>†</sup>
Internationalization	-0.007	-0.005	-0.008
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.786***	0.784***	0.786***
Inverse Mills Ratio	-0.011	-0.004	-0.017 <sup>†</sup>
Constant	1.426	0.886	1.534
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,096	1,096	1,096
Number of Firms	105	105	105
Within R-Square	0.651	0.650	0.651
F-statistics	124.16***	101.87***	126.65***
Power (1- $\beta$ error prob)	1.00	1.00	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 20% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 28



Table 18 Fixed-effect longitudinal regression analysis: robustness check on H5, H6, and H7

	Model 33	Model 34	Model 35
Dependent Variable	Difference between ID and ED	Difference between ID and ED	Difference between ID and ED
Sample	Family Firms	Family Firms	Family Firms
Family Board Chair (H5)	<b>0.041</b>		
Family Representation on the Board (H6)		<b>-0.096</b>	
Founding Generation Family (H7)			<b>0.070</b>
Nonfamily Blockholder Ownership	-0.001	-0.001	-0.001
Family CEO Duality		-0.003	-0.002
Firm Age	-0.031	-0.035	-0.033
Firm Size (log value of employees)	0.018	0.015	0.015
Debt to Equity Ratio	0.091***	0.090***	0.088***
Industry Adjusted Tobin's Q	-0.001	-0.001	-0.001
Advertising	0.100	0.072	0.009
Investment	0.184 <sup>†</sup>	0.189 <sup>†</sup>	0.194 <sup>†</sup>
Internationalization	-0.009	-0.008	-0.009
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.787***	0.786***	0.788***
Inverse Mills Ratio	-0.016 <sup>†</sup>	-0.016	-0.016 <sup>†</sup>
Constant	1.442	1.678	1.537
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,096	1,096	1,096
Number of Firms	105	105	105
Within R-Square	0.651	0.651	0.651
F-statistics	112.77***	142.12***	139.96***
Power (1- $\beta$ error prob)	1.00	1.00	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 20% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 28

Table 19 Fixed-effect longitudinal regression analysis: robustness check testing all the heterogeneity hypotheses simultaneously

	Model 36
Dependent Variable	Difference between ID and ED
Sample	Family Firms
Family Ownership (H2)	<b>0.0004</b>
Family CEO (H3)	<b>0.001</b>
Family Representation in the TMT (H4)	<b>0.001</b>
Family Board Chair (H5)	<b>0.062</b>
Family Representation on the Board (H6)	<b>-0.144</b>
Founding Generation Family (H7)	<b>0.076</b>
Nonfamily Blockholder Ownership	-0.001
Family CEO Duality	-0.018
Firm Age	-0.034
Firm Size (log value of employees)	0.017
Debt to Equity Ratio	0.087**
Industry Adjusted Tobin's Q	-0.0005
Advertising	0.039
Investment	0.192 <sup>†</sup>
Internationalization	-0.008
Industry Adjusted Prior Diversification Experience	0.787***
Inverse Mills Ratio	-0.010
Constant	1.543
Industry Dummies	Yes
Year Dummies	Yes
Number of Observations	1,096
Number of Firms	105
Within R-Square	0.653
F-statistics	129.36***
Power (1- $\beta$ error prob)	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 20% family ownership threshold
2. ID refers to *internal diversification*; ED refers to *external diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 28

Table 20 Fixed-effect longitudinal regression analysis: robustness check on H1

	Model 37	Model 38
Dependent Variable	Family Firm	Difference between ID and ED
Sample	Family Firms and Nonfamily Firms	Family Firms and Nonfamily Firms
Family Business (H1)		<b>0.150</b>
Lone Founder Firm		0.030
Nonfamily Block Holder Ownership	0.047***	-0.002
Firm Age	0.001	-0.003
Firm Size (log value of employees)	-0.077***	0.006
Debt to Equity Ratio	0.277***	0.058*
Industry Adjusted Tobin's Q	-0.038 <sup>†</sup>	-0.015 <sup>†</sup>
Advertising	1.858	-1.813*
Investment	0.168	0.101
Internationalization	-0.103	-0.001
Family Trust Holding	3.182***	
Family Sales Ratio by Industry	0.234***	
Industry Adjusted Prior Diversification Experience (Difference Measure)	-0.028	0.610***
Inverse Mills Ratio		0.057
Constant	-2.267***	-0.029
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	7,539	7,538
Number of Firms	493	493
Absolute Log Likelihood	922.651***	
Within R-Square		0.449
F-statistics		20.91***
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 5% family ownership threshold
2. Using a sample with observations that R&D and acquisition costs are missing and deleted
3. ID refers to *internal diversification*; ED refers to *external diversification*
4. Unstandardized estimation coefficients are reported
5. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
6. Mills Ratio calculated by Model 37

Table 21 Fixed-effect longitudinal regression analysis: robustness check on H2, H3, and H4

	Model 39	Model 40	Model 41
Dependent Variable	Difference between ID and ED	Difference between ID and ED	Difference between ID and ED
Sample	Family Firms	Family Firms	Family Firms
Family Ownership (H2)	<b>-0.0001</b>		
Family CEO (H3)		<b>-0.040</b>	
Family Representation in the TMT (H4)			<b>-0.046</b>
Nonfamily Blockholder Ownership	-0.002	-0.002	-0.002
Family CEO Duality	-0.028		-0.025
Firm Age	0.072	0.072	0.071
Firm Size (log value of employees)	-0.018	-0.016	-0.017
Debt to Equity Ratio	0.129**	0.130**	0.129**
Industry Adjusted Tobin's Q	-0.002	-0.003	-0.002
Advertising	-0.246	-0.261	-0.202
Investment	0.189	0.184	0.188
Internationalization	-0.019	-0.019	-0.019
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.680***	0.679***	0.680***
Inverse Mills Ratio	-0.017	-0.020	-0.016
Constant	-3.407	-3.427	-3.363
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,317	1,317	1,317
Number of Firms	108	108	108
Within R-Square	0.530	0.531	0.530
F-statistics	61.76***	57.26***	64.01***
Power (1- $\beta$ error prob)	1.00	1.00	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 5% family ownership threshold
2. Using a sample with observations that R&D and acquisition costs are missing and deleted
3. ID refers to *internal diversification*; ED refers to *external diversification*
4. Unstandardized estimation coefficients are reported
5. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
6. Mills Ratio calculated by Model 37

Table 22 Fixed-effect longitudinal regression analysis: robustness check on H5, H6, and H7

	Model 42	Model 43	Model 44
Dependent Variable	Difference between ID and ED	Difference between ID and ED	Difference between ID and ED
Sample	Family Firms	Family Firms	Family Firms
Family Board Chair (H5)	<b>0.073</b>		
Family Representation on the Board (H6)		<b>-0.178</b>	
Founding Generation Family (H7)			<b>0.093</b>
Nonfamily Blockholder Ownership	-0.002	-0.002	-0.002
Family CEO Duality		-0.027	-0.034
Firm Age	0.077 <sup>†</sup>	0.067	0.088 <sup>†</sup>
Firm Size (log value of employees)	-0.015	-0.022	-0.020
Debt to Equity Ratio	0.129**	0.128**	0.127**
Industry Adjusted Tobin's Q	-0.002	-0.003	-0.003
Advertising	-0.138	-0.227	-0.299
Investment	0.176	0.188	0.197
Internationalization	-0.019	-0.016	-0.020
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.683***	0.680***	0.681***
Inverse Mills Ratio	-0.020	-0.017	-0.012
Constant	-3.752 <sup>†</sup>	-3.126	-4.235 <sup>†</sup>
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,317	1,317	1,317
Number of Firms	108	108	108
Within R-Square	0.531	0.531	0.531
F-statistics	62.45***	60.70***	64.12***
Power (1- $\beta$ error prob)	1.00	1.00	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 5% family ownership threshold
2. Using a sample with observations that R&D and acquisition costs are missing and deleted
3. ID refers to *internal diversification*; ED refers to *external diversification*
4. Unstandardized estimation coefficients are reported
5. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
6. Mills Ratio calculated by Model 37

Table 23 Fixed-effect longitudinal regression analysis: robustness check testing all the heterogeneity hypotheses simultaneously

	Model 45
Dependent Variable	Difference between ID and ED
Sample	Family Firms
Family Ownership (H2)	<b>-0.0001</b>
Family CEO (H3)	<b>-0.014</b>
Family Representation in the TMT (H4)	<b>-0.078</b>
Family Board Chair (H5)	<b>0.118</b>
Family Representation on the Board (H6)	<b>-0.263</b>
Founding Generation Family (H7)	<b>0.116</b>
Nonfamily Blockholder Ownership	-0.002
Family CEO Duality	-0.044
Firm Age	0.083
Firm Size (log value of employees)	-0.028
Debt to Equity Ratio	0.127**
Industry Adjusted Tobin's Q	-0.002
Advertising	-0.145
Investment	0.180
Internationalization	-0.021
Industry Adjusted Prior Diversification Experience	0.678***
Inverse Mills Ratio	-0.011
Constant	-3.976
Industry Dummies	Yes
Year Dummies	Yes
Number of Observations	1,317
Number of Firms	108
Within R-Square	0.533
F-statistics	63.31***
Power (1- $\beta$ error prob)	1.00

Notes:

1. DV is measured using the *difference* between ID and ED and family firms are measured using 5% family ownership threshold
2. Using a sample with observations that R&D and acquisition costs are missing and deleted
3. ID refers to *internal diversification*; ED refers to *external diversification*
4. Unstandardized estimation coefficients are reported
5. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
6. Mills Ratio calculated by Model 37

Table 24 Descriptive data of family firms and nonfamily firms

Variable	Family Firms				Nonfamily Firms			
	Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1. Difference between ID and ED	0.063	0.546	-0.632	4.155	0.06	0.51	-0.632	4.155
2. Ratio of ID to ED	-2.552	38.197	-307.28	117.961	-6.475	44.428	-307.28	117.961
3. Industry Adjusted ID	0.091	0.536	-0.066	4.151	0.101	0.494	-0.066	4.151
4. Industry Adjusted ED	0.029	0.081	-0.019	0.681	0.042	0.111	-0.019	0.681
5. Family Firm	1	0	1	1	0	0	0	0
6. Family Ownership	34.249	25.332	5	88.1	0	0	0	0
7. Lone Founder	0	0	0	0	0.097	0.296	0	1
8. Family CEO	0.566	0.496	0	1	0	0	0	0
9. Family Representation in the TMT	0.195	0.16	0	0.5	0	0	0	0
10. Family Chair	0.752	0.432	0	1	0	0	0	0
11. Family Representation on the Board	0.203	0.106	0	0.429	0	0	0	0
12. Founding Generation Family	0.461	0.499	0	1	0	0	0	0
13. Family CEO Duality	0.54	0.499	0	1	0	0	0	0
14. Nonfamily Block Holder	15.84	13.482	0	42.357	0	0	0	0
15. Family Trust Holdings	0.881	0.324	0	1	0	0	0	0
16. Firm Age	56.471	37.057	1	160	49.452	40.925	1	163
17. Firm Size (ln)	1.287	1.546	-2.865	5.05	1.542	1.743	-2.865	5.05
18. Debt to Equity Ratio	0.302	0.502	0	2.604	0.261	0.388	0	2.604
19. Industry Adjusted Tobin's Q	0.253	1.503	-1.45	8.483	0.425	1.512	-1.45	8.483
20. Internationalization	0.039	0.319	-0.632	1.162	0.049	0.331	-0.632	1.162
21. Advertising	0.021	0.04	0	0.153	0.009	0.024	0	0.153
22. Investment	0.105	0.081	0.013	0.489	0.108	0.084	0.013	0.489
23. FFs' Fraction of Sale by Industry	0.201	0.148	0.01	0.547	0.132	0.129	0	0.547

Table 25 Descriptive data of family firms with a family CEO and family firms without a family CEO

Variable	Family Firms with a Family CEO				Family Firms without a Family CEO			
	Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1. Difference between ID and ED	0.042	0.426	-0.632	4.155	0.09	0.671	-0.632	4.155
2. Ratio of ID to ED	-2.713	38.807	-307.28	117.961	-2.352	37.459	-307.28	117.961
3. Industry Adjusted ID	0.062	0.417	-0.066	4.151	0.128	0.657	-0.066	4.151
4. Industry Adjusted ED	0.021	0.069	-0.019	0.681	0.039	0.094	-0.019	0.681
5. Family Firm	1	0	1	1	1	0	1	1
6. Family Ownership	35.951	24.893	0	88.1	32.032	25.74	0	88.1
7. Lone Founder	0	0	0	0	0	0	0	0
8. Family CEO	1	0	1	1	0	0	0	0
9. Family Representation in the TMT	0.286	0.118	0	0.5	0.077	0.128	0	0.5
10. Family Chair	0.977	0.149	0	1	0.457	0.498	0	1
11. Family Representation on the Board	0.233	0.101	0	0.429	0.163	0.099	0	0.429
12. Founding Generation Family	0.578	0.494	0	1	0.308	0.462	0	1
13. Family CEO Duality	0.94	0.238	0	1	0.019	0.136	0	1
14. Nonfamily Block Holder	16.263	13.544	0	42.357	15.289	13.39	0	42.357
15. Family Trust Holdings	0.856	0.351	0	1	0.914	0.281	0	1
16. Firm Age	48.485	31.551	1	140	66.88	40.935	1	160
17. Firm Size (ln)	0.917	1.456	-2.865	5.05	1.77	1.526	-2.865	5.05
18. Debt to Equity Ratio	0.329	0.557	0	2.604	0.266	0.418	0	2.604
19. Industry Adjusted Tobin's Q	0.17	1.597	-1.45	8.483	0.362	1.365	-1.45	8.483
20. Internationalization	0.006	0.296	-0.632	1.162	0.081	0.341	-0.632	1.162
21. Advertising	0.019	0.037	0	0.153	0.023	0.042	0	0.153
22. Investment	0.111	0.089	0.013	0.489	0.097	0.068	0.013	0.489
23. FFs' Fraction of Sale by Industry	0.194	0.142	0.013	0.547	0.21	0.156	0.01	0.547



Table 26 Descriptive data of family firms with a family board chair and family firms without a family board chair

Variable	Family Firms with a Family Board Chair				Family Firms without a Family Board			
	Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1. Difference between ID and ED	0.05	0.502	-0.632	4.155	0.1	0.662	-0.632	4.155
2. Ratio of ID to ED	-2.513	39.206	-307.28	117.961	-2.657	35.376	-307.28	117.961
3. Industry Adjusted ID	0.075	0.492	-0.066	4.151	0.139	0.649	-0.066	4.151
4. Industry Adjusted ED	0.025	0.08	-0.019	0.681	0.039	0.084	-0.019	0.681
5. Family Firm	1	0	1	1	1	0	1	1
6. Family Ownership	36.613	25.697	0	88.1	27.098	22.772	0	88.1
7. Lone Founder	0	0	0	0	0	0	0	0
8. Family CEO	0.736	0.441	0	1	0.052	0.222	0	1
9. Family Representation in the TMT	0.246	0.141	0	0.5	0.041	0.107	0	0.5
10. Family Chair	1	0	1	1	0	0	0	0
11. Family Representation on the Board	0.226	0.098	0	0.429	0.13	0.097	0	0.417
12. Founding Generation Family	0.542	0.498	0	1	0.215	0.411	0	1
13. Family CEO Duality	0.713	0.452	0	1	0.017	0.128	0	1
14. Nonfamily Block Holder	15.384	13.328	0	42.357	17.219	13.862	0	42.357
15. Family Trust Holdings	0.873	0.333	0	1	0.907	0.291	0	1
16. Firm Age	53.654	34.503	1	160	64.992	42.813	1	148
17. Firm Size (ln)	1.166	1.577	-2.865	5.05	1.656	1.385	-2.865	5.05
18. Debt to Equity Ratio	0.323	0.546	0	2.604	0.24	0.327	0	2.604
19. Industry Adjusted Tobin's Q	0.161	1.493	-1.45	8.483	0.532	1.5	-1.45	8.483
20. Internationalization	0.041	0.319	-0.632	1.162	0.032	0.318	-0.632	1.162
21. Advertising	0.023	0.043	0	0.153	0.014	0.027	0	0.116
22. Investment	0.107	0.084	0.013	0.489	0.098	0.07	0.015	0.489
23. FFs' Fraction of Sale by Industry	0.198	0.141	0.01	0.547	0.21	0.169	0.011	0.547

Table 27 Descriptive data of family firms run by founding generation family members and family firms run by later generation family members

Variable	Family Firms Run by Founding Generation Family Members				Family Firms Run by Later Generation Family Members			
	Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1. Difference between ID and ED	0.113	0.658	-0.632	4.155	0.02	0.424	-0.632	4.155
2. Ratio of ID to ED	-4.886	44.078	-307.28	117.961	-0.633	32.483	-307.28	117.961
3. Industry Adjusted ID	0.138	0.648	-0.066	4.151	0.051	0.413	-0.066	4.151
4. Industry Adjusted ED	0.026	0.077	-0.019	0.681	0.031	0.084	-0.019	0.681
5. Family Firm	1	0	1	1	1	0	1	1
6. Family Ownership	31.882	22.447	0	88.1	36.274	27.41	0	88.1
7. Lone Founder	0	0	0	0	0	0	0	0
8. Family CEO	0.71	0.454	0	1	0.443	0.497	0	1
9. Family Representation in the TMT	0.263	0.148	0	0.5	0.136	0.146	0	0.5
10. Family Chair	0.884	0.32	0	1	0.638	0.481	0	1
11. Family Representation on the Board	0.229	0.101	0	0.429	0.18	0.106	0	0.429
12. Founding Generation Family	1	0	1	1	0	0	0	0
13. Family CEO Duality	0.689	0.463	0	1	0.413	0.493	0	1
14. Nonfamily Block Holder	17.377	13.042	0	42.357	14.525	13.718	0	42.357
15. Family Trust Holdings	0.866	0.341	0	1	0.894	0.308	0	1
16. Firm Age	30.423	18.563	1	87	78.741	34.304	1	160
17. Firm Size (ln)	0.782	1.537	-2.865	4.394	1.719	1.417	-2.865	5.05
18. Debt to Equity Ratio	0.276	0.545	0	2.604	0.324	0.461	0	2.604
19. Industry Adjusted Tobin's Q	0.41	1.717	-1.45	8.483	0.119	1.278	-1.45	8.483
20. Internationalization	0.003	0.293	-0.632	1.162	0.069	0.336	-0.632	1.162
21. Advertising	0.017	0.034	0	0.153	0.024	0.044	0	0.153
22. Investment	0.119	0.094	0.013	0.489	0.092	0.065	0.013	0.489
23. FFs' Fraction of Sale by Industry	0.209	0.141	0.01	0.547	0.194	0.154	0.02	0.547

Figure 1 Theoretical model of hypothesized relationships – Essay 1

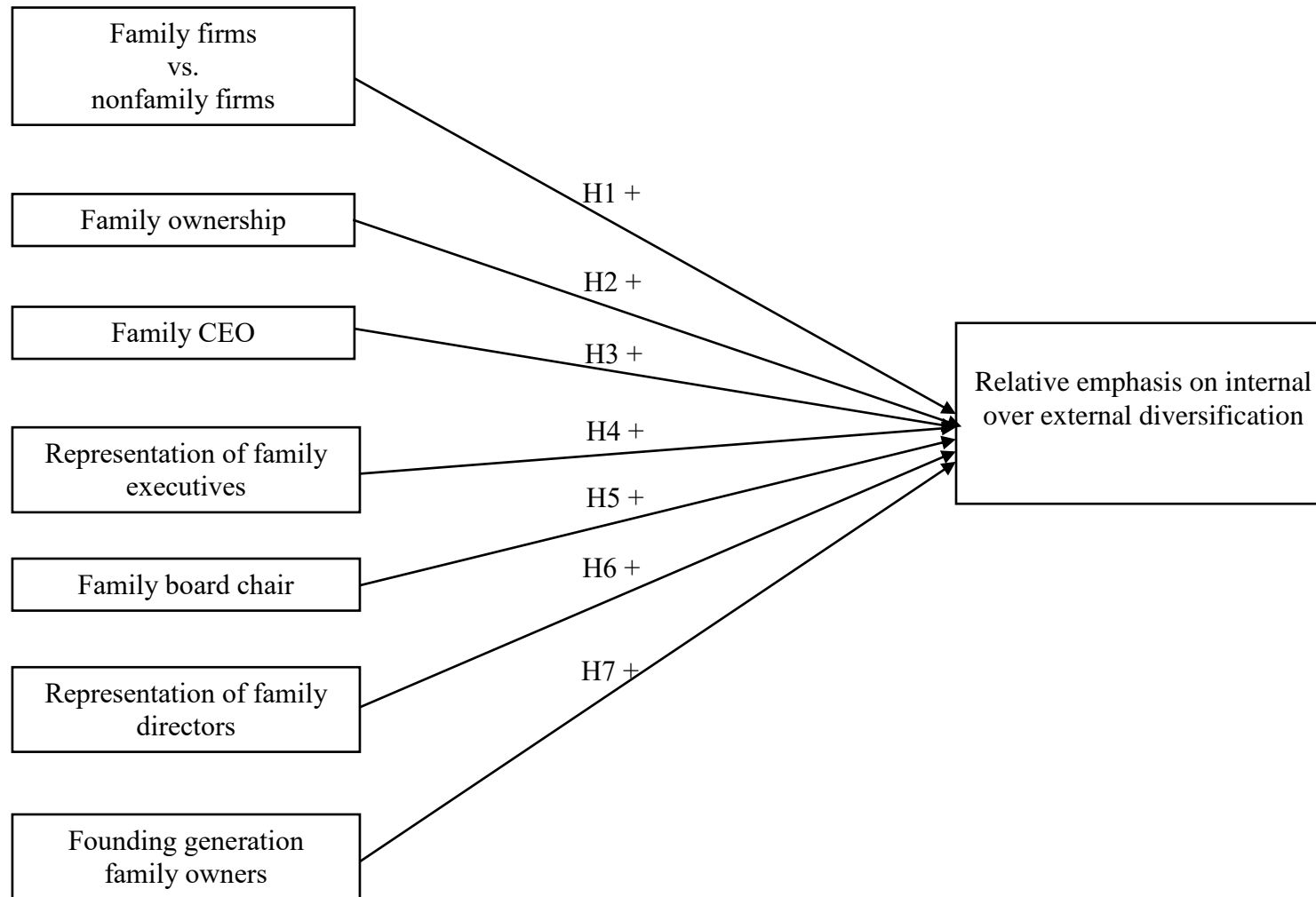
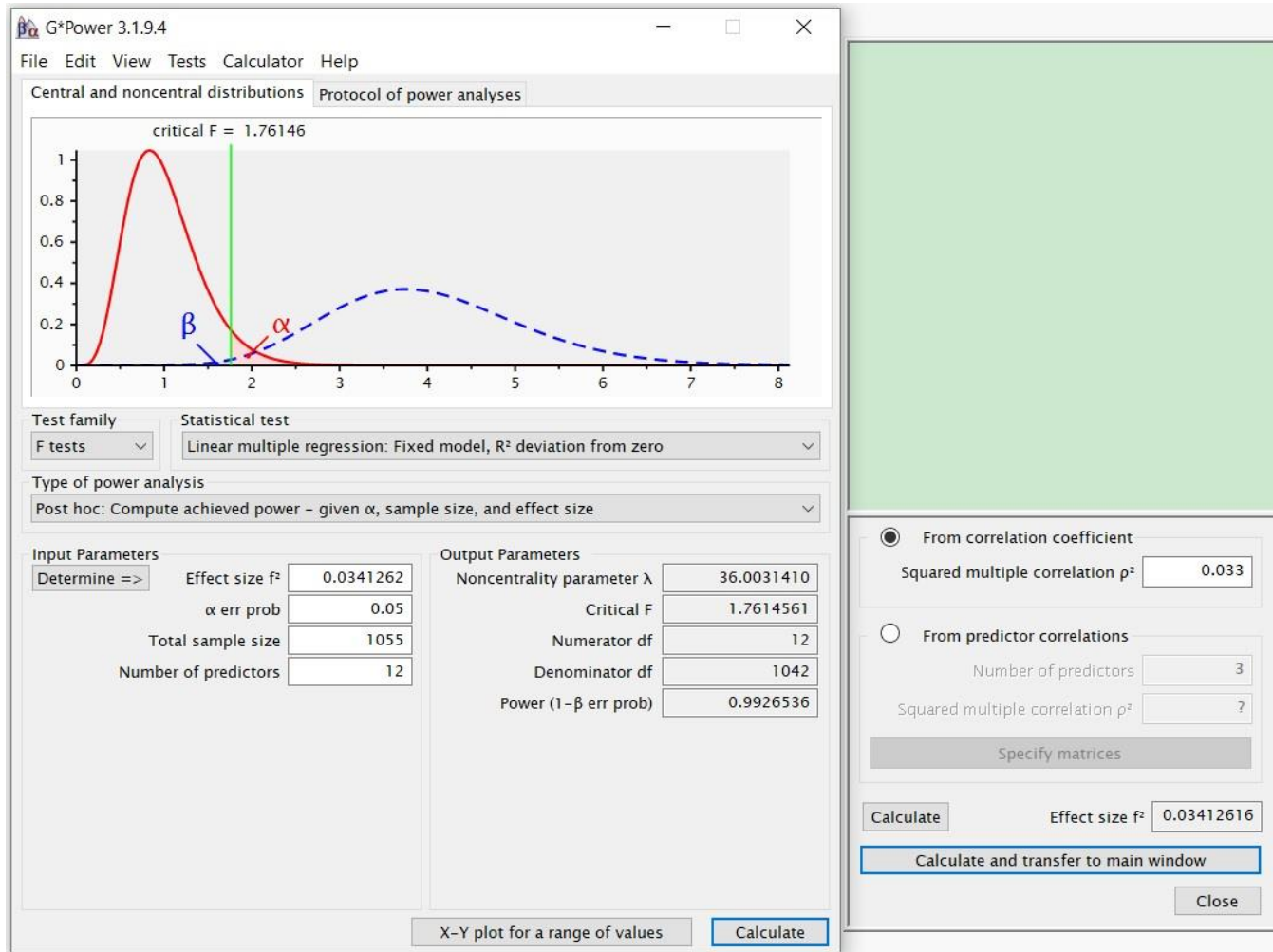


Figure 2 The main window of G\*Power



## CHAPTER III

### ESSAY 2: AN INVESTIGATION OF PRODUCT AND INTERNATIONAL DIVERSIFICATION IN FAMILY FIRMS

#### **Introduction**

Product and international diversification are two means that firms can use to expand the scope of their activities (Agarwal & Gort, 2002; Andrews, 1971; Ansoff, 1965; Cottrell & Nault, 2004; Kim & Kogut, 1996; Mackey, Barney, & Dotson, 2017; Rawley & Simcoe, 2010; Tippmann, Scott, & Parker, 2017). In the family business literature, family firms are found to be less likely to engage in product diversification than nonfamily firms (Anderson & Reeb, 2003a; Gomez-Mejia, Makri, & Kintana, 2010)<sup>26</sup>. In the meantime, research also shows that family firms have lower levels of international diversification than their nonfamily counterparts (Fang, Kotlar, Memili, Chrisman, & De Massis, 2018; Fernández & Nieto, 2005; Gallo, & Pont, 1996; Gomez-Mejia et al., 2010; Pukall & Calabro, 2014). Although family firms are more reluctant in investing in product and international diversification than nonfamily firms, studies highlight that family firms do, indeed, engage in both product and international diversification albeit at a potentially lesser scale.

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<sup>26</sup> Family firms are defined by a family's involvement in a firm, which allows it to pursue family-centered goals and utilize family-based resources in its strategic initiatives (Bennedsen, Pérez-González, & Wolfenzon, 2010; Chua, Chrisman, & Sharma, 1999).

Several studies indicate that family firms represent over 33% of large publicly listed US firms (Anderson & Reeb, 2003b; Villalonga & Amit, 2006; Villalonga, Amit, Trujillo, & Guzmán, 2015) and represent 30% of the 20 largest publicly traded firms in the 27 richest economies in the world (La Porta, Lopez-De-Silanes, & Shleifer, 1999). These studies suggest that like nonfamily firms, family firms choose to diversify to expand the scope of their activities. However, a question remaining in the extant literature is *how* family firms diversify once they decide to do so. Specifically, which type of diversification (product versus international diversification) family firms prefer relative to nonfamily firms remains a question to be answered. Moreover, firms are likely to undertake both product and international diversification simultaneously (Mayer, Stadler, & Hautz, 2014), but at the same time, firms often face the difficulty of managing both types of diversification (Sambharya, 1995). This suggests product diversification and international diversification may represent a trade-off relationship (Kumar, 2009) and firms may prefer for one diversification strategy to the other. This naturally imposes a question—which diversification strategy are firms likely to prefer?

Thus, the purpose of this essay is to investigate which primary dimension of diversification family firms are likely to select once they decide to diversify in comparison to nonfamily firms. Based on recent advancements in the field of family firms that highlights the importance of the combination of goals, governance, and resources in influencing a firm's strategic behaviors and outcomes (Chrisman & Holt, 2016; Chrisman, Sharma, Steier, & Chua, 2013; Daspit, Chrisman, Sharma, Pearson, & Mahto, 2018), I theorize that family firms exhibit differences from nonfamily firms in their propensity towards product rather than international diversification. Research

further suggests that family firms are largely a heterogeneous group (König, Kammerlander, & Enders, 2013; Miller, Le Breton-Miller, Lester, & Cannella, 2007), and heterogeneity among family firms is even found to be greater than between family and nonfamily firms (Chrisman & Patel, 2012)<sup>27</sup>.

Causes of heterogeneity among family firms can be grouped according to governance structures (Carney, 2005), goals (Chrisman, Chua, Pearson, & Barnett, 2012), and resources (Habbershon, Williams, & MacMillan, 2003). For example, different governance structures represented by the family's involvement in ownership, management, and the board can lead to a variety of outcomes (Chua, Chrisman, Steier, & Rau, 2012). The mix of economic and noneconomic goals and the relative importance of these goals is another cause of heterogeneity among family firms (Chrisman, Chua, et al., 2012). Differences in resources arising from the family's involvement in governance and management can also lead to different outcomes (Chua et al., 2012).

My study offers several important contributions to the family business and diversification literature. First, while family firms are found to be less likely to engage in product and international diversification (Anderson et al., 2003a; Fang et al., 2018; Gomez-Mejia et al., 2010), the question regarding *how* family firms diversify remains to be answered. By investigating which primary dimension of diversification family firms prefer, this study extends our knowledge of family firms' diversification behavior. Second, the existing studies on diversification and internationalization of family firms have mostly compared their diversification or internationalization proclivity with those of

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<sup>27</sup> It is important to note that the focus of this essay is to look at the relative preference for these two types of diversification (i.e., product diversification and international diversification) in family and nonfamily firms, as well as among various types of family firms.

nonfamily firms. Our knowledge of the variance among family firms regarding their propensity towards types of diversification remains limited. By investigating diversification preferences among various types of family firms, this study contributes to our knowledge of heterogeneity across family firms.

Third, diversification represents one of the most studied topics in the strategic management literature (Ahuja & Novelli, 2017; Hitt, Tihanyi, Miller, & Connelly, 2006). Product and international diversification are considered two of the critical determinants of the success of firms (Delios & Beamish, 1999). By investigating the relative preference for these two types of diversification in family firms, this study contributes to the diversification literature in general, and diversification types in particular. Fourth, I find that family firms with a large representation of family executives in the TMT are more likely to choose internal rather than external diversification, thus highlighting the heterogeneity nature of family firms (Chrisman, Chua, et al., 2012).

### **Theoretical Background and Hypotheses**

Product and international diversification are central to corporate strategy (Hitt, Hoskisson, & Kim, 1997; Wan & Hoskisson, 2003). They represent two key dimensions of a firm's diversification strategy (Hutzschenreuter & Gröne, 2009; Kumar, 2009; Mayer et al., 2014). Product diversification is a firm's decision to expand the scope of its business into new lines of activity (Ahuja et al., 2017; Palich, Cardinal, & Miller, 2000), whereas international diversification is "the expansion across the borders of global regions and countries into different geographic locations or markets" (Hitt et al., 1997: 767). In other words, while product diversification is focused on adding new products, potentially to serve new customer segments, international diversification involves entry



into foreign markets usually with little change in product offerings (Wan, Hoskisson, Short, & Yiu, 2011)<sup>28</sup>.

Various perspectives have been used to understand the antecedents of product and international diversification, including the resource-based view of the firm (RBV) (Barney, 1991; Penrose, 1959; Teece, 1982; Wernerfelt, 1984), incentives and goals of the firm (Hoskisson & Hitt, 1990), ownership structure of the firm (Ramaswamy, Li, & Veliyath, 2002), among others. Among the extant literature, there is a large body of research using the RBV as the major perspective in understanding the antecedents of a firm's diversification into multiple products and geographic markets (Attig, Boubakri, El Ghoul, & Guedhami, 2016; Døving & Gooderham, 2008; Fang, Wade, Delios, & Beamish, 2007; Hitt et al., 1997; Sakhartov, 2017; Teece, Rumelt, Dosi, & Winter, 1994; Tippmann et al., 2017). According to the RBV, to the extent a firm's resources are valuable, rare, imperfectly imitable, and nonsubstitutable, the firm can utilize its resources to optimally diversify into new businesses or geographic markets (Hitt, Tihanyi, et al., 2006; Wan et al., 2011). As such, the RBV underscores the importance of resources and resource sharing in determining a firm's diversification strategies.

### **Prior Literature on Product Diversification**

From the resource perspective, prior research suggests that firms must have the necessary resources in order to make diversification economically feasible (Beaumont, Hebert, & Lyonnet, 2017; Døving et al., 2008; Hoskisson et al., 1990; Matusik & Fitza,

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<sup>28</sup> My theoretical discussion of product diversification focuses on diversification without regard to a firm's geographic market diversification. Likewise, my discussion of international diversification focuses on geographic market diversification without regard to a firm's product diversification. Therefore, cross-border acquisitions, a fairly recent phenomenon that combines both expansion strategies (Galavotti, Depperu, & Cerrato, 2017), will be dealt with only indirectly.

2012; Teece, 1982; Wernerfelt, 1984). Resources such as technological know-how, managerial know-how, as well as various types of competencies and capabilities are essential for a firm's product diversification (Wan et al., 2011). Firms often diversify by identifying new activities requiring resources and capabilities that are already possessed but currently underleveraged by its workforce (Chatterjee & Wernerfelt, 1991; Neffke & Henning, 2013). Thus, a firm's resource base is a powerful predictor of a firm's diversification, especially which business a firm is likely to enter (Sakhartov, 2017). Research suggests that firms are likely to diversify into industries that are similar to their home industries with respect to firm expertise, product-market, or production knowledge (Miller, 2006; Robins & Wiersema, 1995; Silverman, 1999). Further, diversification not only may be a result of excess resources but can be viewed as a process of accessing new resources across different industries or market segments (Mosakowski, 1997; Wan et al., 2011).

The dynamic capabilities view (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997) is also used for understanding a firm's diversification behavior. Dynamic capabilities are "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece et al., 1997: 516). Research has suggested that the scope of diversification in a firm can be accounted for by differences in their dynamic capabilities and highlighted that dynamic capabilities would enable firms to expand their scope of services (Døving et al., 2008; Ng, 2007). By reconfiguring and redeploying resources and capabilities between various businesses, a firm can achieve economies of scope—the average total cost of a firm's production decreases as the number of diversified businesses increases (Helfat & Eisenhardt, 2004).

A firm's prior diversification experience is recognized as another determinant of a firm's subsequent decisions on entering new product markets (Helfat & Lieberman, 2002; Mayer et al., 2014; Sapienza, Autio, George, & Zahra, 2006). Based on the literature that prior experience is central to the development of organizational capabilities (Barney, Ketchen, & Wright, 2011), previous studies suggest that experience with product diversification will support the development of managerial capabilities to manage multiunit organizations (Geringer, Tallman, & Olsen, 2000; Hitt et al., 1997). Greater experience in product diversification can allow firms to overcome short-run constraints in dealing with diversification and thus enable them to exploit their ability to enter new markets and manage the complexity associated with a multiunit enterprise (Mayer et al., 2014; Wu, 2013). For example, Wu (2013) shows that firms with a larger stock of experience, specifically innovation experience, are more likely to diversify because pre-entry experience and capabilities will allow firms to establish competitive viability in the new market.

Prior research has also highlighted the effects of top managers' decision-making and cognitive ability on the scope of a firm's businesses (Calori, Johnson, & Sarnin, 1994; Carpenter & Fredrickson, 2001; Prahalad & Bettis, 1986). For instance, Calori et al. (1994) found that top managers of diversified firms have more complex cognitive maps of the structure of their environment than top managers in other firms. Top managers' external ties and political connections are also seen as key antecedents of corporate diversification (Farjoun, 1994; Kor & Leblebici, 2005; Li, He, Lan, & Yiu, 2012; Sun, Peng, & Tan, 2017). For example, Li and colleagues (2012) found that

external ties and political connections associated with top managers drive companies to diversify into different businesses.

Resources may not lead to diversification unless they are activated by incentives or goals of the firm (Hoskisson et al., 1990). Goals provide reasons for a firm to engage in diversification. Low performance (Iyer & Miller, 2008), overall risk reduction (Hoskisson et al., 1990), and family-centered noneconomic goals related to family governance (Gomez-Mejia et al., 2010) can all influence whether a firm will undertake diversification or not. For example, from a performance feedback perspective, research shows that as a firm's performance falls below its aspiration levels the probability of an acquisition will increase (Iyer et al., 2008). This is because firms will engage in problemistic search through acquisitions in order to overcome current performance shortfalls (Cyert & March, 1963). Researchers have also long argued diversification, especially unrelated diversification, can be influenced by managerial motives (Amihud & Lev, 1981, 1999). Specifically, diversification can be driven by managers' motivations for increasing their compensation or gaining more power and prestige associated with managing a larger firm (Denis, Denis, & Sarin, 1997; Goranova, Alessandri, Brandes, & Dharwadkar, 2007).

Moreover, the governance structure of a firm, specifically, its ownership structure, can affect a firm's diversification (Goranova, Dharwadkar, & Brandes, 2010; Ramaswamy et al., 2002). For example, different institutional ownership structures are likely to inspire different motivations for diversification (Ramaswamy et al., 2002). Specifically, pressure-sensitive owners such as banks and insurance companies are argued to be positively disposed to unrelated diversification (Ramaswamy et al., 2002),

because they are susceptible to the influence exercised by the firm's managers (Brickley, Lease, & Smith, 1988) and likely to have a significant vested interest in supporting the management in their corporate strategy initiatives. Moreover, pressure-resistant owners such as mutual funds are expected to bring with them an aggressive monitoring approach that limits managerial excesses and exploitation of self-interests to the detriment of shareholders and is found to weaken the propensity of a firm's managers to engage in unrelated diversification attempts (Ramaswamy et al., 2002).

Moreover, there is a growing body of research focusing on the influence of family ownership structure on a firm's diversification (e.g., Anderson et al., 2003a; Gomez-Mejia et al., 2010). This stream of research shows that due to their family-centered goals, unique governance structures, and idiosyncratic resources, family firms are less likely to engage in product diversification than nonfamily firms (Anderson et al., 2003a; Ducassy & Prevot, 2010; Gomez-Mejia et al., 2010). Diversification requires funding and managerial talent and expertise that may not be available within the family. A diversifying family firm may have to seek external financing and recruit external professionals, thus imposing threats on the family principal's tendency to exercise unconstrained authority and influence of the firm (Gomez-Mejia et al., 2010). Moreover, in the case of external diversification, it is a fundamental challenge to achieve the necessary level of organizational integration after acquisitions (Zollo & Singh, 2004). Such challenges may arise from the retention of employees in the acquired firm (Cannella & Hambrick, 1993), knowledge transfer between the acquiring and acquired company (Ranft, 1997), and the potential incompatibility of organizational routines between the acquired and acquiring firms (Chang & Rosenzweig, 2001). Due to the difficulty

associated with integration and the possibility of reconfiguring organizational structures after an acquisition (König et al., 2013), family firms often show more reluctance to engage in acquisitions than nonfamily firms (Gomez-Mejia, Patel, & Zellweger, 2015; Miller, Le Breton-Miller, & Lester, 2010).

In summary, the above literature has informed our understanding of how factors including resources (e.g., Døving et al., 2008; Mayer et al., 2014; Wan et al., 2011), goals/incentives (e.g., Iyer et al., 2008), and governance (e.g., Ramaswamy et al., 2002) may influence a firm's product diversification.

### **Prior Literature on International Diversification**

Previous research has investigated various factors that may drive the degree or scope of a firm's international diversification (Denis, Denis, & Yost, 2002; Hitt, Tihanyi, et al., 2006; Kumar, 2009). Resources as a basis for internationalization have gained considerable research attention (Delgado-Gómez, Ramírez-Alesón, & Espitia-Escuer, 2004; Hitt, Tihanyi, et al., 2006). Based on the RBV, researchers suggest resources, particularly intangible resources are the basis of a firm's motivation to expand into new geographic markets (Delgado-Gómez et al., 2004; Hitt, Bierman, Uhlenbruck, & Shimizu, 2006; Sethi, Guisinger, Phelan, & Berg, 2003; Tihanyi, Johnson, Hoskisson, & Hitt, 2003). The possession of intangible resources such as technological capabilities, managerial or production skills, organizational and marketing systems, and experience can have a positive effect on a firm's international diversification. For example, a firm's possession of proprietary technological assets and marketing assets are found to be positively related to the firm's geographic scope (Delios et al., 1999).

A firm's international diversification is not only influenced by the firm's internal resources, but also by resources and relational network external to the firm (Araujo & Rezende, 2003). For example, firms holding strong relational capital with foreign governments and large corporate customers are found to have a higher probability of expanding internationally (Hitt, Bierman, et al., 2006; Nachum & Zaheer, 2005). Strong relational capital characterized by mutual trust and joint problem-solving ability (Uzzi, 1997) can result in shared meaning, commitment, norms of reciprocity, and deeper understanding of each party (Granovetter, 2005; Zucker & Darby, 2005), thus facilitating a firm's expansion into international markets (Hitt, Bierman, et al., 2006). Internationalization can also be motivated by firms' seeking resources from the host country, especially for firms in information-intensive industries (Hitt, Tihanyi, et al., 2006; Nachum et al., 2005). For example, firms can often access diverse knowledge bases not available in the domestic market and increase learning through exporting activities (Salomon & Shaver, 2005).

The important role of top executives in the decision to diversify internationally has also been emphasized in the prior literature (Tihanyi, Ellstrand, Daily, & Dalton, 2000; Wally & Becerra, 2001). For instance, prior findings demonstrate that greater international experience of the top management team (TMT) is positively associated with firm international diversification (Hitt, Bierman et al., 2006; Sun et al., 2017). These researchers reason that international experience of top managers reduces the uncertainty associated with international expansion and creates social capital that can facilitate a firms' plans to diversify internationally (Hitt, Bierman, et al., 2006). Further, a heterogeneous TMT is likely to facilitate international diversification (Sambharya, 1996;

Sanders & Carpenter, 1998). For instance, a diverse TMT in terms of educational specialization and tenure may indicate individual members have different interpretations and perspectives, which can enhance the information-processing capabilities of the group by considering a broader range of solutions (Wiersema & Bantel, 1992) to deal with the complexity associated with internationalization.

Similar to firms that diversify their product portfolio, firms that diversify internationally have diverse motives, including economies of scale associated with large size, an extension of innovative capabilities, and location advantages, among others (Hitt, Tihanyi et al., 2006; Siegel, Omer, Rigsby, & Theerathorn, 1995). For example, the intention of gaining a larger market size and accessing abundant resources can drive a firm to engage in international diversification (Hitt, Tihanyi, et al., 2006). Researchers also argue that different ownership structures inspire different reasons for international diversification (e.g., Tihanyi et al., 2003). For example, while both professional investment funds and pension funds are argued to be positively related to a firm international diversification, there are different reasons for their propensity for internationalization (Tihanyi et al., 2003). Professional investment funds are likely to be interested in international diversification because they may seek to take advantage of international opportunities and the potential positive effect of international diversification on shareholder wealth, whereas institutional ownership by pension funds leads to investment in international diversification because of its long-term performance orientation (Tihanyi et al., 2003).

International diversification is also found to be associated with the governance structure of a family firm (Arregle, Naldi, Nordqvist, & Hitt, 2012; De Massis, Frattini,



Majocchi, & Piscitello, 2018; Fang et al., 2018; Gallo et al., 1996; Gomez-Mejia et al., 2010; Pukall et al., 2014). Research shows that family firms are generally less likely to engage in international diversification than nonfamily firms (Arregle et al., 2012; Banalieva & Eddleston, 2011; Fang et al., 2018; Gomez-Mejia et al., 2010). One of the reasons for family firms' reluctance to engage in internationalization is that international diversification requires increased ties to foreign resources, stakeholders, and institutions (Hitt et al., 1997), which makes the family more dependent on human and relational capital outside the family circle, thus diluting family control of the firm (Gomez-Mejia, Cruz, Berrone, & De Castro, 2011).

As reviewed above, antecedent factors leading to a firm's international diversification can be understood by considering its resources (Hitt, Bierman, et al., 2006; Wally et al., 2001), goals (Hitt, Tihanyi, et al., 2006), and governance (Tihanyi et al., 2003). These studies have informed our understanding of how resources, goals, and governance may influence a firm's international diversification.

### **A Comparison between Product and International Diversification**

While there is a large body of research devoted to investigating factors that influence a firm's scope expansion along these two dimensions—product and international diversification, the majority of prior research has investigated their antecedents separately, despite the fact that firms generally use both dimensions of diversification simultaneously (Alessandri & Seth, 2014; Denis et al., 2002; Hitt et al., 1997). However, extant research has gradually shifted the focus on their interrelationship to examine how the growth in one dimension of diversification is associated with the other. Regarding the relationship between product and international diversification, prior

research has generated mixed findings (Denis et al., 2002; Kumar, 2009; Mayer et al., 2014; Wiersema & Bowen, 2008).

Some researchers argue that these two dimensions represent a complementary relationship (Denis et al., 2002). This view is supported by the argument that both international and product diversification require fungible and intangible resources such as technical and production know-how that can be transferred from one dimension to the other (Hitt et al., 1997; Kumar, 2009; Teece, 1982). However, other researchers suggest that product diversification and international diversification represent a trade-off relationship and argue that growth along one dimension is likely to be negatively related to the growth along the other dimension (Kumar, 2009; Wiersema et al., 2008). The main argument in support of this trade-off relationship is that firms are subject to various short-term constraints (e.g., 'sticky' intangible resources) (Szulanski, 1996), which may increase the difficulty of replicating and transferring of knowledge, tacit knowledge in particular, from one opportunity to another and thus limit the chance a firm can simultaneously utilize the resources along these two dimensions of diversification (Kumar, 2009).

While there is a growing number of studies investigating the relationship between these two types of diversification, the question regarding which type of diversification firms are more likely to prefer has not been answered. Given that firms often engage in both product and international diversification simultaneously but have difficulty managing both types, it is important to investigate a firm's relative emphasis on these two types of diversification. In order to understand a firm's relative propensity to invest in product versus international diversification, I shall discuss advantages and disadvantages

associated with each diversification type. The similarities and differences between these two diversification strategies can be understood in terms of resource and capability requirements, as well as risks of diversification.

First, as alluded to previously, resources are the basis for product and international diversification (Hitt et al., 1997; Kumar, 2009; Wan et al., 2011). Firms need tangible resources such as structural mechanisms represented by a multidivisional structure that can facilitate learning and coordination across multiple units or geographic markets. Intangible resources related to marketing, technology, production know-how, and dynamic capabilities in terms of the ability to manage diverse subunits and markets are also required for both types of diversification. Further, diversifying into a new product or a new geographic market requires firms to develop organizational process, routines, and practices in response to the greater organizational complexity associated with the management of a multiunit, multimarket enterprise (Galan & Sanchez-Bueno, 2009; Kumar, 2009; Mayer et al., 2014), as well as the ability to reconfigure linkage among various components of the firm and manage diverse subunits.

Moreover, product diversification requires distinctive and core competencies (Prahalad & Hamel, 1990), as well as top managers' cognitive capabilities (Calori et al., 1994; Wiersema et al., 1992), to manage a diversified product portfolio. Product diversification also imposes great requirements on a firm's ability to reconcile subsystems and share resources across diverse subunits (Wan et al., 2011), especially when diversification is conducted via external acquisition, which is generally considered a complicated process of integrating culture and strategy between the acquiring and acquired firms (Lakshman, 2011). Diversification, especially unrelated diversification,

also requires a firm's ability to engage in a major restructuring of the firm (Barkema & Schijven, 2008). Similar to firms diversifying their product portfolio, firms expanding internationally also need resources and competencies to manage a geographically diversified market (Hitt, Tihanyi, et al., 2006). These firms need managerial competencies to reconcile system and subsystem priorities and ability to develop and coordinate across the global web of subsidiaries (Kim & Mauborgne, 1991; Sanders et al., 1998).

While both types of corporate scope expansion require necessary resources and managerial competencies to manage and coordinate subunits and markets of complex diversified firms, a firm might prefer product or international diversification depending on the nature of the resources the firm possesses. For example, prior research suggests that high levels of transferability of a firm's resources can facilitate a firm's propensity towards product diversification (Speckbacher, Neumann, & Hoffmann, 2015). High transferability of existing resources can provide the firm with immediate opportunities to build up and accumulate the required target segment resources via internal diversification and thus reduce the costs, time, and risks of diversification (Qian, Agarwal, & Hoetker, 2012). However, transferring existing resources, especially 'sticky' tacit resources, is significantly more difficult across a geographically diversified market (Roth & O'Donnell, 1996; Sanders et al., 1998). This is because the transferring of resources often necessitates close contact between transferors and potential recipients (Kogut & Zander, 1993; Szulanski, 1996).

Furthermore, product diversification, especially internal diversification is likely to be more compatible with the firm in terms of culture, systems, and procedures (Sharma,

1998). Managers engaging in product diversification in a domestic setting are likely to have connections through work and social networks with their counterparts in other operating divisions of the firm and therefore be more comfortable and effective in drawing upon relevant resources (Sharma, 1998). This is in contrast to the difficulty associated with international diversification. A firm diversifying to another country may face complexity and difficulty associated with communication and coordination across countries (Kogut & Singh, 1988), which may become even harder when there is a greater cultural distance represented by the differences in managerial values, mindsets, and norms (Hofstede, 1980). Moreover, as firms expand beyond their domestic markets, they are likely to face increasingly diverse and inconsistent laws, governmental regulations, and ethical policies (Attig et al., 2016; Carpenter & Sanders, 2004; Gomez-Mejia & Palich, 1997; Sanders et al., 1998; Zahra & Garvis, 2000). Such diversity is often in conflict with the domestic managerial mindset of the top management team and puts pressure on the team's ability to divide its attention geographically (Kim et al., 1991; Sanders et al., 1998).

The complexity associated with internationally coordinating and reconciling systems across a global network also increases the volume, variety, and disunity of the information that firms and their top management teams must process (Sanders et al., 1998). Indeed, "information-processing demands are more complex and greater when firms move into new international markets than when they move into different product markets within the same domestic setting" (Hitt et al., 1997: 773). For example, firms

engaging in exporting activities<sup>29</sup> need to be familiar with the environment and regulations in the target market and develop information-processing mechanisms capable of dealing with complexity that allows it to efficiently collect and process relevant information. Other foreign market entry modes such as foreign direct investment (FDI) engages deep and direct involvement with stakeholders and imposes even greater requirements on a firm's ability to process information related to the host country (Zahra, Ireland, & Hitt, 2000). Often times, firms need to invest heavily in understanding these local conditions and learning to deal with new bureaucratic procedures in the foreign country (Vlasic, 1998). Sometimes firms even face a hostile international environment due to local governments' policies and actions in protecting their national markets (Hitt et al., 1997; Zahra et al., 2000). For example, it is reported that U.S. firms venturing into Asian countries such as Singapore, Korea, or Taiwan often have to face the situation that governments in these countries have used various ways to protect and support their own country's firms (Zahra et al., 2000).

Second, both product and international diversification are considered "expressions of explorative behavior" (Galavotti, Depperu, & Cerrato, 2017:893). As such, they both are risky strategies (Galavotti et al., 2017; Sambharya, 1995). Product diversification involves great risks and uncertainty associated with entrepreneurial activities related to the development of new products, technologies, and capabilities (Burgelman, 1983; Kelley, Peters, & O'Connor, 2009; Sharma & Chrisman, 1999; Verbeke, Chrisman, &

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<sup>29</sup> Exporting is the most prevalent form of international expansion (Salomon & Shaver, 2005; Shaver, 2011). For example, statistics show that US firms exported \$1.07 trillion of goods and services in 2000 with most of the firms from the manufacturing industry (US BEA, 2001). Thus, in consideration of other foreign market entry modes, I focus on exporting activity in my analysis.

Yuan, 2007; Zahra, Filatotchev, & Wright, 2009). For example, internal diversification often has long payoff horizon and thus entails substantial risk (Chrisman & Patel, 2012; Lee & O'Neill, 2003). In addition, when firms engage in external acquisitions, they have to face the risk of purchasing a firm with serious but previously unknown problems (Akerlof, 1970).

International diversification may differ from product diversification in the risk profiles (Alessandri et al., 2014; Gande, Schenzler, & Senbet, 2009). Firms expanding internationally often face great social, political, and legal risks, as well as volatile exchange-rate (Alessandri et al., 2014; Ellstrand, Tihanyi, & Johnson, 2002; Moser, Nestmann, & Wedow, 2008; Tihanyi et al., 2003). Such risks often constitute important frictions to international diversification. For example, Moser et al. (2008) found political risk has a detrimental effect on exporting activities of German firms. Moreover, exporters often need to face the advance payment issue by importers who are often not obligated to pay until 90 days after the goods arrive (Amiti & Weinstein, 2011).

In addition, international diversification is likely to incur risk arising from the “liability of foreignness” (Zaheer, 1995; Zaheer & Mosakowski, 1997). There are four sources of the liability of foreignness: risk deriving from the lack of familiarity with the environment in the host country; risk generated by the host country environment in terms of lack of legitimacy of foreign firms; risk associated with spatial distance (e.g., transportation, travel); and risk deriving from the home country environment (e.g., restrictions on sales to some specific countries) (Zaheer, 1995). For example, exporters face significant uncertainty as they develop marketing channels and gain information related to consumers from different countries (Greenaway, Guariglia, & Kneller, 2007).

Since consumers from different nations do not share identical tastes, the end products desired by consumers in the destination country may vary from those offered in the home country. In this case, exporters need to rely on export intermediaries or other agents in the foreign environment to learn about customer preferences and provide feedback regarding demands on their products and then adapt products and packaging to foreign tastes.

International diversification may also face the risk of technological and marketing know-how being expropriated by their foreign partners (Hill, Hwang, & Kim, 1990). For example, in the case of licensing, a firm grants a license to a foreign enterprise to use firm-specific know-how to manufacture or market a product and thus runs a significant risk of the licensee disseminating that know-how, or using it for a purpose other than those originally intended (Hill et al., 1990).

In sum, product diversification and international diversification are likely to differ from one another in the aspects of resources and risks. The characteristics of product diversification and international diversification are captured and shown in Table 28.

In consideration of the three main categories of antecedent factors that I reviewed for product and international diversification, in the following section I discuss the goals, governance, and resources and their influence on a firm's behaviors and strategies, specifically in the context of family firms, which are argued to have unique goals, idiosyncratic governance structures, and distinctive resource stocks (Chrisman, Chua, Le Breton-Miller, Miller, & Steier, 2018; Chrisman et al., 2013; Chua et al., 2012).

### **The Goals, Governance, and Resources Framework**

Although the influence of goals, governance, and resources has long been recognized by strategy scholars to exist for all firms (Hofer & Schendel, 1978), family



business researchers have recognized that the nature of the goals followed (Chrisman, Chua, et al., 2012; Gomez-Mejia, Haynes, Nunez-Nickel, Jacobson, & Moyano-Fuentes, 2007), the governance systems enacted (Carney, 2005), and the resources available through family involvement (Chrisman, Chua, & Litz, 2003; Habbershon & Williams, 1999; Sirmon & Hitt, 2003) appear to lead to differences in behaviors and outcomes between family and nonfamily firms, as well as among various types of family firms (Chrisman & Patel, 2012; Chrisman et al., 2013). In the following section, I will discuss these three elements individually<sup>30</sup>.

### ***Goals***

The behavioral theory of the firm (Cyert et al., 1963) has long recognized that firms have a diverse set of goals including economic and non-economic goals. Family business researchers have proposed that a greater emphasis on non-economic goals may be what differentiates family from nonfamily firms (Chrisman et al., 2012; Chrisman, Chua, & Sharma, 2005; Chrisman et al., 2013; Gomez-Mejia et al., 2007; Westhead & Howorth, 2007; Zellweger, Kellermanns, Chrisman, & Chua, 2012). The non-economic goals reflect the unique interests and preferences of the controlling family (Chrisman, Chua, et al., 2012; Zellweger & Nason, 2008). These noneconomic goals may include maintaining family control of the firm (Gomez-Mejia et al., 2007), perpetuating the family's identity (Berrone, Cruz, & Gomez-Mejia, 2012), maintaining a strong sense of community (Miller & Le Breton-Miller, 2005), and preserving the family business across

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<sup>30</sup> Some researchers consider governance as another resource owing to the potential for concentrated control to allow for rapid, timely decision-making (Sirmon et al., 2003). This suggests that governance and resources are likely to overlap. Consistent with prior literature (Chrisman et al., 2013), in this regard I would note that goals, governance, and resources are interdependent.

generations (Chrisman, Chua, et al., 2012; Zellweger et al., 2012). For example, research shows that family firms have a higher level of strategic persistence due to their tendency to sustain family tradition and heritage (Fang, 2016). Family firms are also found to be willing to risk financial losses and bear a greater probability of failure in order to maintain family control of the firm (Gomez-Mejia et al., 2007).

While there may be a number of goals that can be related to a family firm's relative propensity towards one diversification strategy over the other, several goals are especially important, including goals related to exercising family control of the firm and maintaining a positive reputation for the family firm. Due to the intimate connection between family and business entities, the desire to maintain family control is an important goal in family firms' strategic decision-making (Chrisman, Chua et al., 2012; Gomez-Mejia et al., 2007). Moreover, family members typically have a strong emotional attachment to the firm (Berrone et al., 2012; Gedajlovic, Carney, Chrisman, & Kellermanns, 2012). Such emotions permeate the organization and influence the family business's decision-making process (Baron, 2008; Berrone et al., 2012). Because the identity of the family owner is so closely tied to the organization, external stakeholders often perceive the firm as an extension of the family itself. Family members are usually sensitive to the image they project to external stakeholders (Craig & Dibrell, 2006; Cruz, Larraza-Kintana, Garcés-Galdeano, Berrone, 2014). Perpetuating a positive family and business identity and reputation is another major goal that drives family firms' strategic decision-making (Zellweger et al., 2008; Zellweger, Nason, Nordqvist, & Brush, 2013).

Further, different types of family firms are likely to pursue different goals and attach different levels of importance to the pursuit of such goals (Chrisman, Chua, et al.,

2012; Holt, Pearson, Carr, & Barnett, 2017). For instance, the greater the extent of family involvement and influence in the firm, the greater attachment family firms should have towards the pursuit of their unique goals and the more these goals should reflect the underlying vision and intentions of the controlling family (Astrachan & Jaskiewicz, 2008; Chrisman, Chua, et al., 2012; Gomez-Mejia et al., 2007; Zellweger & Astrachan, 2008). Moreover, founding generation family owners tend to share the goals of the dominant family, however, the importance of pursuing such goals tends to diminish as the firm transitions to later generations (Gomez-Mejia et al., 2011; Fang et al., 2018). These differences can help us understand why product diversification and internationalization may vary among family firms led by the founding generation versus later generation family owners (Fang et al., 2018).

### *Governance*

While goals of a family firm give the dominant family “willingness” to exert influence on the firm’s strategies and outcomes, the firm’s “ability” will be reflected in the governance structure (Chrisman, Chua, De Massis, Frattini, & Wright, 2015). Systems of corporate governance embody authority patterns, incentives, and norms of legitimation that generate particular organizational propensities to create competitive advantages and disadvantages for the firm (Carney, 2005). For example, family governance in terms of having a majority or controlling ownership and holding prominent positions in the TMT and/or on the board of directors gives the dominant family coalition virtually unfettered ability to behave idiosyncratically (Carney, 2005). Carney (2005) argues that the impact of a family’s control rights over a firm’s assets generates three dominant propensities labeled as parsimony, personalism, and particularism.

First, family business scholars argue that family firms have the propensity for parsimony because family firms make strategic decisions with the family's personal wealth (Carney, 2005). The unification of ownership and control can promote interest alignment between owners and managers, and thus reduce agency costs and the tendency toward opportunistic behaviors (Carney, 2005). The alignment of interests can also promote the dominant family's tendency to be parsimonious and careful in conserving and allocating resources (Carney, 2005). Second, in family governance, the ultimate authority is incorporated in the person of an owner-manager who is less subject to external constraints associated with disclosure, accountability, and transparency (Carney, 2005; Morck, Shleifer, & Vishny, 1988). Due to personalization of authority, the dominant family is able to project its own vision onto the business (Chua, Chrisman, & Sharma, 1999). Lastly, particularism is the family firm's tendency to use idiosyncratic and particularistic criteria in decision-making (Chrisman, Steier, & Chua, 2006) and it stems from the tendency of the owner-manager to view the firm as "our business" (Demsetz & Lehn, 1985). For example, family firms may use family control as an important particularistic criterion in making strategic decisions such as diversification (Gomez-Mejia et al., 2010).

Based on the governance systems enacted, the controlling family is likely to have different levels of ability and discretion to make idiosyncratic decisions. For example, the controlling family may have limited discretion to make decisions in a *family-influenced* firm in which there is considerable non-family ownership, whereas the controlling family is likely to have unconstrained discretion in a *family-controlled* firm (Arregle et al., 2012). The more of the business the family owns, the greater power and discretion that

the family has to act in ways that attend to the needs of the controlling family (Zellweger et al., 2012).

In family firms where the family dominance in governance and top management is less pronounced, family attributes will drive strategic choices to a lesser extent as there are “other voices at the table” (Sirmon, Arregle, Hitt, & Webb, 2008: 980). Non-family owners can also provide financial, human, and technological resources essential for engaging in strategic activities such as entering foreign markets (Arregle et al., 2012; Sciascia, Mazzola, Astrachan, & Pieper, 2012). On the other hand, a concentrated family ownership structure gives rise to resource deployment and capability development that, in turn, has implications for a family firm’s strategies (Hoopes & Miller, 2006).

Family firms may differ from one another in their governance structures, which may be reflected in the extent of family ownership, the level of family representation in the TMT and/or on the board of directors, the generation of family members owning and controlling the family firm (Chua et al., 2012; Daspit et al., 2018; Nordqvist, Sharma, & Chirico, 2014). The ownership of family firms may vary along the proportion of family ownership in terms of full, majority, or controlling ownership (Chrisman et al., 2018; Daspit et al., 2018). The dimensions of the variance in family involvement in management and boards are similar to those associated with ownership. For example, the management of family firms can consist of a small versus a large number of family members, or family members from the founding generation versus later generations.

Heterogeneity in governance is likely to be associated with differences in goals and resource configurations (Carney, 2005; Chua et al., 2012; Le Breton-Miller & Miller, 2006; Pittino, Matinez, Chirico, & Galvan, 2018). Differences in governance, goals, and

resources can lead to a wide variety of outcomes, such as initial international entry (Evert, Sears, Martin, & Payne, 2018), entrepreneurial orientation (Pittino et al., 2018), and international entrepreneurship (Sciascia et al., 2012). For example, in a survival analysis of 190 U.S.-based and listed family firms, Evert and colleagues (2018) find that family ownership and management control decrease the likelihood of family firms' first expansion into a foreign market. As another example, Pittino et al. (2018) investigate the moderating effect of heterogeneous governance conditions, specifically, the number of generations involved in the TMT, on the relationship between family members' psychological ownership and knowledge sharing. Specifically, they found that the relationship between psychological ownership and knowledge sharing is positively moderated when there is a large representation of family members involved in the TMT (Pittino et al., 2018). Moreover, the presence of a family CEO is also likely to enable the controlling family to make idiosyncratic decisions that benefit the dominant family (Gomez-Mejia, Nunez-Nickel, & Gutierrez, 2001). A firm's strategy, specifically, diversification, is also found to be related to the representation of family members on the board of directors (Arregle et al., 2012).

In all, these findings highlight how heterogeneous governance structures in terms of ownership, management, and board of directors may affect a family firm's strategic behaviors and underscore the importance of considering different dimensions of the family governance in the study of family firms' strategies.

### ***Resources***

Goals and governance also require resources if strategic intentions are to be successfully realized through the firm's actions (Hofer et al., 1978). The unique

governance characteristics of family firms allow their management considerable latitude in the development of certain resources such as social capital (Gedajlovic & Carney, 2010; Pearson, Carr, & Shaw, 2008). Family firms are argued to have unique family-endowed resources (i.e., familiness) that are embedded in the family's involvement in the firm due to the systems interaction between the family, its individual members, and the business (Chrisman et al., 2003; Habbershon et al., 1999; Sirmon et al., 2003). Familiness often reflects the intention and vision constituting the essence of a family business (Chrisman et al., 2013; Chua et al., 1999). Such familiness can affect family firms' behaviors (Carnes & Ireland, 2013; Duran, Kammerlander, Van Essen, & Zellweger, 2016). For example, research suggests that familiness will reduce the production of major innovations of a firm (Carnes et al., 2013; Chrisman et al., 2013). Family firms are also argued to have advantages in utilizing and orchestrating their unique resources (Duran et al., 2016).

Further, the stock of resources and familiness may vary among different types of family firms. For example, family CEOs are argued to be efficient in orchestrating and transferring resources due to their firm-specific tacit knowledge and idiosyncratic managerial capabilities (Duran et al., 2016; Li, 2017). However, at the same time, family CEOs are likely to have limited exposure to external environments (Zona, 2016), which might act as a constraint on a firm's internationalization. An increased participation from nonfamily TMT members can provide access to a diverse information pool which can be used to facilitate collective decision-making and increase decision comprehensiveness (Patel & Cooper, 2014; Simons, Pelled, & Smith, 1999). Moreover, the presence of external owners in a family firm can be useful resource providers for resource-

constrained family firms, and thus motivate internationalization in family-controlled firms (Arregle et al., 2012).

In summary, the governance structure of family firms gives the dominant family ability and power to pursue its economic and noneconomic goals and develop and utilize unique resources. This suggests that family firms act idiosyncratically because the family is able to use its ability granted through family governance to pursue a broad range of economic and noneconomic goals and/or exploit the resources that come from its involvement in the firm. However, consideration of each of these three concepts is necessary but individually insufficient to understand strategic behaviors of family firms, instead, goals, governance, and resources are collectively important for gaining an integrated understanding of family firm outcomes and behaviors.

### **The Relative Emphasis on Product versus International Diversification in Family and Nonfamily Firms**

Family involvement in governance and management of a firm shapes the firm's governance structure by increasing the family members' power, latitude, and legitimacy to make idiosyncratic decisions that maximize the achievement of family-centered non-economic goals and utilize "familiness" resources of the firm. I expect that family and nonfamily firms are likely to exhibit differences in their relative emphasis on these two types of diversification, i.e., product diversification and international diversification. Specifically, I argue that family firms are likely to show a stronger tendency towards product diversification than international diversification compared to nonfamily firms. Several reasons can support this line of argument.



### ***Retaining Decision-Making Control***

First, maintaining family control and influence are an integral part of family firm goals and highly desired by family members (Berrone et al., 2012; Chrisman, Chua et al., 2012; Gomez-Mejia et al., 2007; Zellweger et al., 2012). Family control of the firm allows the family to pursue its interests through the firm. Family owners are argued to be reluctant to share their decision-making control and authority with other parties and likely to perpetuate their direct or indirect control and influence over the firm's strategic decision-making (Carney, 2005; Chrisman et al., 2015; Chua et al., 1999; Schulze, Lubatkin, Dino, 2003). I expect that due to their desire to maintain family control over the firm, family firms are likely to prefer product diversification to international diversification to a larger extent than nonfamily firms.

On the one hand, product diversification, specifically, external acquisitions, may involve stock swaps (Nail, Megginson, & Maqueira, 1998), and thus dilute family ownership control of the firm. However, acquisitions generally give the firm control over their decision-making in terms of whether to engage in acquisitions, when to engage in such acquisitions and with whom such acquisitions will take place. Moreover, internal diversification in terms of internal R&D investment is likely to provide a family firm with total management control, especially over the strategic decision-making of the firm, including resource allocation and the development of a timeline for the project, etc. (Teng, 2007). The family is likely to maintain managerial control in their new product development (NPD) (De Massis, Kotlar, Frattini, Chrisman, & Nordqvist, 2016). Product diversification regardless of external or internal diversification require outside nonfamily managers (Gomez-Mejia et al., 2010), and thus lead to the loss of family control over the

firm's strategic decision-making. However, the risk of diluting decision-making control to external partners in an exporting relationship will be substantially less compatible with family firms than the risk of diluting decision-making control to nonfamily managers employed in the firm in the case of product diversification. In other words, product diversification is likely to give family firms direct control over the firm's strategic decisions.

International diversification, on the other hand, is likely to dilute the family's ability to exercise decision-making control of the firm. For example, in the case of FDI, firms need to delegate their day-to-day operations and certain strategic decisions to the foreign subsidiary, although the ultimate control typically resides at the firm's corporate office (Hill et al., 1990). In the event of low-control foreign entry modes such as joint ventures or licensing or direct exporting, the chance to dilute control over a firm's strategic decision-making is even greater. In a joint venture arrangement, a firm must share its decision-making control with venture partners. Firms even have less control over their decisions when they are the minority partner in the arrangement (Westman & Thorgren, 2016). Moreover, the exporting mode generally lacks in providing marketing control for the firm while it often offers the firm with operational control (Agarwal & Ramaswami, 1992). A host government may have bargaining power against foreign companies and thus control market access of these foreign firms. This power becomes even more apparent in emerging economies due to government ownership of many local enterprises (Luo, Shenkar, & Nyaw, 2001).

The exporter, especially through the distributor, sometimes only has indirect control with export operations locally in the export market (Solberg & Nes, 2002).

Exporters supervise only the result of the activities of the local representative ex-post such as sales volume, market share, profit, leaving the development of the marketing activities largely to the discretion of the local representative (Solberg et al., 2002). When firms export to multiple countries, the loss of marketing control can become even greater because firms are likely to lose control of the market once they move from one market to another.

This suggests product diversification, especially internal diversification, is more likely to provide a family firm with strategic decision control over the firm (Chrisman & Patel, 2012; Kotlar, Fang, De Massis, & Frattini, 2014), although sometimes the employment of nonfamily managers can dilute family control over the firm. However, compared to the type of control loss associated with international diversification, the loss of strategic control due to the employment of nonfamily managers within the family firm may be perceived as less serious by family firms. Since family firms are more likely to perpetuate owners' direct control over the firm's strategic decisions (Gomez-Mejia et al., 2007), I expect in comparison to nonfamily firms, family firms are likely to be more sensitive to the loss of direct decision-making control associated with international diversification than the loss of decision-making control associated with product diversification.

### *Utilizing Firm-Specific Resources*

Second, from a resource perspective, while all firms are concerned about building their resource stocks, family involvement may produce differences between family and nonfamily firms in terms of the level and nature of resources as well as the way resources will be deployed and exploited (Chrisman, Chua, et al., 2009; Miller et al., 2005; Sirmon

et al., 2003). Family firms are argued to be uniquely suited to develop and transfer classes of assets such as tacit knowledge and social capital which are largely embedded in the family's control and human capital investment in the firm (Gedajlovic & Carney, 2010; Memili, Chrisman, & Chua, 2011). The frequent interactions among family members can produce deep levels of firm-specific tacit knowledge (Carnes et al., 2013; Chrisman et al., 2016; Sirmon et al., 2003). The long-term orientation and patient capital of family firms also allow them to devote the proper time to cultivating the necessary relationships that will facilitate rich knowledge transfer (Miller et al., 2005; Sirmon et al., 2003).

While one of the key challenges in product diversification is how to control coordination costs (Cardinal, Miller, & Palich, 2011), social capital and tacit knowledge of family managers is argued to be particularly effective in limiting these costs (Stadler, Mayer, Hautz, & Matzler, 2018). In addition, the internal social capital of family members can address some of the key challenges associated with the management of a diversified firm and thus facilitate the management process of the diversification (Stadler et al., 2018). However, such locally rooted and grounded human and social capital of family managers represented by relatively tight sets of local relationships and communities (König et al., 2013; Stadler et al., 2018) may be less useful and less likely to be leveraged in international diversification. Geographical and cultural distances associated with international diversification will make communication across national borders more difficult and increase the challenges of maintaining a close and long-term buyer-seller relationship which is essential in an exporting setting (Alteren & Tudoran, 2016; Leonidas, Katsikeas, & Hadjimarcou, 2002).

Further, product diversification, especially internal diversification, is usually a great deal more compatible with a family firm's structures and procedures (Sharma, 1998) as it allows for the transfer of 'sticky' tacit resources such as ideas and resources across departments and business units, and thereby supports more efficient resource orchestration within the family firm (Bammens, Notelaers, & Van Gils, 2015; Duran et al., 2016; Sirmon et al., 2003). The rich social relationships and social capital of family firms (Berrone et al., 2012; Chrisman et al., 2005; Miller et al., 2005) often requires frequent interactions among family business networks which allow better estimates of trust and understanding (Lester & Cannella, 2006) and thus facilitate knowledge exchange and cooperation (Stadler et al., 2018). Conversely, internationalization often requires foreign assignments of family or nonfamily managers, and the increase of physical and cultural distance can reduce interactions among family members, thus increasing the difficulty of sustaining the interaction and interdependence required to maintain the advantages of family-based social capital (Arregle, Duran, Hitt, & van Essen, 2017; Pearson et al., 2008; Stadler et al., 2018). This suggests that compared to nonfamily firms, family firms are likely to perceive the benefits of product diversification to be greater because it allows them to leverage the advantages of the unique family firm-specific knowledge and facilitate the transferring of such knowledge, and thus are likely to have a greater preference for product diversification to international diversification.

### ***Facing the Risk of Knowledge Being Expropriated***

Third, another characteristic that distinguishes family from nonfamily firms is that family owners often have strong emotional attachment to their resources and assets (Berrone et al., 2012; Chrisman, Chua, & Kellermanns, 2009; Chrisman, Fang, Kotlar, &

De Massis, 2015; König et al., 2013). The existing assets and architectures of a family firm often represent the fruits of the decisions of family owners and managers (Chrisman et al., 2015). The linkage between the family and the business also tends to intensify attachment and commitment to the existing resources and procedures of the firm among family members (Craig, Dibrell, & Davis, 2008; Memili et al., 2011; Sharma & Irving, 2005).

I argue that the strong emotional ties to existing resources will serve as extra incentives for family firms to choose product diversification rather than international diversification compared to nonfamily firms. International diversification is more likely to create the risk of appropriation associated with disseminating firm-specific know-how such as technological and marketing know-how to external parties (Hill et al., 1990). While exporters generally need to acquire and assimilate new knowledge related to foreign markets where they have little or no previous experience (Khalid & Bhatti, 2015), they often face the risk of reverse engineering by foreign partners. Local partners may deconstruct the imported goods to extract knowledge and thus place the exporting firms at great risk of their knowledge being expropriated. Conversely, product diversification, internal development, in particular, can provide safeguards to protect the value of the existing resources and knowledge of the firm and thus help keep control of the firm's resources (Gulati & Singh, 1998). For example, Pisano (1990) found that fear of capability leakage motivates firms to greater use of internal development (Pisano, 1990). Internal developing allows a firm to coordinate activities needed to build on its existing capability stock and provide a more stable platform for future development of new capabilities because of their greater integration into the firm's context and knowledge

base (Karim & Mitchell, 2000; Kogut & Zander, 1996). Since family firms have financial as well as emotional attachment to their existing resources and assets, I expect that in comparison to nonfamily firms family firms are likely to perceive the risk of knowledge expropriation resulting from international diversification to be greater.

### ***Facing the Risk of Family Image and Reputation Being Threatened***

Fourth, while all firms are concerned with building a positive reputation, family firms are particularly sensitive to protect and enhance their image and reputation (Berrone et al., 2010; Chrisman et al., 2018; Cruz et al., 2014). This is because family firms often perceive a strong link between the fate of the business and their own well-being (Berrone et al., 2010). Family firms often go to great lengths to perpetuate a positive family image and reputation in their local communities and strive to create a business with an enduring reputation (Berrone et al., 2012; Dyer & Whetten, 2006; Sharma & Manikutty, 2005). I argue that this particular sensitivity towards building a positive reputation will serve as an extra incentive for family firms as compared to nonfamily firms to prefer product diversification to international diversification.

Product diversification typically takes place in an environment which is close and familiar to the focal firm. Product diversification, especially related diversification, is likely to allow family firms to benefit from long-established relationships with vendors and suppliers in the local community who are often viewed as part of the family. Product diversification also allows the exploitation of an established family “name” and the acceptance in the regional market (Banalieva et al., 2011; Stadler et al., 2018). In addition, product diversification, especially diversification through investment in exploitative R&D, can enhance a family firm’s historical linkages with their business

activities and thus augment the reputation of the firm (Patel & Chrisman, 2014). While failed R&D attempts or acquisitions might also damage a firm's reputation (Chrisman & Patel, 2012; Dyer et al., 2006), I expect that product diversification in a local setting usually makes it easier to create and maintain a positive reputation and translate reputation across local regions (Banalieva et al., 2011).

As firms expand globally, firms need to face increased risks associated with a less familiar environment and new cultural and institutional requirements, as well as unknown "rules of engagement" in a foreign country (Rugman & Verbeke, 2004). Firms may also face the escalated difficulty of balancing the numerous demands of different cultural and national differences imposed by geographically dispersed subsidiaries (Kostova & Roth, 2003; Strike, Gao, & Bansal, 2006), and such difficulty will be enhanced when there is a great cultural distance between the origin and host countries (Hofstede, 1980). This will motivate family firms to diversify into countries that are culturally close to their home country rather than culturally distant countries (Gomez-Mejia et al., 2010). While exporting may generate high growth, and this could also have a positive effect on the family firm's reputation, exporting may put the family firm's reputation at risk. Exporting often requires finding a local partner in each market and exporters must learn the reliability of their partners through experience (Aeberhardt, Buono, & Fadinger, 2014). An untrustworthy partner in an exporting relationship can prevent a firm from meeting its customers' demands and orders and thus threaten the family firm's reputational capital (Paul, Parthasarathy, & Gupta, 2017). Difficulties in monitoring their partners' behavior in a foreign country might also negatively affect product or service quality and as a result, put the family firm's reputation in danger.



In addition, international diversification requires a firm's norms to be adapted to foreign cultures and thus leads to the destabilization of social relations within the family (Stadler et al., 2018), which may dilute the image of the family firm and the family owners (Deepphouse & Jaskiewicz, 2013). I argue that compared to nonfamily firms, family firms are likely to perceive the risk to the family's image and reputation as a result of international diversification to be greater because international diversification might put the reputation of the firm, the family, as well as family members at risk. Thus, I hypothesize<sup>31</sup>:

Hypothesis 8: Family firms will rely more on product diversification than international diversification in comparison to nonfamily firms.

### **Heterogeneity within Family Firms**

In Hypothesis 8, based on the insights drawn from the goals, governance, and resources framework, I propose that relative to nonfamily firms family firms have a stronger tendency to diversify into a new product line in a domestic market rather than a new geographic market in a foreign country. Since family firms are a largely heterogeneous group, I expect that the stronger tendency for product diversification rather than international diversification is likely to vary among different types of family firms. Heterogeneity in family firms can be manifested in the level of family ownership of the firm (Chrisman, Chua et al., 2012), the identity of the CEO and the board chair (Berrone et al., 2012; Duran et al., 2016), the representation of family executives and directors (Liang, Wang, & Cui, 2014; Minichilli, Nordqvist, Corbetta, & Amore, 2014), as well as

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<sup>31</sup> These four lines of arguments used to support Hypothesis 8 are summarized and shown in Table 29.

the generation of family members controlling the family firm (Fang et al., 2018). Differences in these governance structures have important implications for our understanding of differences in goals and resources of family firms. For example, family firms where the controlling family owns a large percentage of shares are likely to have more power and legitimacy to pursue goals that will attend to the needs of the controlling family (Chrisman et al., 2012). As another example, in comparison to nonfamily CEOs, family CEOs are more likely to have their goals aligned with those of the controlling family and thus attend to the preferences of the dominant family (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010). Further, “familiness” in terms of resource stocks and the transferring of resources is likely to differ in family firms where there is a large representation of family members in the TMT. As the representation of family members in the TMT increases, the TMT might have a deeper level of tacit knowledge about the family firm (Miller & Le Breton-Miller, 2006).

### ***The Effect of the Percentage of Family Ownership***

Family ownership is an important dimension of family governance in our understanding of family firm heterogeneity (Chrisman et al., 2012; Dou, Zhang, & Su, 2014; Sciascia et al., 2012). I argue that the percentage of family ownership of the firm is likely to be positively associated with the level of emphasis on product diversification rather than international diversification. The dominant family’s ability and discretion to make idiosyncratic decisions is associated with the level of family ownership control of the firm (Zellweger et al., 2012). Where family members are large shareholders, they will have the power to shape the firm’s choice of diversification strategy according to their preferences. By contrast, where families hold a small percentage of share, they will not

be able to have much of an impact on diversification strategy. This suggests that a larger percentage of ownership of the firm is likely to give the controlling family more power to pursue goals related to remaining decision-making control of the firm and maintaining a positive reputation for the family and business, and thus have a stronger tendency toward product diversification rather than international diversification.

Specifically, family ownership is an important dimension for the family to retain control of the firm and its ability to influence firm decisions and achieve family-centered goals (Chrisman et al., 2015; De Massis, Kotlar, Chua, & Chrisman, 2014). Where family members are large shareholders, they are likely to have more incentive to pursue these goals, because the more shares a family owns the business, the more there is at stake for them (Miller et al., 2010). As control of the firm through ownership increases, the association of the family's name with the firm also increases (Dyer et al., 2006). Indeed, empirical studies have shown that the extent of family ownership of the firm is positively associated with the firm's pursuit of a favorable reputation for the family and business (Deephouse et al., 2013). In addition, family influence is associated with higher levels of emotional ties to the existing assets (König et al., 2013). This suggests that as the family ownership increases, the family has a stronger attachment to the existing resources and assets of the firm, and are thus more likely to avoid international diversification due to the concern associated with the expropriation of the firm's resources and knowledge. In summary, the extent of the family's ownership control should positively affect the pursuit of family-centered goals. As expressed below, this suggests that as family ownership increases, family owners will have a stronger preference for product rather than international diversification.

Hypothesis 9: The percentage of shares held by the family is positively related to the extent of using product diversification rather than international diversification.

### *The Effect of a Family CEO*

The importance of CEOs on strategy behavior and initiatives of a firm has long been recognized in the upper echelons literature (Finkelstein & Hambrick, 1990; Michel & Hambrick, 1992; Quigley & Hambrick, 2015; Souder, Simsek, & Johnson, 2012). There is a growing number of studies in family business suggesting that family influence on a firm's strategies and behaviors is also through the presence of a family CEO in the firm (Duran et al., 2016; Miller, Le Breton-Miller, & Lester, 2013; Miller, Le Breton-Miller, Minichilli, Corbetta, & Pittino, 2014). Prior research has shown that having a family CEO can affect a firm's strategic behaviors in areas such as corporate divestitures (Feldman, Amit, & Villalonga, 2016), environmental practices (Berrone et al., 2010), innovation inputs and outputs (Duran et al., 2016), as well as strategic conformity of the firm (Miller et al., 2013). For example, family firms with a family CEO have lower innovation inputs than those without a family CEO, because the interests of the family CEO mirror the family firm owners' investment preferences in terms of maintaining control of the firm and thus invest less in innovation (Duran et al., 2016). As such, I expect family CEO is another variable relevant to our understanding of a family firm's relative emphasis on product over international diversification. Specifically, I propose that family firms with a family CEO will be more likely to choose product rather than international diversification than those without a family CEO.

First, a family CEO enables the dominant family to exercise influence on a firm's decisions more effectively than a nonfamily CEO does and gives them more power and

discretion to pursue family-centered goals in terms of maintaining family control of the firm and perpetuating a positive reputation for the family firm (Berrone et al., 2010). As argued earlier, family firm owners are reluctant to choose international diversification because they are unwilling to cede decision-making control over their firm, and ceding control is harder to avoid in international diversification than product diversification. I argue that a family CEO is also less likely to be willing to cede control, which will limit the latitude of the CEO's managerial actions and decisions as a manager and restrict his or her shareholder voting power as an owner (Duran et al., 2016). As such, I expect that firms with a family CEOs will be less likely to choose international diversification compared to those without a family CEO. In addition, a family CEO shall have strong incentive to maintain a good reputation for the family firm since the family's past, present, and future are tied to the reputation of their firm (Miller & Le Breton-Miller, 2006). Relative to diversifying into international markets, diversification in local markets potentially targeting different segments of customers also allows a family CEO to create a positive image of the family in the local region (Banalieva et al., 2011).

In contrast, a nonfamily CEO is likely to be less emotionally attached to the family firm (Miller et al., 2013; Minichilli et al., 2014). There may be an incongruity between the goals of the nonfamily CEO and the dominant family (Gomez-Mejia et al., 2001). This implies a nonfamily CEO may be less likely to frame strategic decisions with reference to pursuing family-centered goals. Moreover, due to the information asymmetry problem, a nonfamily CEO may not be able to fully understand the importance of the pursuit of family-centered goals for the family coalition and thus be less likely to pursue family-centered goals (Chrisman, Memili, & Misra, 2014). This suggests that family

firms with a nonfamily CEO will be less concerned about the pursuit of family-centered goals in terms of retaining family decision-making control of the firm and perpetuating a positive reputation for the family business and less likely to prefer product diversification to international diversification than firms with a family CEO.

Second, from a resource perspective, a major role of CEOs is to integrate different views of the top management team. They are often considered ‘cognizers’ of the firm and required to have high cognitive ability (Calori et al., 1994). Product diversification, and internal product diversification, in particular, will provide family CEOs with an opportunity to transfer their tacit knowledge across departments of the firm. Due to their tacit knowledge and idiosyncratic managerial capabilities, family CEOs are argued to be efficient in orchestrating and transferring resources via internal development (Li, 2017). Prior research has shown that family CEOs are likely to utilize their knowledge to facilitate the innovation process of the family firm (Duran et al., 2015). However, such advantage of utilizing firm-specific knowledge is less likely to be leveraged via international diversification. Moreover, family CEOs are likely to have limited exposure to external environments (Zona, 2016), which will also make international diversification less likely. Based on these arguments, I propose the following hypothesis:

Hypothesis 10: Family firms with a family CEO will rely more on product diversification than international diversification in comparison to those without a family CEO.

### ***The Effect of Family Representation in the TMT***

Top managers play an important role in our understanding of a firm’s diversification (Hambrick & Mason, 1984; Sun et al., 2017; Tihanyi et al., 2000). As

such, I expect that the representation of family members in the TMT is likely to affect a family firm's preference for these two types of diversification, i.e., product and international diversification. Consistent with my previous arguments regarding the relationship between family firms' goals, governance, and resources and diversification preference, I expect that the representation of family executives is likely to be positively associated with a family firm's propensity towards product diversification rather than international diversification. First, a large representation of family members in the TMT will provide the controlling family with high power and discretion to pursue family-centered goals, including maintaining family decision-making control of the firm and perpetuating a positive reputation for the family firm, and thus show a stronger preference for product to international diversification.

Second, from a resource perspective, I also expect that family firms with a large representation of family executives are more likely to choose product rather than international diversification. A firm's decision on scope change is often formulated and implemented by top managers and the cognitive ability of top managers to process information is an important factor in affecting a firm's expansion (Calori et al., 1994; Hutzschenreuter & Horstkotte, 2013; Wiersema et al., 1992). Family managers who are intimately familiar with the firm and its informal culture, customs, and unwritten rules (Miller, Minichilli, & Corbetta, 2013) often gain early and deep exposure to the family firm and develop a significant stock of knowledge and skills (Bertrand & Schoar, 2006; Miller et al., 2005; Stadler et al., 2018). Such deep levels of firm-specific expertise and tacit knowledge by family managers can facilitate the transfer of ideas and resources across departments internally (Sirmon et al., 2003) and the expansion of new product

segments in a local region rather than exploring opportunities in new geographic markets (Liang et al., 2014). Conversely, the advantage associated with the utilization of such tacit knowledge is less likely to be leveraged via international diversification. Thus, I hypothesize:

Hypothesis 11: The percentage of family members in the top management team of a family firm is positively related to the extent of using product diversification rather than international diversification.

### *The Effect of a Family Board Chair*

Decisions related to diversification are often influenced by the chair of the board (Dalton, Daily, Ellstrand, & Johnson, 1998). This is especially true in family firms where a family can exert influence on a firm's strategic decision-making by assuming the board chair position of the firm (Berrone et al., 2012). Consistent with my previous arguments regarding the relationship between family firms' goals and diversification preference, I expect that family firms with a family board chair are likely to have a stronger tendency to engage in product diversification than international diversification than those without a family board chair. The presence of a family board chair is likely to grant the dominant family power and discretion to make decisions that favor the pursuit of family-centered noneconomic goals including retaining family control of the firm and perpetuating a positive reputation for the firm and family. By having a family member serving as the chairperson of the board, the dominant family can exercise their influence over the firm's strategic decision-making (Berrone et al., 2012; Gomez-Mejia et al., 2007) and thus will prefer product diversification more. In addition, a family chairperson is likely to possess a deep level of tacit knowledge of the family and the firm, which can be used to facilitate



product diversification, specifically internal diversification (Minichilli et al., 2014). Thus, I hypothesize:

Hypothesis 12: Family firms with a family board chair will rely more on product diversification than international diversification in comparison to those without a family board chair.

### ***The Effect of Family Representation on the Board***

Family influence on a firm's behavior also comes through the representation of family members on the board of directors (Anderson & Reeb, 2004; Berrone et al., 2010; Chrisman & Patel, 2012; Jones, Makri, & Gomez-Mejia, 2008). I expect that a family firm's relative emphasis on product diversification over international diversification is associated with the representation of family directors on the board. On one hand, family members acting as directors can increase disproportionately the attention to family needs (Miller et al., 2013; Minichilli et al., 2014) and thus enhance the family impact on the business (Gomez-Mejia et al., 2011). Family firms with a large representation of family directors are likely to have more power and discretion to pursue family-centered goals such as retaining family control over the firm and thus have a stronger preference for product diversification than other family firms.

Moreover, family directors are likely to have strong locally rooted and grounded human and social capital and deep levels of firm-specific tacit knowledge can be used to facilitate product diversification. Consistent with my previous argument regarding the relationship between family firms' tendency to utilize their local firm-specific resources and their diversification preference, I expect that a larger representation of family directors is associated with a stronger preference for product diversification rather than

international diversification because this group of family firms is more likely to perceive the benefits associated with product diversification that allows them to utilize their strong local resources. Thus, I hypothesize:

Hypothesis 13: The percentage of family members on the board of a family firm is positively related to the extent of using product diversification rather than international diversification.

### *The Effect of Founding Generation Family Owners*

The family business literature has emphasized there is a distinction between firms run by founding and later generation family owners (Morck & Yeung, 2003; Pérez-González, 2006). The interests of succeeding family generations may be different from those of the founding generation (Fang et al., 2018; Miller et al., 2006). The generation of family members owning and controlling the family firm shall have important implication for our understanding of a family firm's relative emphasis on product versus international diversification.

From a goals perspective, the founding generation family owners tend to perceive the business as an extension of the family (Berrone et al., 2012) and are likely to have a high level of attachment to the firm (Chua et al., 1999; Fang et al., 2018; Gomez-Mejia et al., 2007; Le Breton-Miller & Miller, 2009). However, as family branches in later generations emerge, family influence becomes more dispersed (Gersick, Davis, Hampton, & Lansberg, 1997; Gomez-Mejia et al., 2007; Le Breton-Miller et al., 2013). Specifically, as the firm transitions into subsequent generations, later generation family owners become less attached to the family firm and less concerned about the pursuit of noneconomic goals for the family (Chua et al., 1999; Fang et al., 2018; Gomez-Mejia et

al., 2007; Le Breton-Miller et al., 2013). As such, later generations of family owners will be less concerned about retaining family control for the firm, and they will be more interested in “cashing out” and using the family assets for their own personal purposes (Fiss & Zajac, 2004; Kammerlander & Ganter, 2014; Kotlar & De Massis, 2013). Indeed, Gomez-Mejia and colleagues (2007), in their study of family-owned olive oil mills from Spain, have shown that the willingness to give up family control is lowest at the founding generation and such willingness increases as firms move from the founding generation to later generations. As such, independent of financial considerations, losses in family control should weigh less heavily as family firms move from the founding generation to later generations. Consistent with my previous arguments regarding the relationship between family firms’ goals and diversification preference, I expect that family firms run by founding generation family members will rely more on product diversification than international diversification in comparison to family firms run by later generation family members.

From a resource perspective, I argue that founding generation family owners have typically been involved in the business since its inception and thus they are likely to have implicit and tacit knowledge of the firm (Duran et al., 2016). Such knowledge can facilitate entrepreneurial activity and innovation associated with product diversification, especially internal mode of diversification (Burgelman, 1983; Srivastava, & Lee, 2005). As the second and subsequent generations seek to enter the business, new generations may have acquired abilities and knowledge that the founder generation may not have and they may be impatient to demonstrate their capabilities by looking for strategic opportunities and fostering the business through international expansion and as such

create “space” for themselves (Fernández et al., 2005; Okoroafo & Perry, 2010). This suggests later generation family owners are likely to be more receptive to export involvement (Okoroafo et al., 2010). Anecdotal evidence can provide some support to this line of argument. For example, the Rothschild family adopted a geographic diversification strategy and had each of their five sons set up banking business in one of the era’s five principal European financial capitals including Frankfurt, Vienna, Paris, Naples, and Paris (Hughes, 2004). In this case, international diversification allowed the second generation Rothschild family members to use their talents and explore various international markets (Hughes, 2004). Thus, I hypothesize:

Hypothesis 14: Family firms run by founding generation family members will rely more on product diversification than international diversification in comparison to other family firms.

In sum, these relationships are depicted in the theoretical model in Figure 3.

## **Methodology**

### **Sample and Data Collection**

To test these hypotheses, I drew my sample from several sources including Standard and Poor’s (S&P) Compustat, the Center for Research in Security Prices (CRSP), Mergent Online, company proxy statements (DEF 14A), company annual reports (10-K), and company Web sites. Product and international diversification data was drawn from Compustat database and Center for Research in Security Prices (CRSP). Data on firm characteristics including ownership structure of the firm, family

management, and governance was manually collected from firms' proxy statements filed with the Securities and Exchange Commission (SEC)<sup>32</sup>.

Specifically, my sample consists of 573 manufacturing firms drawn from S&P 1500 for the fiscal years 1998 to 2017. I used the sample for the fiscal years 1998 to 2017 due to the differences in reporting information about operating segments of a firm pre- and post-1998 (Jiraporn, Kim, & Davidson, 2008; Kumar, 2009). In order to keep the industry background consistent, I focused my analysis on manufacturing firms with 4-digit SIC codes ranging from 2000 to 3999. Utility and service firms are subject to specific government regulations compared to other firms (Chrisman & Patel, 2012; Patel & Chrisman, 2014), and they are also less likely to engage in international actions (Fang et al., 2018). As such, these firms were not included in my analysis. To ensure the direction of causality, one-year lags between the dependent and other variables are used. The dependent variable is measured from 1999 to 2017, whereas the independent and control variables are measured from 1998 to 2016. Due to the longitudinal nature of data, I used fixed-effect longitudinal regression models to test all hypotheses<sup>33</sup>.

In total, initial data collection generated 578 firms representing 11,560 firm-year observations from 1998 to 2017 for further cleaning and analysis. Within this sample, I carried out an initial data cleaning. I replace missing values associated with sales generated from noncore businesses with zero. Likewise, I replace missing values associated with sales from foreign markets with zero<sup>34</sup>. The final sample yielded an

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<sup>32</sup> SEC is accessed via <https://www.sec.gov/>. This data collection process involved several hundred hours of work over a period of six months.

<sup>33</sup> Hausman test also confirmed the superiority of fixed effects model over random effects ( $p < 0.001$ ).

<sup>34</sup> There are 1,841 observations that foreign sales value equals to zero and 628 observations that noncore business sales equal to zero.

unbalanced panel dataset consisting of 573 firms representing 9,508 firm-year observations used to analyze the difference between family and nonfamily firms (H8), and 136 family firms representing 1,816 firm-year observations to analyze the heterogeneity hypotheses (H9 – H14).

## Measures

### *Dependent Variable*

*The relative emphasis on product over international diversification.* In this study, I am interested in examining the relative emphasis on these two types of diversification (i.e., product diversification and international diversification) in family and nonfamily firms, as well as in various types of family firms. Based on prior literature (Kumar, 2009), I used the following approach to measure product diversification. I first identified the core business segment of each firm as the segment with the largest sales. I then aggregated sales of the remaining segments to arrive at noncore business sales (Kumar, 2009). It is important to note that this measure captures entry into new markets as well as increasing presence in existing noncore businesses. Ideally, I would have liked to construct measures that captured only the number of new markets entered by the firm as well as the size of entry in each of these markets, but such detailed data were not available. From a theoretical standpoint, the fact that the measures may be capturing increasing presence in existing markets is consistent with my arguments. Even after a firm initially enters a particular product market, it is likely to face constraints in terms of replicating competences and learning, which may lead to support for the use of this measure (Kumar, 2009). Moreover, I measure product diversification using the ratio of a firm's sales generated from noncore businesses to sales in year  $t$  adjusted by subtracting

median industry-level noncore business sales to sales in the same year. I adopted the most commonly used measure of international diversification in the literature—the foreign sales ratio—defined as a firm’s foreign sales divided by the total sales of the firm (Kang, 2013; Pukall et al., 2014; Tallman & Li, 1996). I then industry-adjusted this value by subtracting median foreign sales to sales in the same year. Thus, the relative emphasis on product over international diversification is calculated by taking the *difference* between these two ratios<sup>35</sup>, specifically,

$$\text{Difference between product and international diversification} = \text{industry adjusted} \left( \frac{\text{sales from noncore businesses}}{\text{total sales}} \right) - \text{industry adjusted} \left( \frac{\text{sales from foreign markets}}{\text{total sales}} \right)$$

### ***Independent Variables***

*Family firms.* Consistent with prior literature (Anderson et al., 2003b; Chrisman & Patel, 2012; Gomez-Mejia et al., 2010; Villalonga et al., 2006), I use a binary measure of family firms. The binary family firm measure distinguishes family firms (=1) from nonfamily firms (=0) on the basis of ownership and family involvement in management and board of directors. I classify firms as family firms when the following two conditions are met: 1) at least 5% of shares held by the controlling family; 2) at least two family members who are or have been employed as significant owners, top managers, or directors in the firm’s history<sup>36</sup>. The advantage of this operationalization of the definition of a family firm is that it signals intra-family succession intention (Chrisman et al., 2012),

<sup>35</sup> As a robustness check, I also took the *ratio* of these two industry-adjusted values as an alternative measure for the relative emphasis on product over international diversification.

<sup>36</sup> Family member is a person who is related by blood or by marriage to the owning family. To further test if my results hold at various ownership threshold levels, I also used a more conservative definition of family control by using a measure of ownership where the family owns at least 10% or 20% of the equity and at least two family members who are or have been involved in the top management team or the board or as significant owners.

which is considered the essence in the definition of a family firm (Chua et al., 1999). This operationalization also allows me to separate “real” family firms from lone founder firms in which no relatives of the founder is involved in the firm. This distinction is important because these two groups of firms might display differences in their strategies and outcomes (Miller, Le Breton-Miller, & Lester, 2011; Miller et al., 2007).

*Family ownership.* Although family ownership has been used to classify family and nonfamily firms, it still significantly varies among family firms. Some family firms may have larger family ownership compared to others. Family ownership is measured as a continuous variable based on the overall percentage of shares owned by the controlling family (Anderson et al., 2003a; Fang, 2016). Since I am interested in the variation of family ownership in the family business population only, any firm with less than 5% of family ownership is not included in the analysis of the heterogeneity hypotheses.

*Family CEO.* I define family CEO as a dummy variable that takes a value of 1 when the CEO of the family firm is a family member and 0 otherwise<sup>37</sup>.

*Family board chair.* I define family board chair as a dummy variable that takes a value of 1 when the chair of the board is a family member and 0 otherwise<sup>38</sup>.

*Representation of family members in the TMT.* This variable is measured using the number of family executives divided by the total number of executives in the TMT<sup>39</sup>.

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<sup>37</sup> As a robustness check, I have also used the number of years that the CEO has worked in the firm as an alternative measure to capture the presence of a family CEO in the firm.

<sup>38</sup> As a robustness check, I have also used the number of years that the chair has worked in the firm as an alternative measure to capture the presence of a family board chair in the firm.

<sup>39</sup> As a robustness check, I have also used count variable to measure the representation of family members in the TMT.



*Representation of family members on the board.* This variable is measured based on the number of family directors divided by the total number of directors on the board<sup>40</sup>.

*Family firms run by founding generation family members.* This variable is defined as a dummy variable and takes a value of 1 when there is a founding generation family member in the TMT and/or the board and 0 otherwise.

### ***Control Variables***

I include a number of control variables in my analysis to account for alternative explanations of the relationship between family firms and the strength of the preference for product to international diversification. Consistent with prior literature (Xie & O'Neill, 2014), I control for influence of *firm age* and *firm size*. A firm's age can influence a firm's diversification (Autio, Sapienza, & Almeida, 2000). New firms will have fewer resources and lower level of structural complexity for diversification than established firms (Haveman, 1993). Firm age is calculated using the number of years since the firm was founded. Firm size is also argued to be positively associated with a firm's diversification (Fiegenbaum, Shaver, & Yeung, 1997). Firm size is measured as the natural logarithm of the total number of employees of the firm. In addition, I control for *advertising intensity* of a firm, which can also affect a firm' geographic and market expansion (Delios et al., 1999). Advertising intensity is calculated using advertising expense divided by total sales of the firm. I also controlled for a firm's *investment*

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<sup>40</sup> As a robustness check, I have also used count variable to measure the representation of family members on the board.

*intensity*, which is calculated as capital expenditures divided by plant property and equipment investment.

I control for *debt ratio* using debt-to-asset ratio in year  $t-1$  because debt ratio can affect a firm's strategies (Dean & Sharfman, 1996). I also included *past financial performance* in my regression models as a control variable as performance may affect strategic decisions in a firm (McNamara, Vaaler, & Devers, 2003; Su & Tsang, 2015). The performance of a firm in the past year is measured using industry-adjusted Tobin's Q in year  $t-1$  and ROA was used as a robustness check. I also control for a firm's *prior diversification experience*. Diversification is a phenomenon generally considered to be path-dependent (Teece et al., 1997). A firm's prior experience can affect a firm's subsequent diversification behavior (Jung, Beamish, & Goerzen, 2010; Mayer et al., 2014). A firm's prior diversification experience is measured using the *difference* between product and international diversification in year  $t-1$ <sup>41</sup>. Industry dummies measured at the two-digit SIC level and year dummies were also used to control for differences in diversification behavior across industries and years, respectively.

I have argued there will be differences in the strength of the preference for product to international diversification between family and nonfamily firms as well as among various types of family firms. It was important to make sure that my findings are not caused by other types of concentrated ownership. Thus, I also include the ownership structure of the firm (Tihanyi et al., 2003), specifically, *nonfamily blockholder ownership* as a control variable. Nonfamily blockholder ownership is measured based on the overall

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<sup>41</sup> The *ratio* of product to international diversification in year  $t-1$  is used as an alternative measure. I have also used industry-adjusted PD and industry-adjusted ID as two separate controls. Similar results were obtained.

percentage of blockholder ownership in year  $t-1$ . Moreover, prior research also shows that a firm's diversification is related to the CEO duality (Sanders et al., 1998). CEOs holding dual positions might be particularly able to pursue strategies that attend to the needs of the controlling family (Duran et al., 2016; Singla, Veliyath, & George, 2014). Thus, I also control for *family CEO duality* (when both the CEO and the board chair positions are assumed by a family member). Lastly, the *inverse Mills ratio* calculated to control for endogeneity is added as an additional control in all models.

### **Controlling for Endogeneity**

I used several approaches to mitigate endogeneity concerns, which may be caused by alternative explanations or the problem associated with reverse causality between the independent and dependent variables. First, as mentioned earlier, I manipulated one-year lags between the dependent variable and other variables to infer the direction of causality. Moreover, I included a firm's diversification experience in year  $t-1$  to control for reverse causality. Second, On the basis of Lee, Maddala, & Trost (1980), I adopt Heckman's (1979) two-stage technique. I used two instrumental variables that are highly related to the independent variables but are not related to the dependent variable to control for alternative explanations. I include *family firms' fraction of sales by industry* as an instrumental variable (Amit, Ding, Villalonga, & Zhang, 2015; Fang, 2016)<sup>42</sup>. This variable is naturally correlated with the probability that a firm in the industry is a family firm, however, they should not be correlated with the second-stage dependent variable

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<sup>42</sup> Initially, I included *family firms' fraction of capital expenditure by industry* and *family firms' fraction of advertisement expenditure by industry* as other instrumental variables. After running analyses, these variables were found not to significantly predict family firms, and thus were not included in my subsequent analyses.

(i.e., the relative emphasis on product over international diversification). *Family firms' fraction of sales by industry* is measured using the amount of sales by family firms in an industry divided by the total amount of sales in the same industry.

I also included *family trust holdings* affiliated with the largest owners of the firm in a given year as another instrumental variable (Fang, 2016). Family trust or foundations are often used by family firms as means to take care of the needs of their family members. Thus, family trust holdings are likely to be highly related to family business variables but should not be related to the dependent variable (i.e., the relative emphasis on product diversification over international diversification). Family trust holdings are measured as a binary variable in which 1 denotes the situation where the owner holds either trusts or foundations associated with family members and 0 otherwise. Data related to family trust holdings was manually collected from firms' proxy statement reports.

STATA package (version 13.0) was used for data analysis. Using Heckman's two-stage procedure, I first estimated a probit model in which family firms (=1) versus nonfamily firms (=0) was regressed against the two instrumental variables and other controls mentioned above. These predictors include nonfamily block holder ownership, firm age, firm size, debt to equity ratio, firm performance, advertising to sales ratio, new investment in plant and equipment, family trust holdings, family firms' fraction of sales by industry, and firm prior diversification experience (Anderson et al., 2003b). Based on the first-stage regression, I calculated the inverse Mills ratio and included it in my second-stage models, which are used to test my hypotheses.

## Analyses

I took a number of steps to address important methodological issues that are common in panel data analysis. First, I employed a firm fixed effects model to attend to the potential issue of unobserved heterogeneity that might arise out of multiple observations per firm (Certo & Semadeni, 2006; Hsiao, 1985). The fixed effects model focuses on within-firm variation over time, so the coefficients are not biased by time-invariant firm heterogeneity (Greene, 2003). I conducted Hausman tests and the results confirmed the superiority of fixed effects model over random effects ( $p < 0.001$ ) (Hausman & Taylor, 1981). Accordingly, all analyses were estimated using the *xtreg* STATA command with fixed-effects option (*fe*). Second, a Woolridge test (Woolridge, 2002) and a Breusch-Pagan test (Breusch & Pagan, 1979) provided evidence of serial correlation and heteroskedasticity in my panel dataset. To control for these problems, I estimated robust standard errors using the Huber-White sandwich estimator clustered at the firm level (White, 1980). Specifically, I used the *vce(robust)* STATA command to obtain robust standard errors. Third, I also controlled for multicollinearity by examining correlation matrix of coefficient of *xtreg* model using the *estat vce, corr* STATA command<sup>43</sup>. I followed the threshold of 0.6 correlation recommended by Allison (1999). According to Allison (1999), correlation above 0.6 will be a major concern. The results obtained were well below 0.6, indicating multicollinearity is not a major concern. Finally,

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<sup>43</sup> Variance inflation factor (VIF) is designed to check for multicollinearity for pooled OLS regression. Since I used fixed effects models, I checked multicollinearity by examining correlation matrix of coefficient (Allison, 1999).

all variables were winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentile in response to extreme outliers in the data set<sup>44</sup>.

### Empirical Results

Variables included in my analysis are listed and defined in Table 30, along with their sources. Means, standard deviations, and correlations for the variables are presented in Table 31<sup>45</sup>. In general, family firms represent 19.3% of my sample, while lone-founder firms represent 7.9%. These numbers are comparable to other studies exploring publically traded family firms and lone-founder firms (Anderson et al., Chrisman & Patel, 2012; Fang, 2016; Miller et al., 2007). Consistent with prior literature, family firms are shown to have lower levels of product diversification (Gomez-Mejia et al., 2010) and international diversification (Arregle et al., 2012) than nonfamily firms.

As mentioned earlier, this study used Heckman's two-stage technique to partially control for endogeneity. Model 1 in Table 32 was the first-stage probit treatment model in which family firm as a binary variable was regressed against control and instrumental variables. I did not include lone founder firms, because lone founder firms are mutually exclusive from family firms. *Family trust holdings* ( $B=3.128, p<0.001$ ) and *family firms' fraction of sales by industry* ( $B=0.675, p<0.001$ ) are found to be significantly and positively related to the family business variable, suggesting that the selection of instrumental variables is appropriate. Model 2 of Table 32 tested Hypothesis 8, which predicts that family firms will rely more on product than international diversification in

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<sup>44</sup> I have also run all of the analyses with the full sample. Similar results were obtained.

<sup>45</sup> Comparison of the means, standard deviations, and ranges of all variables for family and nonfamily firms, as well as among various types of family firms are also provided and shown in Table 45, 46, 47, and 48.

comparison to nonfamily firms. The result shows that family firms do not have a significant influence on a firm's relative emphasis on product over international diversification ( $B=0.009, p>0.1$ ). In other words, there is no significant difference between family and nonfamily firms in their tendency to engage in product rather than international diversification. Therefore, H8 was not supported.

Models 3-9 (Table 33, 34, and 35) test heterogeneity hypotheses (H9 – H14) concerning the effects of family ownership, family CEO, family representation in the TMT, family board chair, family representation on the board, and founding generation family members on a family firm's tendency to engage in product rather than international diversification. Model 3 (Table 33) tests the effect of family ownership on a firm's stronger tendency to engage in product rather than international diversification. The result shows that family ownership is positively related to a firm's tendency to engage in product rather than international diversification, however, this relationship is not significant ( $B=0.0002, p>0.1$ ). Hence, H9 was not supported. Model 4 (Table 33) tests the effect of a family CEO on a firm's tendency to engage in product rather than international diversification. Consistent with my prediction, family CEO is found to have a significantly positive effect on a firm's tendency to engage in product rather than international diversification ( $B=0.051, p<0.1$ )<sup>46</sup>. This finding suggests that family firms with a family CEO present in the firm are likely to have a stronger tendency to engage in product rather than international diversification. Model 5 (Table 33) tests the effect of family representation in the TMT on a firm's tendency to engage in product rather than

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<sup>46</sup> I have also tested this hypothesis using the number of years the CEO has worked in the firm as an alternative measure for family CEO. The result shows a non-significant positive effect of family CEO on a firm's tendency to engage in product rather than international diversification ( $B=0.001, p>0.1$ ).

international diversification. The result shows that the representation of family executives in the TMT has a significantly positive effect on a firm's tendency to engage in product rather than international diversification ( $B=0.212, p<0.05$ ), suggesting that a larger representation of family executives will increase the possibility of engaging in product rather than international diversification and thus provides empirical support for H11.

Model 6 (Table 34) tests the effect of family board chair on a firm's tendency to engage in product rather than international diversification. The result shows that the effect of family chair is positive, but not significant ( $B=0.066, p>0.1$ )<sup>47</sup>. Therefore, H12 was not supported. Moreover, Model 7 (Table 34) tests the effect of family representation on the board on a family firm's tendency to engage in product rather than international diversification. The result shows that family directors have a positive effect on this tendency, however, this effect is not significant ( $B=0.101, p>0.1$ ). Therefore, H13 was not supported. Lastly, Model 8 (Table 34) tests the effect of family founding generation on a firm's tendency to engage in product rather than international diversification. The result shows that founding generation family has a non-significant negative effect ( $B=-0.016, p>0.1$ ). Therefore, H14 was not supported. Lastly, Model 9 in Table 35 has all the heterogeneity variables included and shows that *family CEO* ( $B=0.054, p<0.1$ ) and *family representation in the TMT* ( $B=0.215, p<0.05$ ) both have a significantly positive effect on a firm's tendency to engage in product rather than international diversification. These results are consistent with those obtained when they were analyzed separately.

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<sup>47</sup> Similar result was drawn when family chair is measured using the number of years the chair has worked in the firm ( $B=0.001, p>0.1$ ).



## Robustness and Post-hoc Tests

A number of measures were employed to establish the robustness of my results. First, in my analyses above, I have used the *difference* between product and international diversification to measure the dependent variable. As a robustness check, I have also used the *ratio* of product to international diversification to measure the emphasis on product over international diversification. These results are shown in Model 10-18 (Table 36-39). *Family representation in the TMT* is again found to have a significantly positive effect on a firm's tendency to engage in product rather than international diversification when the *ratio* measure is used ( $B=5.631, p<0.05$ ) (Model 14 of Table 37). However, the significantly positive effects of *family CEO* shown using the *difference* measure is not found when the *ratio* approach is employed ( $B=0.638, p>0.1$ ) (Model 13 of Table 37). Other results, all not significant, are consistent with those obtained when the *difference* measure is used.

Second, in my analyses above, I have used the threshold of 5% family ownership to define family firms. As a post-hoc test, I have also used the threshold of 10% family ownership to define family firms. Similar results were obtained<sup>48</sup>. Consistent with my prediction, *family representation in the TMT* is again shown to have a significantly positive effect on a firm's tendency to engage in product rather than international diversification ( $B=0.238, p<0.05$ )<sup>49</sup> (Model 20 of Table 40), suggesting the representation of family members in the TMT will increase the likelihood of using product rather than

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<sup>48</sup> The results reported herein are for H11 (family representation in the TMT) only. Other results are available upon request.

<sup>49</sup> I again tested the hypothesis using the *ratio* approach to measure the DV. However, the result shows a non-significant positive effect ( $B=2.985, p>0.1$ ).

international diversification in family firms. As a further robustness check, I have used the threshold of 20% family ownership to define family firms. Results obtained are similar to those obtained when a 5% or 10% family ownership threshold is used. *Family representation in the TMT* is found to have a significantly positive effect on a firm's tendency to engage in product rather than international diversification ( $B=0.339$ ,  $p<0.05$ )<sup>50</sup>. These results are reported in Table 40 (Model 19-20) and Table 41 (Model 21-22), respectively.

Third, in my data cleaning process above, I have replaced missing values associated with sales generated from foreign markets (i.e., international diversification) and sales from noncore businesses (i.e., product diversification) with zero. As a further check on the robustness of my results, I have dropped observations with missing values related to foreign sales and noncore business sales. This process leads to a sample of 5,564 firm-year observations and 435 firms for testing H8 and 853 firm-year observations and 91 family firms for testing heterogeneity hypotheses when family firms are defined using 5% threshold. The results are largely consistent with those obtained when the larger sample was used<sup>51</sup>. When 5% family ownership is used to define family firms, *family representation in the TMT* is shown to have significant positive effect on a firm's tendency to engage in product rather than international diversification ( $B=0.351$ ,  $p<0.01$ ). When 10% family ownership is used to define family firms, *family representation in the TMT* is again shown to have a significantly positive effect on a firm's tendency to engage

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<sup>50</sup> I again tested the hypothesis using the *ratio* approach to measure the DV. However, the result shows a non-significant positive effect ( $B=3.774$ ,  $p>0.1$ ).

<sup>51</sup> The results reported herein are for H11 (family representation in the TMT) only. Results for other hypotheses testing are available upon request.

in product rather than international diversification ( $B=0.429, p<0.01$ ). Further, when 20% family ownership is used to define family firms, the effect of *family representation in the TMT* is significantly positive ( $B=0.624, p<0.001$ ). These results are reported in Models 23 and 24 (Table 42), Models 25 and 26 (Table 43), and Models 27 and 28 (Table 44), respectively.

Further, in my analyses above, I have used the number of family executives in the TMT as a percentage of total number of executive members to measure *family representation in the TMT*. As a further robustness check, I have used the count variable as an alternative measure for *family representation in the TMT*. Results drawn are largely consistent with those obtained when a percentage measure was used. Specifically, based on a sample with observations that noncore sales and foreign sales values are missing and deleted, and the DV measured using the *difference* approach, and family firms defined using 5% family ownership, *family representation in the TMT* has a significantly positive effect ( $B=0.05, p<0.05$ ). Using a sample with observations that noncore sales and foreign sales are missing and deleted, and family firms defined using 10% family ownership, *family representation on the TMT* has a significantly positive effect ( $B=0.056, p<0.05$ ). Based on a sample with observations that noncore and foreign sales are missing and deleted, and family firms defined using 20% family ownership, *family representation in TMT* has a significantly positive effect ( $B=0.087, p<0.01$ ). Finally, when the full sample was used and the DV is measured using the *difference* approach, the effects of *family representation in the TMT* are shown as follows for 5%, 10%, and 20% family

ownership, respectively: ( $B=0.037, p<0.05$ ), ( $B=0.038, p<0.05$ ), and ( $B=0.056, p<0.01$ )<sup>52</sup>.

Lastly, given that few significant results were observed in my study, it is important to calculate the power of my statistical tests to make sure I did not fail to detect any significant relationship. Statistical power, or  $1-\beta$ , is a function of significance level  $\alpha$ , sample size, and population effect size (Cohen, 1988). I use G\*Power program to calculate the power of my statistical tests. G\*Power is a power analysis program commonly used in the social, behavioral, and biomedical sciences (Faul Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007; Wilden, Gudergan, Nielsen, & Lings, 2013). Based on inputs related to effect size,  $\alpha$  error probability, total sample size, and number of predictors, a post hoc power is computed. An illustration of the power calculation using G\*Power is reported in Figure 2. The post-hoc power test revealed that statistical power of each regression model was well above the commonly accepted threshold of 0.8 (Cohen, 1992). Specifically, the statistical power of the regression model had high post-hoc power ranging from 0.99 and 1. The powers of these models are presented with the regression results in the attached tables. These results further strengthen confidence in my results.

## Discussion and Conclusions

Firms seeking to expand the scope of their activities can do so by engaging in product or international diversification or both (Hutzschenreuter et al., 2009; Kumar, 2009; Mayer et al., 2014). Family firms are found to have lower levels of diversification

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<sup>52</sup> Detailed results to these tests are available upon request.

in both product (Anderson et al., 2003a; Gomez-Mejia et al., 2010) and international dimensions (Fang et al., 2018; Pukall et al., 2014). At the same time, research shows the prevalence of large-scale family firms (e.g., Villalonga et al., 2006). This suggests while family firms are more reluctant to make such investments, family firms do invest in diversification. This naturally raises a question of which type of diversification family firms are more likely to choose once they decide to diversify. Thus, this essay sets out to answer the following research question—*when family firms decide to diversify, which type of diversification (product versus international diversification) are they more likely to choose relative to nonfamily firms?*

There is a growing recognition that the essence of family influence on a firm's behaviors and strategies can be understood based on three pillars—goals, governance, and resources (Chrisman et al., 2013; Chua et al., 2012; Daspit, Chrisman, Sharma, Pearson, & Long, 2017). Family firms are argued to have unique family governance, pursue family-centered goals, and possess idiosyncratic resources (Chrisman et al., 2013; Daspit et al., 2018). Based on insights drawn from the goals, governance, and resources framework, I theorize and test that family firms will be more likely to rely on product rather than international diversification in comparison to nonfamily firms (H1). Given that family firms are a largely heterogeneous group (Chua et al., 2012; Melin & Nordqvist, 2007), I further propose and test that different types of family firms are likely to exhibit different levels of preference for product diversification and international diversification. Specifically, family firms with larger percentages of family ownership (H9), the presence of a family CEO (H10), larger representations of family executives (H11), the presence of a family board chair (H12), larger representations of family

directors (H13), and the presence of founding generation family owners (H14) are likely to exhibit stronger preferences for product to international diversification.

Based on a sample of publicly held manufacturing firms drawn from the S&P 1500 index, I found that *family representation in the TMT* has a significantly positive effect on a firm's propensity towards product rather than international diversification. This finding is consistent with my prediction. This finding is robust when the dependent variable is measured using either the *difference* or the *ratio* approach. Likewise, this finding is robust when different family ownership threshold is used to define family firms. Lastly, this finding is robust when family representation in the TMT is measured using either the percentage of family executives divided by the total number of executives or the count measure based on the number of family executives.

The top management team are senior office executives in a firm, such as the CEO, vice chairman, or executive vice president. The interaction and demography of the TMT play an important role in strategy formation of an organization. The importance of the background, experiences, and values of top managers in influencing the choices they make has long been emphasized in the upper echelon literature (e.g., Finkelstein & Hambrick, 1990; Hambrick & Mason, 1984). The upper echelon theory purports that firm behavior is a "reflection" of the characteristics and actions of the top management team (Carpenter & Fredrickson, 2001; Hambrick, 2007). Family firm, like other organizations, is often managed by a team or group of individuals whose collective dynamics has a direct impact on the firm's decisions (Ensley & Pearson, 2005).

In recent years, there is a growing number of studies investigating the involvement of family members in leadership positions and its implications on a family

firm's behaviors (e.g., Patel et al., 2014; Stadler et al., 2018). From a resource perspective, the endowment of social and human capital of top managers is central to the firm's strategic decisions. On one hand, family managers' early and close involvement in the firm helps them develop valuable human and social capital that can be used for product diversification. The social capital of family managers can therefore generate a substantial positive impact on product diversification behavior. Further, as family representatives in the TMT increases, top management teams become more homogeneous (König et al., 2013; Sirmon et al., 2003). Their homogeneous background is argued to be associated with "local search" (König et al., 2013), thus facilitating the choice of locally product diversification. In addition, the particularistic and long-term socialization process of these top family executives within the firm is likely to facilitate the transfer of tacit knowledge and social capital in family firms (Bammens et al., 2015; Stadler et al., 2018; Verbeke & Kano, 2012), thus providing extra incentives for them to choose product rather than international diversification. On the other hand, in family firms, family executives are likely to spend their entire careers in the firm. Upper echelons research suggests that executives who have long tenure in the firm are likely to have limited perspectives towards issues (Hambrick et al., 1984). This would suggest these long-tenured family executives probably have restricted knowledge base, which will not be conducive for addressing problems brought by international diversification that often involves deregulation (Hambrick et al., 1984; Carpenter et al., 2001).

While the *representation of family executives in the TMT* is found to have a significantly positive effect on a firm's tendency to engage in product rather than international diversification, the effects of the other heterogeneity variables are not

significant. This may be explained by the literature that suggests differences in the governance structures in terms of the level of family ownership, family participation in the TMT and the board have important implications for our understanding of differences in goals and resources of family firms and their strategic behaviors (e.g., Chrisman et al., 2013). At the same time, there is also a growing recognition that different governance structures are likely to influence a family firm behavior differently (e.g., Daspit et al., 2018). For example, the CEO and the TMT may differ from one another in influencing a firm behavior, because they possess different power and status (Carpenter & Wade, 2002). The significant finding of family representation in the TMT on a family firm's diversification preference provides empirical evidence to support the notion that different governance structures play different roles and have various levels of importance in influencing a family firm behavior.

Regarding the insignificant findings in this study, particularly the effect of family firms on a firm's relative emphasis on product over international diversification, there are several alternative explanations. From a goals perspective, both product and international diversification are considered risky decisions (Lee et al., 2010), and entail the loss of decision-making control for the family firm. For example, product diversification may erode family control because of the need to bringing in outside expertise (Gomez-Mejia et al., 2010). This literature, to a certain extent, explains why family firms have no stronger preference for product to international diversification. Further, while retaining family control is considered a dominant goal in family firms' decision-making (Chrisman, Chua et al., 2012; Gomez-Mejia et al., 2007), family firms' decisions are likely to be driven by other types of goals such as preserving the business for future



generations. Family business owners may be motivated to exploit international opportunities in order to create employment for themselves and for their offspring, especially when owners are long-term oriented and view their firm as an asset to pass onto their descendants (Casson, 1999; Sciascia et al., 2012; Zahra, 2005). Future research is recommended to study how different types of family firms' goals interact with one another and together influence a family firm's diversification behavior.

From a resource perspective, I have argued product diversification will allow family firms to transfer sticky resources across the firm and thereby support more efficient resource orchestration within the family firm (Duran et al., 2016). As such, family firms are likely to be more attracted to product than international diversification. Insights drawn from the foreign direct investments literature suggest that international diversification can be understood from two dimensions—geographic scope (or breadth) and geographic scale (or depth) (Goerzen & Beamish, 2003; Lu & Beamish, 2004). The geographic scope captures the diversity of its international operations, whereas the geographic scale captures the degree of a firm's involvement in international markets (Goerzen et al., 2003; Lu et al., 2004). Family business researchers have shown while family firms have unique challenges in managing complexity resulting from expanding in multiple and diverse foreign markets, family firms have fewer challenges in managing the amount of international scale (Arregle et al., 2017). Future studies are recommended to take both scope and scale dimensions of internationalization into account to gain an even better understanding about family firms' product and international diversification.

This study makes several theoretical contributions to the current literature. First, while prior literature has shed important insights on the level of diversification in family

firms (Gomez-Mejia et al., 2010), our knowledge related to which type of diversification family firms are more likely to choose relative to nonfamily firms remains limited. Thus, the focus of my study of diversification types in family firms enhances our knowledge of diversification behavior in family firms. Our finding that a large representation of family executives suggests a stronger tendency for product rather than international diversification confirms the combined effects of goals, governance and resources on a firm's behavior.

Second, this study contributes to the advancement of a theory of the family enterprise. Family business scholars have borrowed theories from domains including management, finance, and economics (Barney, 1991; Cyert et al., 1963; Jensen & Meckling, 1976; Williamson, 1975). Although many insights have been derived from the application and extensions of these theories, there is a need to advance the field of family businesses through the development of a theory of the family enterprise. Based on insights drawn upon the goals, governance, and resources framework, this study extends our knowledge of the application of this framework and improves our knowledge of the essence of family influence on a firm's behavior.

Third, this study also contributes to the mainstream diversification literature. There is a long tradition of investigating the scope of a firm in terms of its international activities and the product-market in which firms participate (Rumelt, 1974; Sakhartov, 2017). The majority of prior research has investigated these two types of diversification separately. By considering product and international diversification simultaneously and assessing the relative extent of these two types of diversification, this study helps to provide a finer-grained understanding of a firm's diversification strategies. As such, this

study advances the current diversification literature, specifically the influence of dominant collation on a firm's choice of diversification strategy.

Aside from its contributions, my study has several limitations that represent opportunities for future research. First, my study uses a convenience sample of publicly held manufacturing firms drawn from the S&P 1500 index. These firms are quite diverse particularly with respect to size. Although the restrictions I imposed on my sampling frame render the assessment of how family involvement affects a firm's choice of diversification strategy more reliable, future research using other sampling frames is warranted since my results may not be generalizable to private firms, smaller firms, firms outside of the U.S., or firms in other industries. Second, consistent with previous studies (Berrone et al., 2010; Chrisman & Patel, 2012; Gomez-Mejia et al., 2007), I use family ownership and management as a proxy to capture the pursuit of family goals and the possession of idiosyncratic familiness. I argue that different levels of family involvement in the firm lead to differences in the level and type of family goals they pursue and in the stock of resources. Future research can use other research designs such as a survey methodology that will allow capturing the essence of family influence, family goals, and familiness directly. Third, I have adopted a general approach in my discussion of product diversification and international diversification. Consistent with prior literature (Lee & Lieberman, 2010), my discussion of product diversification focuses on internal direct development and acquisitions, and related and unrelated diversification. While in consideration of other foreign market entry modes, my discussion of international diversification focuses on exporting activities since exporting is considered the most prevalent form of international expansion (Shaver, 2011). Future studies are also

recommended to take a finer-grained approach to discuss the implications of goals, governance, and resources on the choice of different types of diversification in family and nonfamily firms.

In conclusion, this study uses the goals, governance, and resources framework to investigate diversification types in family firms. I theorize and test that family firms are likely to use product diversification rather than international diversification to a larger extent than nonfamily firms. The same prediction is made for family firms with a family CEO, a family board chair, and a large percentage of family ownership, a large representation of family executives, a large representation of family directors, and family firms controlled by the founding generation family owners. An empirical analysis of manufacturing firms drawn from the S&P 1500 between 1998 and 2017 shows family firms with a large representation of family executives in the TMT have a stronger tendency to engage in product rather than international diversification; however, other hypotheses were not supported.

Table 28 The characteristics of product diversification and international diversification

	Product diversification	International diversification
Resources	<ul style="list-style-type: none"> <li>- requires a firm’s competences and capability to manage a diversified product portfolio</li> <li>- can leverage local resources and firm-specific tacit resources and knowledge</li> <li>- high levels of transferability of a firm’s resources can facilitate product diversification, specifically, internal diversification</li> </ul>	<ul style="list-style-type: none"> <li>- requires managerial competence and ability to develop and coordinate across the global web of subsidiaries; requires external ties, particularly in the international arena, such as with foreign governments; unlikely to leverage the advantages of local resources and connections</li> <li>- less likely to leverage the benefits associated with high transferability of existing resources, because the transferring of resources often necessitates close contact between transferors and potential recipients</li> </ul>
Risks	<ul style="list-style-type: none"> <li>- risks and uncertainty associated with the development of new products, technologies, and capabilities</li> <li>- risk of diluting family ownership control of the firm associated with external diversification due to stock swaps and risk of losing family control over the strategic-decision due to the hiring of nonfamily managers</li> <li>- geographically closer to the focal firm and more familiar to the firm, which can facilitate the perpetuating of a positive reputation</li> </ul>	<ul style="list-style-type: none"> <li>- face social, political, and legal risks and unknown “rules of engagement” in a foreign country</li> <li>- risk of diluting strategic control over a firm’s decision making, e.g., exporters generally lack in the control of market access to a foreign country</li> <li>- geographically more distant and less familiar to the focal firm, which makes it harder to maintain a consistent reputation for the family firm</li> <li>- risk of know-how being expropriated by their partners in the foreign country</li> </ul>

Table 29 The perceptions of family firms and nonfamily firms on product diversification and international diversification

<p>Decision-making control</p>	<p><u>In comparison to nonfamily firms, family firms are more likely to perceive that the loss of decision-making control associated with international diversification is greater than the loss of decision-making control associated with product diversification.</u></p> <ul style="list-style-type: none"> <li>- Unlike nonfamily firms, family firms are driven by the goal of remaining and exerting family strategic control over the firm.</li> <li>- While product diversification, especially internal diversification, is likely to provide a family firm with total strategic control of the firm, product diversification may entail the loss of family control over strategic decision-making due to the employment of nonfamily managers.</li> <li>- International diversification is likely to dilute the family’s ability to exercise decision-making control of the firm. For example, the exporting mode generally lacks in providing marketing control for the firm. The exporter, especially through the distributor, sometimes only has indirect control with export operations locally in the export market.</li> <li>- Compared to the type of control loss associated with international diversification, family firms may be less reluctant to avoid the type of control loss associated with product diversification because the employment of nonfamily managers is still under the control of the controlling family.</li> </ul>
<p>Utilization of firm-specific resources</p>	<p><u>In comparison to nonfamily firms, family firms are more likely to perceive the benefits associated with product diversification that allows them to utilize the strong local resources.</u></p> <ul style="list-style-type: none"> <li>- Unlike nonfamily firms, family firms are argued to have particularly strong local connections and resources. Social capital and tacit knowledge of family managers is argued to be particularly effective in limiting the coordination costs associated with product diversification.</li> <li>- Product diversification, especially internal diversification, allows family firms to transfer their ‘sticky’ tacit resources such as ideas and resources across departments and thereby support more efficient resource orchestration within the family firm.</li> <li>- International diversification often requires foreign assignments of family managers, and the increase of physical and cultural distance can reduce interactions among family members, thus adding the difficulty of sustaining the extent of interaction and interdependence required to maintain the advantages of family-based social capital.</li> </ul>

Table 29 (continued)

<p>Risk of knowledge expropriation</p>	<p><u>In comparison to nonfamily firms, family firms are likely to perceive the risk of knowledge expropriation resulting from international diversification to be greater because they have emotional and financial attachment to the existing resources and assets.</u></p> <ul style="list-style-type: none"> <li>- Unlike nonfamily firms, family firms are argued to have a strong attachment to their existing resources and assets.</li> <li>- International diversification is likely to entail the risk of disseminating firm-specific know-how such as technological and marketing know-how to external parties. For example, while exporters generally need to acquire new knowledge related to foreign market in order to compete in where they have little or no previous experience, they often face the risk of reverse engineering by a foreign partner.</li> <li>- Conversely, product diversification, internal diversification, in particular, can provide safeguards to protect the value of the existing resources and knowledge of the family firm and thus help keep control of the firm's resources.</li> </ul>
<p>Risk of threatening family image and reputation</p>	<p><u>In comparison to nonfamily firms, family firms are likely to perceive the risk of threatening family image and reputation as a result of international diversification to be greater because international diversification might put the reputation of the firm, the family, as well as family members at risk.</u></p> <ul style="list-style-type: none"> <li>- While all firms are concerned with building a positive reputation, family firms are particularly sensitive to protect and enhance their image and reputation.</li> <li>- Product diversification is likely to allow family firms to benefit from the exploitation of an established family "name" and the acceptance in the regional market.</li> <li>- Firms expanding internationally need to face greater uncertainty and increased risks associated with a less familiar environment. For example, an untrustworthy partner in an exporting relationship can prevent a firm from meeting its customers' demands and thus threaten the family firm's reputational capital.</li> <li>- International diversification requires a firm's norms to be adapted to foreign cultures and thus leads to the destabilization of social relations within the family, which may dilute a consistent image of the family firm and the projection of the family owners onto that image.</li> </ul>

Table 30 Summary of variables and measures – Essay 2

Variable	Definition/Measure
<i>Dependent Variable</i>	
Industry-adjusted relative emphasis on product diversification over international diversification	Difference between industry-adjusted product diversification (i.e., sales generated from noncore businesses divided by total sales) and industry-adjusted international diversification (i.e., sales from foreign markets divided by total sales); Ratio of industry-adjusted product diversification to industry-adjusted international diversification as an alternative measure; Source: Compustat
<i>Independent Variables</i>	
Family Firm	Family firm is a binary variable; 1 indicates presence of family. Two conditions are required to be considered a family firm: 1) at least 5% of the firm's equity hold by the family; 2) at least two family members involved in the firm as insiders (officers or directors) or large owners; 10% and 20% of the firm's equity hold by the family as alternative measures; Source: Firm Proxy; Mergent Online; Company Web Site.
Family Ownership	The total voting share expressed as a percentage of total outstanding shares owned by the controlling family; Source: Firm Proxy; Company Web Site.
Family CEO	Family CEO is a binary variable; 1 indicates that any family member holds the title of chief executive officer (CEO); The duration of the CEO working in the firm as an alternative measure; Source: Firm Proxy.
Family Board Chair	Family board chair is a binary variable; 1 indicates that any family member holds the title of chairman of the board; The duration of the board chair working in the firm as an alternative measure; Source: Firm proxy.
Family Representation in the TMT	The number of family executives in the TMT as a percentage of total number of executive members; Count variable as an alternative measure; Source: Firm Proxy.
Family Representation on the Board	The number of family directors on the board as a percentage of total number of directors; Count variable as an alternative measure; Source: Firm Proxy.
Founding Generation Family	A binary variable; 1 indicates a family firm with family member(s) present from the founding generation. Source: Firm Proxy; Company Web Site; Other public web source.



Table 30 (continued)

<i>Control Variables</i>	Definition/Measure
Firm Age	Calculated in years as the difference between the data year and the firm's founding year; Source: Firm Proxy; Mergent Online; Company Web Site; Other public web source.
Firm Size	The natural log of total number of employees of the firm; The natural log of annual net sales as an alternative measure; Source: Compustat.
Debt to Equity Ratio	Calculated as the values of total debt divided by the market value of common equity; Source: Compustat.
Tobin's Q	Tobin's Q is the ratio of the firm's market value to book value and is calculated as follows: ((common shares outstanding * calendar year closing price) + (current liabilities - current assets) + (long-term debt) + (the liquidating value of preferred stock)) divided by (total assets). Source: Compustat.
Industry Adjusted Tobin's Q	Calculated as firm Tobin's Q minus median industry Tobin's Q at a two digit SIC; Source: Compustat.
Return on Assets (ROA)	ROA is calculated as income before extraordinary items divided by total assets of the firm. Source: Compustat.
Industry Adjusted Prior Diversification Experience Advertising	Industry-adjusted relative emphasis on product over international diversification in year $t-1$ ; Source: Compustat.
Investment	Advertising expense ratio is calculated as advertising expense divided by total sales. Firms with missing data were coded =0. Source: Compustat.
Nonfamily Block Holder Ownership	Investment ratio is calculated as capital expenditures divided by plant property and equipment. Firms with missing data were coded =0. Source: Compustat.
Family CEO Duality	Calculated as the total percentage of shares hold by all nonfamily block holders. Block holders are individuals or institutions listed in the firm proxy as beneficial owners of at least 5% of the firm. Source: Firm Proxy.
Lone Founder	A binary variable; 1 indicates when both the CEO and the board chair positions are assumed by a family member. Source: Firm Proxy; Company Web Site; Other public source.
Family Trust Holdings	Lone founder firm is a binary variable; 1 indicates a lone founder's involvement. Lone founder firms are defined as those in which an individual is one of the company's founders with no other family members involved, and is also an insider (officer or director) or a large owner (5% or more of the firm's equity). Source: Firm Proxy; Company Web Site; Other public sources.
Family Firm's Fraction of Sale by Industry	A binary variable; 1 indicates family trust or foundations are set up in the family firm. Source: Firm Proxy.
	Calculated as the amount of sales by family firms in a particular industry divided by the total amount of sales in that industry; Source: Compustat.

Table 31 Descriptive statistics and correlation – Essay 2

	Mean	S.D.	1	2	3	4	5	6	7	8
1. Difference between PD and ID	0.081	0.480	1.000							
2. Ratio of PD to ID	0.055	8.420	-0.019	1.000						
3. Industry Adjusted PD	0.128	0.388	0.720***	0.011	1.000					
4. Industry Adjusted ID	0.047	0.329	-0.603***	0.044***	0.113***	1.000				
5. Family Firm	0.193	0.394	-0.051***	-0.032**	-0.073***	-0.011	1.000			
6. Family Ownership	6.600	17.496	-0.057***	-0.023*	-0.062***	0.009	0.771***	1.000		
7. Lone Founder	0.079	0.269	0.031**	-0.015	-0.051***	-0.101***	-0.138***	-0.107***	1.000	
8. Family CEO	0.114	0.318	-0.048***	-0.026*	-0.098***	-0.043***	0.688***	0.559***	-0.059***	1.000
9. Family Rep in the TMT	0.039	0.105	-0.042***	-0.011	-0.087***	-0.041***	0.720***	0.605***	-0.070***	0.816***
10. Family Chair	0.152	0.359	-0.051***	-0.027**	-0.070***	-0.006	0.808***	0.675***	-0.057***	0.808***
11. Family Rep on the Board	0.040	0.093	-0.066***	-0.021*	-0.079***	0.003	0.853***	0.737***	-0.090***	0.714***
12. Founding Generation Family	0.096	0.294	-0.049***	-0.023*	-0.095***	-0.040***	0.597***	0.421***	-0.006	0.573***
13. Family CEO Duality	0.107	0.309	-0.052***	-0.025*	-0.103***	-0.044***	0.677***	0.554***	-0.072***	0.946***
14. Nonfamily Block Holder	4.148	9.726	-0.025*	-0.034***	-0.083***	-0.059***	0.592***	0.306***	-0.058***	0.446***
15. Family Trust Holdings	0.176	0.381	-0.063***	-0.024*	-0.071***	0.010	0.903***	0.733***	-0.069***	0.613***
16. Firm Age	50.805	40.302	0.026*	0.010	0.152***	0.140***	0.071***	0.083***	-0.190***	-0.025*
17. Firm Size (ln)	1.493	1.710	-0.005	0.022*	0.232***	0.277***	-0.058***	-0.013	-0.224***	-0.117***
18. Debt to Equity Ratio	0.269	0.413	0.036***	-0.007	0.074***	0.035***	0.025*	0.029**	-0.066***	0.033**
19. Industry Adjusted Tobin's Q	0.392	1.512	-0.068***	0.002	-0.131***	-0.053***	-0.044***	-0.030**	0.067***	-0.051***
20. Advertising	0.012	0.028	-0.093***	0.001	-0.027**	0.100***	0.157***	0.234***	-0.006	0.081***
21. Investment	0.107	0.084	-0.080***	-0.011	-0.128***	-0.033**	-0.016	-0.021*	0.141***	0.020
22. FFs' Sale by Industry	0.145	0.136	-0.040***	-0.026**	-0.041***	0.010	0.183***	0.156***	0.023*	0.112***

Table 31 (continued)

	9	10	11	12	13	14	15	16
9. Family Representation in the TMT	1.000							
10. Family Chair	0.808***	1.000						
11. Family Representation on the Board	0.787***	0.824***	1.000					
12. Founding Generation Family	0.656***	0.657***	0.616***	1.000				
13. Family CEO Duality	0.796***	0.807***	0.705***	0.575***	1.000			
14. Nonfamily Block Holder	0.419***	0.498***	0.490***	0.438***	0.425***	1.000		
15. Family Trust Holdings	0.655***	0.761***	0.812***	0.582***	0.602***	0.524***	1.000	
16. Firm Age	-0.035***	0.022*	0.065***	-0.163***	-0.021*	0.023*	0.079***	1.000
17. Firm Size (ln)	-0.130***	-0.090***	-0.090***	-0.135***	-0.116***	-0.105***	-0.04***	0.440***
18. Debt to Equity Ratio	0.026*	0.029**	0.014	-0.024*	0.039***	0.0133	0.009	0.070***
19. Industry Adjusted Tobin's Q	-0.038***	-0.058***	-0.048***	0.011	-0.050***	-0.046***	-0.033**	-0.141***
20. Advertising	0.144***	0.167***	0.168***	0.057***	0.076***	0.058***	0.187***	0.110***
21. Investment	0.031**	0.008	0.004	0.056***	0.017	-0.020*	-0.011	-0.262***
22. FFs' Fraction of Sale by Industry	0.091***	0.144***	0.158***	0.142***	0.115***	0.107***	0.193***	0.048***

	17	18	19	20	21	22
17. Firm Size (ln)	1.000					
18. Debt to Equity Ratio	0.190***	1.000				
19. Industry Adjusted Tobin's Q	-0.186***	-0.280***	1.000			
20. Advertising	0.072***	-0.081***	0.087***	1.000		
21. Investment	-0.253***	-0.175***	0.347***	0.088***	1.000	
22. FFs' Fraction of Sale by Industry	0.117***	0.097***	-0.016	0.073***	0.065***	1.000

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

Table 32 Fixed-effect longitudinal regression analysis: H8

	Model 1	Model 2
Dependent Variable	Family Firm	Difference between PD and ID
Sample	Family Firms and Nonfamily Firms	Family Firms and Nonfamily Firms
Family Business (H8)		<b>0.009</b>
Lone Founder Firm		0.004
Nonfamily Block Holder Ownership	0.044***	0.001 <sup>†</sup>
Firm Age	0.001	0.006
Firm Size (log value of employees)	-0.071***	-0.0002
Debt to Equity Ratio	0.204***	0.015
Industry Adjusted Tobin's Q	-0.050*	-0.002
Advertising	0.427	0.204
Investment	-0.071	-0.043
Family Trust Holding	3.128***	
Family Sales Ratio by Industry	0.675***	
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.075	0.548***
Inverse Mills Ratio		0.022
Constant	-2.282***	-0.279
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	9,508	9,508
Number of Firms	573	573
Absolute Log Likelihood	1180.015***	
Within R-Square		0.317
F-statistics		105.61***
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *difference* between PD and ID and family firms are measured using 5% family ownership threshold
2. PD refers to *product diversification*; ID refers to *international diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 1

Table 33 Fixed-effect longitudinal regression analysis: H9, H10, and H11

	Model 3	Model 4	Model 5
Dependent Variable	Difference between PD and ID	Difference between PD and ID	Difference between PD and ID
Sample	Family Firms	Family Firms	Family Firms
Family Ownership (H9)	<b>0.0002</b>		
Family CEO (H10)		<b>0.051<sup>†</sup></b>	
Family Representation in the TMT (H11)			<b>0.212*</b>
Nonfamily Blockholder Ownership	0.001	0.001	0.001
Family CEO Duality	-0.001	-0.042*	-0.016
Firm Age	0.024	0.023	0.026
Firm Size (log value of employees)	0.014	0.011	0.011
Debt to Equity Ratio	0.006	0.007	0.006
Industry Adjusted Tobin's Q	-0.005	-0.005	-0.006
Advertising	-0.392	-0.384	-0.557
Investment	-0.214 <sup>†</sup>	-0.209 <sup>†</sup>	-0.214 <sup>†</sup>
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.536***	0.537***	0.533***
Inverse Mills Ratio	0.017	0.019	0.016
Constant	-1.175	-1.138	-1.325
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,816	1,816	1,816
Number of Firms	136	136	136
Within R-Square	0.321	0.321	0.323
F-statistics	33.24***	34.16***	32.70***
Power (1- $\beta$ error prob)	1.00	1.00	1.00

Notes:

1. DV is measured using the *difference* between PD and ID and family firms are measured using 5% family ownership threshold
2. PD refers to *product diversification*; ID refers to *international diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 1

Table 34 Fixed-effect longitudinal regression analysis: H12, H13, and H14

	Model 6	Model 7	Model 8
Dependent Variable	Difference between PD and ID	Difference between PD and ID	Difference between PD and ID
Sample	Family Firms	Family Firms	Family Firms
Family Board Chair (H12)	<b>0.066</b>		
Family Representation on the Board (H13)		<b>0.101</b>	
Founding Generation Family (H14)			<b>-0.016</b>
Nonfamily Blockholder Ownership	0.001	0.001	0.001
Family CEO Duality	-0.018	-0.002	-0.001
Firm Age	0.023	0.026	0.021
Firm Size (log value of employees)	0.012	0.014	0.013
Debt to Equity Ratio	0.006	0.007	0.006
Industry Adjusted Tobin's Q	-0.005	-0.005	-0.005
Advertising	-0.400	-0.383	-0.367
Investment	-0.220*	-0.218 <sup>†</sup>	-0.217 <sup>†</sup>
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.537***	0.538***	0.537***
Inverse Mills Ratio	0.017	0.016	0.015
Constant	-1.179	-1.286	-1.033
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,816	1,816	1,816
Number of Firms	136	136	136
Within R-Square	0.322	0.321	0.321
F-statistics	36.30***	32.61***	33.98***
Power (1- $\beta$ error prob)	1.00	1.00	1.00

Notes:

1. DV is measured using the *difference* between PD and ID and family firms are measured using 5% family ownership threshold
2. PD refers to *product diversification*; ID refers to *international diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 1

Table 35 Fixed-effect longitudinal regression analysis testing all the heterogeneity hypotheses simultaneously

	Model 9
Dependent Variable	Difference between PD and ID
Sample	Family Firms
Family Ownership (H9)	<b>0.0001</b>
Family CEO (H10)	<b>0.054<sup>†</sup></b>
Family Representation in the TMT (H11)	<b>0.215<sup>*</sup></b>
Family Board Chair (H12)	<b>0.066</b>
Family Representation on the Board (H13)	<b>0.025</b>
Founding Generation Family (H14)	<b>-0.031</b>
Nonfamily Blockholder Ownership	0.001
Family CEO Duality	-0.076 <sup>*</sup>
Firm Age	0.021
Firm Size (log value of employees)	0.010
Debt to Equity Ratio	0.007
Industry Adjusted Tobin's Q	-0.005
Advertising	-0.595
Investment	-0.218 <sup>†</sup>
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.534 <sup>***</sup>
Inverse Mills Ratio	0.021
Constant	-1.119
Industry Dummies	Yes
Year Dummies	Yes
Number of Observations	1,816
Number of Firms	136
Within R-Square	0.325
F-statistics	33.19 <sup>***</sup>
Power (1- $\beta$ error prob)	1.00

Notes:

1. DV is measured using the *difference* between PD and ID and family firms are measured using 5% family ownership threshold
2. PD refers to *product diversification*; ID refers to *international diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 1

Table 36 Fixed-effect longitudinal regression analysis: robustness check on H8

	Model 10	Model 11
Dependent Variable	Family Firm	Ratio of PD to ID
Sample	Family Firms and Nonfamily Firms	Family Firms and Nonfamily Firms
Family Business (H8)		<b>-1.391</b>
Lone Founder Firm		-0.014
Nonfamily Block Holder Ownership	0.043***	-0.039
Firm Age	0.001	-0.230*
Firm Size (log value of employees)	-0.069***	0.331
Debt to Equity Ratio	0.185**	-0.021
Industry Adjusted Tobin's Q	-0.054*	0.029
Advertising	0.343	-0.538
Investment	-0.108	0.053
Family Trust Holding	3.102***	
Family Sales Ratio by Industry	0.591**	
Industry Adjusted Prior Diversification Experience (Ratio Measure)	-0.006 <sup>†</sup>	0.110***
Inverse Mills Ratio		-0.864
Constant	-2.247***	11.565*
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	9,130	9,026
Number of Firms	568	568
Absolute Log Likelihood	1136.238***	
Within R-Square		0.015
F-statistics		1.68*
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *ratio* of PD to ID and family firms are measured using 5% family ownership threshold
2. PD refers to *product diversification*; ID refers to *international diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 10



Table 37 Fixed-effect longitudinal regression analysis: robustness check on H9, H10, and H11

	Model 12	Model 13	Model 14
Dependent Variable	Ratio of PD to ID	Ratio of PD to ID	Ratio of PD to ID
Sample	Family Firms	Family Firms	Family Firms
Family Ownership (H9)	<b>0.037</b>		
Family CEO (H10)		<b>0.638</b>	
Family Representation in the TMT (H11)			<b>5.631*</b>
Nonfamily Blockholder Ownership	0.003	-0.004	-0.007
Family CEO Duality	0.593	0.024	0.101
Firm Age	3.725	3.727	3.785
Firm Size (log value of employees)	0.501	0.284	0.247
Debt to Equity Ratio	-0.626	-0.601	-0.629
Industry Adjusted Tobin's Q	0.201	0.214	0.209
Advertising	25.154	28.776	23.980
Investment	-1.296	-1.462	-1.322
Industry Adjusted Prior Diversification Experience (Ratio Measure)	0.194***	0.196***	0.195***
Inverse Mills Ratio	0.069	-0.125	-0.156
Constant	-180.128	-178.536	-182.148
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,674	1,674	1,674
Number of Firms	134	134	134
Within R-Square	0.050	0.048	0.050
F-statistics	2.35***	2.34***	2.45***
Power (1- $\beta$ error prob)	0.99	0.99	0.99

Notes:

1. DV is measured using the *ratio* of PD to ID and family firms are measured using 5% family ownership threshold
2. PD refers to *product diversification*; ID refers to *international diversification*
3. Unstandardized estimation coefficients are reported
4. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 10

Table 38 Fixed-effect longitudinal regression analysis: robustness check on H12, H13, and H14

	Model 15	Model 16	Model 17
Dependent Variable	Ratio of PD to ID	Ratio of PD to ID	Ratio of PD to ID
Sample	Family Firms	Family Firms	Family Firms
Family Board Chair (H12)	<b>-0.512</b>		
Family Representation on the Board (H13)		<b>-4.258</b>	
Founding Generation Family (H14)			<b>2.657</b>
Nonfamily Blockholder Ownership	-0.005	-0.007	-0.002
Family CEO Duality	0.666	0.539	0.433
Firm Age	3.740	3.648	4.113
Firm Size (log value of employees)	0.313	0.243	0.284
Debt to Equity Ratio	-0.613	-0.625	-0.644
Industry Adjusted Tobin's Q	0.211	0.218	0.215
Advertising	29.164	29.425	29.304
Investment	-1.529	-1.441	-1.234
Industry Adjusted Prior Diversification Experience	0.197***	0.196***	0.196***
Inverse Mills Ratio	-0.185	-0.213	-0.055
Constant	-178.742	-173.559	-198.258
Industry Dummies	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Number of Observations	1,674	1,674	1,674
Number of Firms	134	134	134
Within R-Square	0.048	0.049	0.050
F-statistics	2.35***	2.30***	2.29***
Power (1- $\beta$ error prob)	0.99	0.99	0.99

Notes:

1. DV is measured using the *ratio* of PD to ID and family firms are measured using 5% family ownership threshold
2. PD refers to *product diversification*; ID refers to *international diversification*
3. Unstandardized estimation coefficients are reported
4. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 10

Table 39 Fixed-effect longitudinal regression analysis: robustness check testing all the heterogeneity hypotheses simultaneously

	Model 18
Dependent Variable	Ratio of PD to ID
Sample	Family Firms
Family Ownership (H9)	<b>0.038</b>
Family CEO (H10)	<b>0.533</b>
Family Representation in the TMT (H11)	<b>5.172<sup>†</sup></b>
Family Board Chair (H12)	<b>-0.241</b>
Family Representation on the Board (H13)	<b>-6.890</b>
Founding Generation Family (H14)	<b>2.231</b>
Nonfamily Blockholder Ownership	0.002
Family CEO Duality	-0.210
Firm Age	3.949
Firm Size (log value of employees)	0.300
Debt to Equity Ratio	-0.700
Industry Adjusted Tobin's Q	0.204
Advertising	21.547
Investment	-0.613
Industry Adjusted Prior Diversification Experience (Ratio Measure)	0.191 <sup>***</sup>
Inverse Mills Ratio	0.139
Constant	-191.034
Industry Dummies	Yes
Year Dummies	Yes
Number of Observations	1,674
Number of Firms	134
Within R-Square	0.053
F-statistics	2.26 <sup>***</sup>
Power (1- $\beta$ error prob)	0.99

Notes:

1. DV is measured using the *ratio* of PD to ID and family firms are measured using 5% family ownership threshold
2. PD refers to *product diversification*; ID refers to *international diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 10

Table 40 Fixed-effect longitudinal regression analysis: robustness check on H11

	Model 19	Model 20
Dependent Variable	Family Firms	Difference between PD and ID
Sample	Family Firms and Nonfamily Firms	Family Firms
Family Representation in the TMT (H11)		<b>0.238*</b>
Nonfamily Blockholder Ownership	0.021***	0.001
Family CEO Duality		-0.010
Firm Age	0.0005	0.133
Firm Size (log value of employees)	-0.064***	0.013
Debt to Equity Ratio	0.153**	0.011
Industry Adjusted Tobin's Q	-0.037 <sup>†</sup>	-0.004
Advertising	2.762***	-0.245
Investment	-0.626 <sup>†</sup>	-0.254*
Family Trust Holding	2.688***	
Family Sales Ratio by Industry	0.682***	
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.004	0.532***
Inverse Mills Ratio		0.078 <sup>†</sup>
Constant	-2.19***	-6.560
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	9,508	1,539
Number of Firms	573	130
Absolute Log Likelihood	1495.258***	
Within R-Square		0.327
F-statistics		29.04***
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *difference* between PD and ID and family firms are measured using 10% family ownership threshold
2. PD refers to *product diversification*; ID refers to *international diversification*
3. Unstandardized estimation coefficients are reported
4. <sup>†</sup>  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 19

Table 41 Fixed-effect longitudinal regression analysis: robustness check on H11

	Model 21	Model 22
Dependent Variable	Family Firms	Difference between PD and ID
Sample	Family Firms and Nonfamily Firms	Family Firms
Family Representation in the TMT (H11)		<b>0.339*</b>
Nonfamily Blockholder Ownership	-0.005*	0.001
Family CEO Duality		-0.002
Firm Age	-0.0005	0.106
Firm Size (log value of employees)	-0.062***	-0.012
Debt to Equity Ratio	0.090†	0.009
Industry Adjusted Tobin's Q	-0.015	-0.006
Advertising	4.074***	-0.178
Investment	-0.569†	-0.253
Family Trust Holding	2.536***	
Family Sales Ratio by Industry	0.819***	
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.026	0.546***
Inverse Mills Ratio		0.126***
Constant	-2.316***	-5.373*
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	9,508	1,098
Number of Firms	573	106
Absolute Log Likelihood	1566.080***	
Within R-Square		0.349
F-statistics		36.32***
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *difference* between PD and ID and family firms are measured using 20% family ownership threshold
2. PD refers to *product diversification*; ID refers to *international diversification*
3. Unstandardized estimation coefficients are reported
4. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
5. Mills Ratio calculated by Model 21

Table 42 Fixed-effect longitudinal regression analysis: robustness check on H11

	Model 23	Model 24
Dependent Variable	Family Firms	Difference between PD and ID
Sample	Family Firms and Nonfamily Firms	Family Firms
Family Representation in the TMT (H11)		<b>0.351**</b>
Nonfamily Blockholder Ownership	0.053***	0.0003
Family CEO Duality		-0.048
Firm Age	0.001	0.066
Firm Size (log value of employees)	-0.077*	0.070
Debt to Equity Ratio	0.301**	-0.001
Industry Adjusted Tobin's Q	-0.093**	-0.011
Advertising	4.070**	-0.807
Investment	-0.109	0.087
Family Trust Holding	3.240***	
Family Sales Ratio by Industry	0.277	
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.118	0.472***
Inverse Mills Ratio		-0.002
Constant	-2.326***	-3.424
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	5,564	853
Number of Firms	435	91
Absolute Log Likelihood	606.654***	
Within R-Square		0.288
F-statistics		37.53***
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *difference* between PD and ID and family firms are measured using 5% family ownership threshold
2. Use a sample with observations that noncore and foreign sale values are missing and deleted
3. PD refers to *product diversification*; ID refers to *international diversification*
4. Unstandardized estimation coefficients are reported
5. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
6. Mills Ratio calculated by Model 23

Table 43 Fixed-effect longitudinal regression analysis: robustness check on H11

	Model 25	Model 26
Dependent Variable	Family Firms	Difference between PD and ID
Sample	Family Firms and Nonfamily Firms	Family Firms
Family Representation in the TMT (H11)		<b>0.429**</b>
Nonfamily Blockholder Ownership	0.028***	0.001
Family CEO Duality		-0.034
Firm Age	-0.001	0.207†
Firm Size (log value of employees)	-0.075**	0.067
Debt to Equity Ratio	0.181†	0.013
Industry Adjusted Tobin's Q	-0.057†	-0.008
Advertising	5.760***	-0.667
Investment	-0.381	-0.078
Family Trust Holding	2.832***	
Family Sales Ratio by Industry	0.224	
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.104	0.462***
Inverse Mills Ratio		0.053
Constant	-2.227***	-10.227†
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	5,564	707
Number of Firms	435	84
Absolute Log Likelihood	704.868***	
Within R-Square		0.283
F-statistics		29.52***
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *difference* between PD and ID and family firms are measured using 10% family ownership threshold
2. Use a sample with observations that noncore and foreign sale values are missing and deleted
3. PD refers to *product diversification*; ID refers to *international diversification*
4. Unstandardized estimation coefficients are reported
5. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
6. Mills Ratio calculated by Model 25

Table 44 Fixed-effect longitudinal regression analysis: robustness check on H11

	Model 27	Model 28
Dependent Variable	Family Firms	Difference between PD and ID
Sample	Family Firms and Nonfamily Firms	Family Firms
Family Representation in the TMT (H11)		<b>0.624***</b>
Nonfamily Blockholder Ownership	-0.008*	-0.001
Family CEO Duality		-0.019
Firm Age	-0.001	0.175
Firm Size (log value of employees)	-0.148***	0.065
Debt to Equity Ratio	0.252*	0.017
Industry Adjusted Tobin's Q	-0.067*	-0.013
Advertising	6.129***	-0.480
Investment	0.209	0.099
Family Trust Holding	2.991***	
Family Sales Ratio by Industry	0.240	
Industry Adjusted Prior Diversification Experience (Difference Measure)	0.132	0.461***
Inverse Mills Ratio		0.107***
Constant	-2.445***	-8.773
Industry Dummies	Yes	Yes
Year Dummies	Yes	Yes
Number of Observations	5,564	506
Number of Firms	435	66
Absolute Log Likelihood	657.451***	
Within R-Square		0.316
F-statistics		257.60***
Power (1- $\beta$ error prob)		1.00

Notes:

1. DV is measured using the *difference* between PD and ID and family firms are measured using 20% family ownership threshold
2. Use a sample with observations that noncore and foreign sale values are missing and deleted
3. PD refers to *product diversification*; ID refers to *international diversification*
4. Unstandardized estimation coefficients are reported
5. †  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$
6. Mills Ratio calculated by Model 27



Table 45 Descriptive data of family firms and nonfamily firms

Variable	Family Firms				Nonfamily Firms			
	Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1. Difference between PD and ID	0.029	0.449	-1.142	1.394	0.094	0.486	-1.142	1.394
2. Ratio of PD to ID	-0.503	9.408	-43.85	42.927	0.184	8.17	-43.85	42.927
3. Industry Adjusted PD	0.067	0.358	-0.484	1.376	0.143	0.393	-0.484	1.376
4. Industry Adjusted ID	0.039	0.319	-0.632	1.162	0.049	0.331	-0.632	1.162
5. Family Firm	1	0	1	1	0	0	0	0
6. Family Ownership	34.249	25.332	0	88.1	0	0	0	0
7. Lone Founder	0	0	0	0	0	0	0	0
8. Family CEO	0.566	0.496	0	1	0	0	0	0
9. Family Representation in the TMT	0.195	0.16	0	0.5	0	0	0	0
10. Family Chair	0.752	0.432	0	1	0	0	0	0
11. Family Representation on the Board	0.203	0.106	0	0.429	0	0	0	0
12. Founding Generation Family	0.461	0.499	0	1	0	0	0	0
13. Family CEO Duality	0.54	0.499	0	1	0	0	0	0
14. Nonfamily Block Holder	15.84	13.482	0	42.357	0	0	0	0
15. Family Trust Holdings	0.881	0.324	0	1	0	0	0	0
16. Firm Age	56.471	37.057	1	160	49.452	40.925	1	163
17. Firm Size (ln)	1.287	1.546	-2.865	5.05	1.542	1.743	-2.865	5.05
18. Debt to Equity Ratio	0.302	0.502	0	2.604	0.261	0.388	0	2.604
19. Industry Adjusted Tobin's Q	0.253	1.503	-1.45	8.483	0.425	1.512	-1.45	8.483
20. Advertising	0.021	0.04	0	0.153	0.009	0.024	0	0.153
21. Investment	0.105	0.081	0.013	0.489	0.108	0.084	0.013	0.489
22. FFs' Fraction of Sale by Industry	0.201	0.148	0.01	0.547	0.132	0.129	0	0.547

Table 46 Descriptive data of family firms with a family CEO and family firms without a family CEO

Variable	Family Firms with a Family CEO				Family Firms without a Family CEO			
	Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1. Difference between PD and ID	0.011	0.418	-1.142	1.394	0.052	0.484	-1.142	1.394
2. Ratio of PD to ID	-0.602	9.677	-43.85	42.927	-0.379	9.063	-43.85	42.927
3. Industry Adjusted PD	0.017	0.335	-0.484	1.376	0.133	0.376	-0.484	1.376
4. Industry Adjusted ID	0.006	0.296	-0.632	1.162	0.081	0.341	-0.632	1.162
5. Family Firm	1	0	1	1	1	0	1	1
6. Family Ownership	35.951	24.893	0	88.1	32.032	25.74	0	88.1
7. Lone Founder	0	0	0	0	0	0	0	0
8. Family CEO	1	0	1	1	0	0	0	0
9. Family Representation in the TMT	0.286	0.118	0	0.5	0.077	0.128	0	0.5
10. Family Chair	0.977	0.149	0	1	0.457	0.498	0	1
11. Family Representation on the Board	0.233	0.101	0	0.429	0.163	0.099	0	0.429
12. Founding Generation Family	0.578	0.494	0	1	0.308	0.462	0	1
13. Family CEO Duality	0.94	0.238	0	1	0.019	0.136	0	1
14. Nonfamily Block Holder	16.263	13.544	0	42.357	15.289	13.39	0	42.357
15. Family Trust Holdings	0.856	0.351	0	1	0.914	0.281	0	1
16. Firm Age	48.485	31.551	1	140	66.88	40.935	1	160
17. Firm Size (ln)	0.917	1.456	-2.865	5.05	1.77	1.526	-2.865	5.05
18. Debt to Equity Ratio	0.329	0.557	0	2.604	0.266	0.418	0	2.604
19. Industry Adjusted Tobin's Q	0.17	1.597	-1.45	8.483	0.362	1.365	-1.45	8.483
20. Advertising	0.019	0.037	0	0.153	0.023	0.042	0	0.153
21. Investment	0.111	0.089	0.013	0.489	0.097	0.068	0.013	0.489
22. FFs' Fraction of Sale by Industry	0.194	0.142	0.013	0.547	0.21	0.156	0.01	0.547

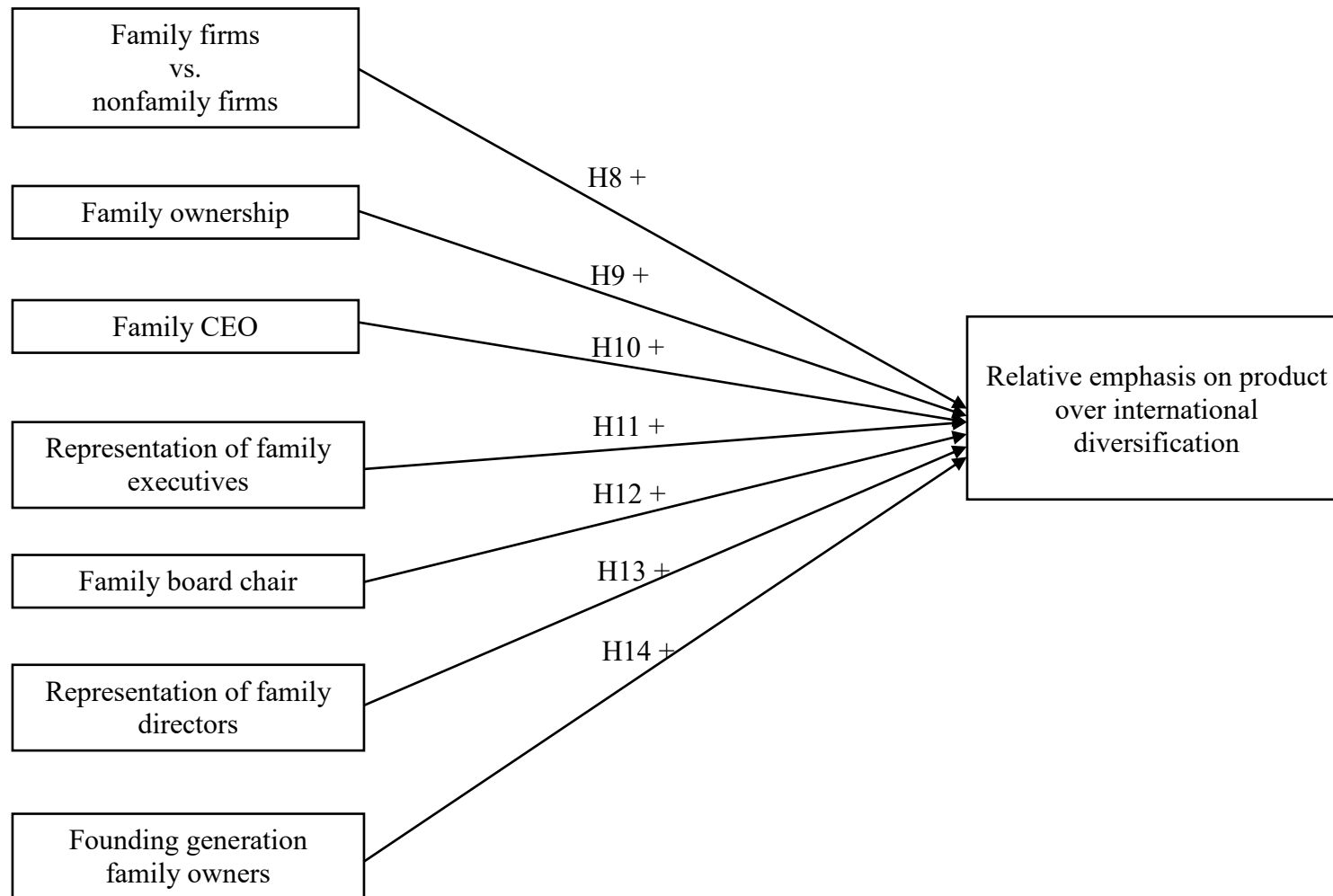
Table 47 Descriptive data of family firms with a family board chair and family firms without a family board chair

Variable	Family Firms with a Family Board Chair				Family Firms without a Family Board Chair			
	Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1. Difference between PD and ID	0.021	0.45	-1.142	1.394	0.054	0.445	-1.142	1.394
2. Ratio of PD to ID	-0.68	9.604	-43.85	42.927	0.009	8.807	-43.85	42.927
3. Industry Adjusted PD	0.061	0.356	-0.484	1.376	0.085	0.364	-0.484	1.376
4. Industry Adjusted ID	0.041	0.319	-0.632	1.162	0.032	0.318	-0.632	1.162
5. Family Firm	1	0	1	1	1	0	1	1
6. Family Ownership	36.613	25.697	0	88.1	27.098	22.772	0	88.1
7. Lone Founder	0	0	0	0	0	0	0	0
8. Family CEO	0.736	0.441	0	1	0.052	0.222	0	1
9. Family Representation in the TMT	0.246	0.141	0	0.5	0.041	0.107	0	0.5
10. Family Chair	1	0	1	1	0	0	0	0
11. Family Representation on the Board	0.226	0.098	0	0.429	0.13	0.097	0	0.417
12. Founding Generation Family	0.542	0.498	0	1	0.215	0.411	0	1
13. Family CEO Duality	0.713	0.452	0	1	0.017	0.128	0	1
14. Nonfamily Block Holder	15.384	13.328	0	42.357	17.219	13.862	0	42.357
15. Family Trust Holdings	0.873	0.333	0	1	0.907	0.291	0	1
16. Firm Age	53.654	34.503	1	160	64.992	42.813	1	148
17. Firm Size (ln)	1.166	1.577	-2.865	5.05	1.656	1.385	-2.865	5.05
18. Debt to Equity Ratio	0.323	0.546	0	2.604	0.24	0.327	0	2.604
19. Industry Adjusted Tobin's Q	0.161	1.493	-1.45	8.483	0.532	1.5	-1.45	8.483
20. Advertising	0.023	0.043	0	0.153	0.014	0.027	0	0.116
21. Investment	0.107	0.084	0.013	0.489	0.098	0.07	0.015	0.489
22. FFs' Fraction of Sale by Industry	0.198	0.141	0.01	0.547	0.21	0.169	0.011	0.547

Table 48 Descriptive data of family firms run by founding generation family members and family firms run by later generation family members

Variable	Family Firms run by Founding Generation Family Members				Family Firms run by Later Generation Family Members			
	Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
1. Difference between PD and ID	0.011	0.434	-1.142	1.394	0.044	0.46	-1.142	1.394
2. Ratio of PD to ID	-0.845	9.392	-43.85	42.927	-0.224	9.416	-43.85	42.927
3. Industry Adjusted PD	0.015	0.357	-0.484	1.376	0.112	0.353	-0.484	1.376
4. Industry Adjusted ID	0.003	0.293	-0.632	1.162	0.069	0.336	-0.632	1.162
5. Family Firm	1	0	1	1	1	0	1	1
6. Family Ownership	31.882	22.447	0	88.1	36.274	27.41	0	88.1
7. Lone Founder	0	0	0	0	0	0	0	0
8. Family CEO	0.71	0.454	0	1	0.443	0.497	0	1
9. Family Representation in the TMT	0.263	0.148	0	0.5	0.136	0.146	0	0.5
10. Family Chair	0.884	0.32	0	1	0.638	0.481	0	1
11. Family Representation on the Board	0.229	0.101	0	0.429	0.18	0.106	0	0.429
12. Founding Generation Family	1	0	1	1	0	0	0	0
13. Family CEO Duality	0.689	0.463	0	1	0.413	0.493	0	1
14. Nonfamily Block Holder	17.377	13.042	0	42.357	14.525	13.718	0	42.357
15. Family Trust Holdings	0.866	0.341	0	1	0.894	0.308	0	1
16. Firm Age	30.423	18.563	1	87	78.741	34.304	1	160
17. Firm Size (ln)	0.782	1.537	-2.865	4.394	1.719	1.417	-2.865	5.05
18. Debt to Equity Ratio	0.276	0.545	0	2.604	0.324	0.461	0	2.604
19. Industry Adjusted Tobin's Q	0.41	1.717	-1.45	8.483	0.119	1.278	-1.45	8.483
20. Advertising	0.017	0.034	0	0.153	0.024	0.044	0	0.153
21. Investment	0.119	0.094	0.013	0.489	0.092	0.065	0.013	0.489
22. FFs' Fraction of Sale by Industry	0.209	0.141	0.01	0.547	0.194	0.154	0.02	0.547

Figure 3 Theoretical model of hypothesized relationships – Essay 2



## CHAPTER IV

### CONCLUSIONS

Drawing upon the goals, governance, and resources framework, this dissertation aims to investigate diversification behavior in family firms. In Essay 1, I address when family firms decide to diversify, which mode of diversification in terms of internal versus external diversification they are more likely to choose relative to nonfamily firms. In Essay 2, I investigate which type of diversification in terms of product versus international diversification family firms are more likely to focus on in comparison to nonfamily firms. Both Essay 1 and Essay 2 also address the heterogeneous nature of family firms by investigating how various types of family firms differ in their relative emphasis on the modes/types of diversification. Heterogeneity among family firms is manifested in terms of the level of family ownership, family participation in the top management team, the board, and the generation of family members owning and controlling the family firm.

In Essay 1, in consideration of the goals, governance, and resources of the dominant coalition in affecting a firm's choice of entry modes, as well as the advantages and disadvantages associated with these two modes of diversification (internal and external diversification), I propose that the strength of preference for internal over external diversification vary between family and nonfamily firms, as well as among different types of family firms. In total, I have proposed seven hypotheses. Hypothesis 1

proposes family firms are likely to have a stronger tendency to engage in internal over external diversification in comparison to nonfamily firms. Hypotheses 2 through 7 examine variation among various types of family firms. Specifically, I propose that family firms with a large percentage of family ownership (H2), a family CEO (H3), a large representation of family executives (H4), a family board chair (H5), a large representation of family directors (H6), and involvement of founding generation family members (H7) are likely to have a stronger tendency to engage in internal rather than external diversification. An empirical analysis of 573 firms representing 9,491 firm-year observations did not provide support for H1. Moreover, an empirical analysis of 136 family firms representing 1,811 firm-year observations did not provide support for H2 through H7.

In Essay 2, based on insights drawn from the goals, governance, and resources framework and the benefits and risks associated with the two types of diversification (product and international diversification), I propose seven hypotheses to capture the difference between family and nonfamily firms and variation among different types of family firms with respect to their relative emphasis on these two types of diversification. I test these hypotheses using a sample drawn from S&P 1500 manufacturing firms. However, the empirical analysis did not provide support for H8. Consistent with my prediction, *family representation in TMT* (H11) was found to have a significantly positive effect on a firm's tendency to engage in product rather than international diversification. This result is robust across different post-hoc analyses. However, the effects of other heterogeneity variables are not significant.

There are a number of explanations for the significant effect of *family representation in the TMT* on a firm's tendency to engage in product rather than international diversification. First, the upper echelon theory has long emphasized the importance of top managers in a firm's strategic decision-making (Finkelstein et al., 1990; Hambrick et al., 1984). A firm's decision on scope change is often formulated and implemented by top managers. The finding that *family representation in the TMT* has a positive significant effect on a firm's relative emphasis on product over international diversification highlights the importance of top managers in affecting a firm's strategy. Second, from a governance perspective, a larger representation of family members in the TMT is likely to provide the controlling family with higher power and direction to pursue family-centered goals such as maintaining family control of the firm. I argue that the risk of diluting decision-making control to external partners in an exporting relationship is likely to be less compatible with family firms than the risk of diluting decision-making control to nonfamily managers employed in the firm in the case of product diversification. Thus, family firms with a large representation of family executives are more likely to choose product rather than international diversification because they have more power to maintain family decision-making control of the firm. Third, from a resource perspective, a large representation of family members in the TMT is likely to indicate the TMT has deep levels of firm-specific tacit knowledge and local resources, which can be used to facilitate the choice of product rather than international diversification.

Several explanations are provided concerning the insignificant hypothesized relationships, especially the insignificant effect of family firms on a firm's relative



emphasis on the modes/types of diversification. In comparison to nonfamily firms, family firms do not show particular preference for internal over external diversification. Prior research suggests that family members' deep level of firm-specific expertise and tacit knowledge enables the transfer of ideas and resources across departments (Sirmon et al., 2003), thus facilitating the choice of internal diversification. However, more recent research shows that family firms' advantage associated with idiosyncratic resources is less likely to be observed during the innovation input or R&D investment (Duran et al., 2016). Specifically, Duran and colleagues (2016) found that family firms' advantage associated with idiosyncratic resources are more likely to be shown among innovation outputs. The insignificant effect of family firms on a firm's relative emphasis on internal over external diversification, to a certain extent, can be explained by the fact that my discussion of internal diversification largely focuses on innovation inputs or R&D investments.

Second, I also did not find a significant effect of family firms on a firm's relative emphasis on product over international diversification. While family firms have unique challenges in managing complexity resulting from expanding in multiple and diverse foreign markets (Gomez-Mejia et al., 2010), they have fewer challenges in managing the amount of international scale (Arregle et al., 2017). The insignificant effect of family firms on a firm's relative emphasis on product over international diversification, to a certain extent, can be explained by the fact that my discussion of international diversification largely focuses on international scale.

In spite of these insignificant findings, this dissertation makes several important contributions to the current family business literature. While prior literature has shed

important insights on the level of diversification in family firms, our knowledge related to *how* family firms diversify remains limited. Thus, my focus on the relative emphasis on the modes/types of diversification extends our knowledge of diversification behavior in family firms. Second, this dissertation advances a theory of family firms by extending the application of the goals, governance, and resources framework in the study of family firms and improving our knowledge of the essence of family influence on a firm's behavior. Third, this dissertation also represents one of the first few attempts to capture the different dimensions of the framework, specifically, the resources and governance dimensions. I used the number of years the CEO/ board chair has worked in the firm as alternative measures for the presence a family CEO/board chair. Lastly, this study also contributes to the mainstream diversification literature by providing a finer-grained understanding of the antecedents a firm's choice of modes and types of diversification.

Aside from its contributions, this dissertation has several limitations that represent opportunities for future research. First, I used an involvement approach rather than an essence approach in defining family firms. This approach limits the possibility to capture the essence of family influence. For the most part, I did not measure goals and resources directly. Second, I used a convenience sample of publicly held manufacturing firms drawn from the S&P 1500 index. While these firms are quite diverse particularly with respect to size, future research using other sampling frames is warranted since my results may not be generalizable to private firms, smaller firms, and firms outside of the U.S. or firms in other industries. Lastly, I adopted a general approach in the discussion of the types and modes of diversification. Specifically, my discussion of product diversification focuses on internal direct development and acquisition, and related and unrelated

diversification. While in consideration of other foreign market entry modes, my discussion of international diversification focuses on exporting activities since exporting is considered the most prevalent form of international expansion.

In sum, this dissertation explores diversification behavior in family and nonfamily firms, as well as among various types of family firms. The findings drawn from this dissertation provide family business scholars with a better understanding of how family firms diversify in terms of the modes (internal versus external diversification) and types (product and international diversification), as well as enhance our knowledge of goals, governance, and resources as the essence to distinguish family and nonfamily firms and different types of family firms.

## REFERENCES

- Aeberhardt, R., Buono, I., & Fadinger, H. (2014). Learning, incomplete contracts and export dynamics: Theory and evidence from French firms. *European Economic Review*, 68, 219–249.
- Agarwal, R., & Gort, M. (2002). Firm and product life cycles and firm survival. *American Economic Review*, 92(2), 184–190.
- Agarwal, S., & Ramaswami, S. N. (1992). Choice of foreign- market entry mode: Impact of ownership, location and internalization factors. *Journal of International Business Studies*, 23(1), 1–27.
- Ahuja, G., & Lampert, C. M. (2001). Entrepreneurship in the large corporation: A longitudinal study of how established firms create breakthrough inventions. *Strategic Management Journal*, 22(6-7), 521–543.
- Ahuja, G., & Novelli, E. (2017). Redirecting research efforts on the diversification-performance linkage: The search for Synergy. *Academy of Management Annals*, 11(1), 342–390.
- Akerlof, G. (1970). The market for “lemons”: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84(3), 488–500.
- Alessandri, T. M., & Seth, A. (2014). The effects of managerial ownership on international and business diversification: Balancing incentives and risks. *Strategic Management Journal*, 35(13), 2064–2075.
- Allison, P. D. (1999). *Multiple regression: A primer*. Pine Forge Press.
- Alteren, G., & Tudoran, A. A. (2016). Enhancing export performance: Betting on customer orientation, behavioral commitment, and communication. *International Business Review*, 25(1), 370–381.
- Amihud, Y., & Lev, B. (1981). Risk reduction as a managerial motive for conglomerate mergers. *The Bell Journal of Economics*, 12(2), 605–617.
- Amihud, Y., & Lev, B. (1999). Does corporate ownership structure affect its strategy towards diversification? *Strategic Management Journal*, 20(11), 1063–1069.

- Amit, R., Ding, Y., Villalonga, B., & Zhang, H. (2015). The role of institutional development in the prevalence and performance of entrepreneur and family-controlled firms. *Journal of Corporate Finance*, 31, 284–305.
- Amiti, M., & Weinstein, D. E. (2011). Exports and financial shocks. *Quarterly Journal of Economics*, 126(4), 1841–1877.
- Anderson, R. C., & Reeb, D. M. (2003a). Founding-family ownership, corporate diversification, and firm leverage. *Journal of Law and Economics*, 46(2), 653–684.
- Anderson, R. C., & Reeb, D. M. (2003b). Founding-family ownership and firm performance: Evidence from the S&P 500. *Journal of Finance*, 58(3), 1301–1328.
- Anderson, R. C., & Reeb, D. M. (2004). Board composition: Balancing family influence in S&P 500 firms. *Administrative Science Quarterly*, 49(2), 209–237.
- Anderson, E., & Gatignon, H. (1986). Modes of foreign entry: A transaction cost analysis and propositions. *Journal of International Business Studies*, 17(3), 1–26.
- Andrews, K. R. (1971). *The Concept of corporate strategy*. Homewood, IL: Dow Jones-Irwin.
- Anjos, F., & Fracassi, C. (2015). Technological specialization and the decline of diversified firms. *Management Science*, 61, 161–183.
- Ansoff, H. I. (1965). *Corporate strategy: An analytical approach to business policy for growth and expansion*. New York: McGraw-Hill.
- Araujo, L., & Rezende, S. (2003). Path dependence, MNCs, and the internationalization process: A relational approach. *International Business Review*, 12(6), 719–737.
- Argote, L., & Greve, H. R. (2007). A behavioral theory of the firm—40 years and counting: Introduction and impact. *Organization Science*, 18(3), 337–349.
- Arikan, A. M., & Stulz, R. M. (2016). Corporate acquisitions, diversification, and the firm's life cycle. *Journal of Finance*, 71, 139–194.
- Arregle, J. L., Duran, P., Hitt, M. A., & van Essen, M. (2017). Why is family firms' internationalization unique? A meta-analysis. *Entrepreneurship Theory and Practice*, 41(5), 801–831.
- Arregle, J. L., Naldi, L., Nordqvist, M., & Hitt, M. A. (2012). Internationalization of family-controlled firms: A study of the effects of external involvement in governance. *Entrepreneurship Theory and Practice*, 36(6), 1115–1143.

- Astrachan, J. H., & Jaskiewicz, P. (2008). Emotional returns and emotional costs in privately held family businesses: Advancing traditional business valuation. *Family Business Review*, 21(2), 139–149.
- Astrachan, J. H., & Shanker, M. C. (2003). Family businesses' contribution to the US economy: A closer look. *Family Business Review*, 16(3), 211–219.
- Attig, N., Boubakri, N., El Ghouli, S., & Guedhami, O. (2016). Firm internationalization and corporate social responsibility. *Journal of Business Ethics*, 134(2), 171–197.
- Autio, E., Sapienza, H. J., & Almeida, J. G. (2000). Effects of age at entry, knowledge intensity, and imitability on international growth. *Academy of Management Journal*, 43(5), 909–924.
- Balakrishnan, S., & Koza, M. (1993). Information asymmetry, adverse selection and joint-ventures: Theory and evidence. *Journal of Economic Behavior & Organization*, 20(1), 99–117.
- Bammens, Y., Notelaers, G., & Van Gils, A. (2015). Implications of family business employment for employees' innovative work involvement. *Family Business Review*, 28(2), 123–144.
- Banalieva, E. R., & Eddleston, K. A. (2011). Home-region focus and performance of family firms: The role of family vs non-family leaders. *Journal of International Business Studies*, 42(8), 1060–1072.
- Barkema, H. G., Schijven, M. (2008). Toward unlocking the full potential of acquisitions: The role of organizational restructuring. *Academy of Management Journal*, 51(4), 696–722.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. B., Ketchen, D. J., & Wright, M. (2011). The future of resource-based theory: Revitalization or decline? *Journal of Management*, 37(5), 1299–1315.
- Baron, R. A. (2008). The role of affect in the entrepreneurial process. *Academy of Management Review*, 33(2), 328–340.
- Basu, S., Sahaym, A., Howard, M. D., & Boeker, W. (2015). Parent inheritance, founder expertise, and venture strategy: Determinants of new venture knowledge impact. *Journal of Business Venturing*, 30(2), 322–337.
- Baum, J. A. C., Li, S. X., & Usher, J. M. (2000). Making the next move: How experiential and vicarious learning shape the locations of chains' acquisitions. *Administrative Science Quarterly*, 45(4), 766–801.

- Beaumont, P., Hebert, C., & Lyonnet, V. (2018). Build or buy? Human capital and corporate diversification. *Human Capital and Corporate Diversification* (November 12).
- Bennedsen, M., Pérez-González, F., & Wolfenzon, D. (2010). The governance of family firms. In K. H. Baker, & R. Anderson (Eds.), *Corporate governance: A synthesis of theory, research, and practice* (pp. 371–390). Hoboken, NJ: Wiley.
- Berrone, P., Cruz, C., & Gomez-Mejia, L. R. (2012). Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research. *Family Business Review*, 25(3), 258–279.
- Berrone, P., Cruz, C., Gomez-Mejia, L. R., & Larraza-Kintana, M. (2010). Socioemotional wealth and corporate responses to institutional pressures: Do family-controlled firms pollute less? *Administrative Science Quarterly*, 55(1), 82–113.
- Bertrand, M., & Schoar, A. (2006). The role of family in family firms. *Journal of Economic Perspectives*, 20(2), 73–96.
- Bigelow, L., & Argyres, N. (2008). Transaction costs, industry experience and make-or-buy decisions in the population of early U.S. auto firms. *Journal of Economic Behavior and Organization*, 66(3), 791–807.
- Birkinshaw, J., Bresman, H., & Hakanson, L. (2000). Managing the post-acquisition integration process: How the human integration and task integration processes interact to foster value creation. *Journal of Management Studies*, 37(3), 395–425.
- Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroskedasticity and random coefficient variation. *Econometrica*, 50, 987–1007.
- Brickley, J. A., Lease, R. C., & Smith, C. W. (1988). Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics*, 20, 267–292.
- Bromiley, P., McShane, M., Nair, A., and Rustambekov, E. (2015). Enterprise risk management: Review, critique, and research directions. *Long Range Planning*, 48(4), 265–276.
- Brouthers, K. D., & Brouthers, L. E. (2000). Acquisition or greenfield start-up? Institutional, cultural and transaction cost influences. *Strategic Management Journal*, 21(1), 89–97.
- Buono, A. F., & Bowditch, J. L. (2003). *The human side of mergers and acquisitions – Managing collisions between people, cultures and organizations*. Beard Books: Washington, DC.

- Burgelman, R. A. (1983). Corporate entrepreneurship and strategic management: Insights from a process study. *Management Science*, 29(12), 1349–1364.
- Busija, E. C., O'Neill, H. M., & Zeithaml, C. O. (1997). Diversification strategy, entry mode, and performance: Evidence of choice and constraints. *Strategic Management Journal*, 18(4), 321–327.
- Cabrera-Suarez, K., De Saa-Perez, P., & Garcia-Almeida, D. (2001). The succession process from a resource-based view of the family firm. *Family Business Review*, 14(1), 37–47.
- Calori, R., Johnson, G., & Sarnin, P. (1994). CEOs' cognitive maps and the scope of the organization. *Strategic Management Journal*, 15(6), 437–457.
- Cannella, A. A., & Hambrick D. C. (1993). Effects of executive departures on the performance of acquired firms. *Strategic Management Journal*, 14(S1), 137–152.
- Capron, L. (1999). The long-term performance of horizontal acquisitions. *Strategic Management Journal*, 20(11), 987–1018.
- Capron, L., Dussauge, P., & Mitchell, W. (1998). Resource redeployment following horizontal acquisitions in Europe and North America, 1988–1992. *Strategic Management Journal*, 19(7), 631–661.
- Capron, L., & Mitchell, W. (2009). Selection capability: How capability gaps and internal social frictions affect internal and external strategic renewal. *Organization Science*, 20(2), 294–312.
- Carbonell, P., Rodríguez-Escudero, A. I., & Pujari, D. (2009). Customer involvement in new service development: An examination of antecedents and outcomes. *Journal of Product Innovation Management*, 26(5), 536–550.
- Cardinal, L. B., Miller, C. C., & Palich, L. E. (2011). Breaking the cycle of iteration: Forensic failures of international diversification. *Global Strategy Journal*, 1(1–2), 175–186.
- Carnes, C. M., & Ireland, R. D. (2013). Familiness and innovation: Resource bundling as the missing link. *Entrepreneurship Theory and Practice*, 37(6), 1399–1419.
- Carney, M. (2005). Corporate governance and competitive advantage in family-controlled firms. *Entrepreneurship Theory and Practice*, 29(3), 249–265.
- Carpenter, M. A., & Fredrickson, J. (2001). Top management teams, global strategy posture and moderating role of uncertainty. *Academy of Management Journal*, 44(3), 533–545.



- Carpenter, M. A., & Sanders, W. G. (2004). The effects of top management team pay and firm internationalization on MNC performance. *Journal of Management*, 30(4), 509–528.
- Carpenter, M. A., & Wade, J. B. (2002). Microlevel opportunity structures as determinants of non-CEO executive pay. *Academy of Management Journal*, 45(6), 1085–1103.
- Casson, M. (1999). The economics of the family firm. *Scandinavian Economic History Review*, 47(1), 10–23.
- Certo, S. T., & Semadeni, M. (2006). Strategy research and panel data: Evidence and implications. *Journal of Management*, 32(3), 449–474.
- Chandler, A. D. (1962). *Strategy and structure*. Cambridge, MA: MIT Press.
- Chang, E. P. C., Chrisman, J. J., Chua, J. H., & Kellermanns, F. W. (2008). Regional economy as a determinant of the prevalence of family firms in the United States: A preliminary report. *Entrepreneurship Theory and Practice*, 32, 559–573.
- Chang, S. J., & Rosenzweig, P. M. (2001). The choice of entry mode in sequential foreign direct investment. *Strategic Management Journal*, 22(8), 747–776.
- Chang, S. J., & Singh, H. (1999). The impact of modes of entry and resource fit on modes of exit by multibusiness firms. *Strategic Management Journal*, 20(11), 1019–1035.
- Chatterjee, S. (1990). Excess resources, utilization costs, and mode of entry. *Academy of Management Journal*, 33(4), 780–800.
- Chatterjee, S., & Singh, J. (1999). Are tradeoffs inherent in diversification moves? A simultaneous model for type of diversification and mode of expansion decisions. *Management Science*, 45(1), 25–41.
- Chatterjee, S., & Wernerfelt, B. (1991). The link between resources and type of diversification: Theory and evidence. *Strategic Management Journal*, 12(1), 33–48.
- Chen, R. (1996). Technological expansion: The interaction between diversification strategy and organizational capability. *Journal of Management Studies*, 33(5), 649–666.
- Chen, H. L., & Hsu, W. T. (2009). Family ownership, board independence, and R&D investment. *Family Business Review*, 22(4), 347–362.

- Chi, T. (1994). Trading in strategic resources: Necessary conditions, transaction cost problems, and choice of exchange structure. *Strategic Management Journal*, 15(4), 271–290.
- Chrisman, J. J., Chua, J. H., De Massis, A., Frattini, F., & Wright, M. (2015). The ability and willingness paradox in family firm innovation. *Journal of Product Innovation Management*, 32(3), 310–318.
- Chrisman, J. J., Chua, J. H., & Kellermanns, F. W. (2009). Priorities, resource stocks, and performance in family and nonfamily firms. *Entrepreneurship Theory and Practice*, 33(3), 739–760.
- Chrisman, J. J., Chua, J. H., Le Breton-Miller, I., Miller, D., & Steier, L. P. (2018). Governance mechanisms and family firms. *Entrepreneurship Theory and Practice*, 1–16.
- Chrisman, J. J., Chua, J. H., & Litz, R. (2003). A unified systems perspective of family firm performance: An extension and integration. *Journal of Business Venturing*, 18(4), 467–472.
- Chrisman, J. J., Chua, J. H., & Litz, R. A. (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., Chua, J. H., Pearson, A. W., & Barnett, T. (2012). Family involvement, family influence, and family-centered non-economic goals in small firms. *Entrepreneurship Theory and Practice*, 36(2), 267–293.
- Chrisman, J. J., Chua, J. H., & Sharma, P. (2005). Trends and directions in the development of a strategic management theory of the family firm. *Entrepreneurship Theory and Practice*, 29(5), 555–576.
- Chrisman, J. J., Chua, J. H., & Steier, L. P. (2005). Sources and consequences of distinctive familiness: An introduction. *Entrepreneurship Theory and Practice*, 29(3), 237–247.
- Chrisman, J. J., Chua, J. H., & Zahra, S. (2003). Creating wealth in family firms through managing resources: Comments and extensions. *Entrepreneurship Theory and Practice*, 27(4), 359–365.
- Chrisman, J. J., Fang, H., Kotlar, J., & De Massis, A. (2015). A note on family influence and the adoption of discontinuous technologies in family firms. *Journal of Product Innovation Management*, 32(3), 384–388.
- Chrisman, J. J., & Holt, D. T. (2016). Beyond socioemotional wealth: Taking another step toward a theory of the family firm. *Management Research: Journal of the Iberoamerican Academy of Management*, 14(3), 279–287.

- Chrisman, J. J., Kellermanns, Chan, K. C., & Liano, K. (2010). Intellectual foundations of current research in family business: An identification and review of 25 influential articles. *Family Business Review*, 23(1), 9–26.
- Chrisman, J. J., Memili, E., & Misra, K. (2014). Nonfamily managers, family firms, and the winner's curse: The influence of noneconomic goals and bounded rationality. *Entrepreneurship Theory and Practice*, 38(5), 1103–1127.
- Chrisman, J. J., & Patel, P. C. (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.
- Chrisman, J. J., Sharma, P., Steier, L. P., & Chua, J. H. (2013). The influence of family goals, governance, and resources on firm outcomes. *Entrepreneurship Theory and Practice*, 37(6), 1249–1261.
- Chrisman, J. J., Steier, L. P., & Chua, J. H. (2006). Personalism, particularism, and the competitive behaviors and advantages of family firms: An introduction. *Entrepreneurship Theory and Practice*, 30(6), 719–729.
- Chua, J. H., Chrisman, J. J., De Massis, A., & Wang, H. (2018). Reflections on family firm goals and the assessment of performance. *Journal of Family Business Strategy*, 9(2), 107–113.
- Chua, J. H., Chrisman, J. J., & Sharma, P. (1999). Defining the family business by behavior. *Entrepreneurship Theory and Practice*, 23(4), 19–39.
- Chua, J. H., Chrisman, J. J., Steier, L. P., & Rau, S. B. (2012). Sources of heterogeneity in family firms: An introduction. *Entrepreneurship Theory and Practice*, 36(6), 1103–1113.
- Clarysse, B., Bruneel, J., & Wright, M. (2011). Explaining growth paths of young technology-based firms: Restructuring resource portfolios in different competitive environments. *Strategic Entrepreneurship Journal*, 5(2), 137–157.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Cohen, J. (1992). A Power Primer. *Psychological Bulletin*, 112(1), 155–159.
- Cottrell, T., & Nault, B. R. (2004). Product variety and firm survival in the microcomputer software industry. *Strategic Management Journal*, 25(10), 1005–1025.
- Covin, J. G., & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship Theory and Practice*, 15(3), 7–25.

- Craig, J. B., & Dibrell, C. (2006). The natural environment, innovation, and firm performance: A comparative study. *Family Business Review*, 19(4), 275–288.
- Craig, J. B., Dibrell, C., & Davis, P. S. (2008). Leveraging family-based brand identity to enhance firm competitiveness and performance in family businesses. *Journal of Small Business Management*, 46(3), 351–371.
- Cruz, C., Larraza-Kintana, M., Garcés-Galdeano, L., & Berrone, P. (2014). Are family firms really more responsible? *Entrepreneurship Theory and Practice*, 38(6), 1295–1316.
- Cyert, R. M., & March, J. G. (1963). *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice Hall.
- Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. (1998). Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal*, 19(3), 269–290.
- Daspit, J. J., Chrisman, J. J., Sharma, P., Pearson, A. W., & Long, R. G. (2017). A strategic management perspective of the family firm: Past trends, new insights, and future directions. *Journal of Managerial Issues*.
- Daspit, J. J., Chrisman, J. J., Sharma, P., Pearson, A. W., & Mahto, R. V. (2018). Governance as a source of family firm heterogeneity. *Journal of Business Research*, 84, 293–300.
- Daspit, J. J., Holt, D. T., Chrisman, J. J., & Long, R. G. (2016). Examining family Firm succession from a social exchange perspective: A multiphase, multistakeholder review. *Family Business Review*, 29(1), 44–64.
- Datta, D. K. (1991). Organizational fit and acquisition performance: Effects of post-acquisition integration. *Strategic Management Journal*, 12(4), 281–297.
- Dean, J. W., & Sharfman, M. P. (1996). Does decision process matter? A study of strategic decision-making effectiveness. *Academy of Management Journal*, 39(2), 368–392.
- Debicki, B. J., Kellermanns, F. W., Chrisman, J. J., Pearson, A. W., & Spencer, B. A. (2016). Development of a socioemotional wealth importance (SEWi) scale for family firm research. *Journal of Family Business Strategy*, 7(1), 47–57.
- Deephouse, D. L., & Jaskiewicz, P. (2013). Do family firms have better reputations than non-family firms? An integration of socioemotional wealth and social identity theories. *Journal of Management Studies*, 50(3), 337–360.

- Delgado-Gómez, J. M., Ramírez-Alesón, M., & Espitia-Escuer, M. A. (2004). Intangible resources as a key factor in the internationalization of Spanish firms. *Journal of Economic Behavior and Organization*, 53(4), 477–494.
- Delios, A., & Beamish, P. W. (1999). Geographic scope, product diversification, and the corporate performance of Japanese firms. *Strategic Management Journal*, 20(8), 711–727.
- De Massis, A., Frattini, F., & Lichtenthaler, U. (2013). Research on technological innovation in family firms: Present debates and future directions. *Family Business Review*, 26(1), 10–31.
- De Massis, A., Frattini, F., Majocchi, A., & Piscitello, L. (2018). Family firms in the global economy: Toward a deeper understanding of internationalization determinants, processes, and outcomes. *Global Strategy Journal*.
- De Massis, A., Kotlar, J., Chua, J. H., & Chrisman, J. J. (2014). Ability and willingness as sufficiency conditions for family-oriented particularistic behavior: Implications for theory and empirical studies. *Journal of Small Business Management*, 52(2), 344–364.
- De Massis, A., Kotlar, J., Frattini, F., Chrisman, J. J., & Nordqvist, M. (2016). Family governance at work: Organizing for new product development in family SMEs. *Family Business Review*, 29(2), 189–213.
- Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, 93(6), 1155–1177.
- Denis, D. J., Denis, D. K., & Sarin, A. (1997). Agency problems, equity ownership, and corporate diversification. *Journal of Finance*, 52(1), 135–160.
- Denis, D. J., Denis, D. K., & Yost, K. (2002). Global diversification, industrial diversification, and firm value. *Journal of Finance*, 57(5), 1951–1979.
- Dierickx, I., & Cool, K. (1989). Asset stock accumulation and the sustainability of competitive advantage. *Management Science*, 35(12), 1504–1511.
- Dou, J., Zhang, Z., & Su, E. (2014). Does family involvement make firms donate more? Empirical evidence from Chinese private firms. *Family Business Review*, 27(3), 259–274.
- Døving, E., & Gooderham, P. N. (2008). Dynamic capabilities as antecedents of the scope of related diversification: The case of small firm accountancy practices. *Strategic Management Journal*, 29(8), 841–857.

- Ducassy, I., & Prevot, F. (2010). The effects of family dynamics on diversification strategy: Empirical evidence from French companies. *Journal of Family Business Strategy*, 1(4), 224–235.
- Duran, P., Kammerlander, N., Van Essen, M., & Zellweger, T. (2016). Doing more with less: Innovation input and output in family firms. *Academy of Management Journal*, 59(4), 1224–1264.
- Dyer, G., & Whetten, D. A. (2006). Family firms and social responsibility: Preliminary evidence from the SP 500. *Entrepreneurship Theory and Practice*, 30(6), 785–802.
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10/11), 1105–1121.
- Ellis, K. M., Reus, T. H., & Lamont, B. T. (2009). The effects of procedural and informational justice in the integration of related acquisitions. *Strategic Management Journal*, 30(2), 137–161.
- Ellstrand, A. E., Tihanyi, L., & Johnson, J. L. (2002). Board structure and international political risk. *Academy of Management Journal*, 45(4), 769–777.
- European Commission. (2013). *2013 EU industrial R&D investment scoreboard*. Luxembourg: Publications Office of the European Union.
- Evert, R. E., Sears, J. B., Martin, J. A., & Payne, G. T. (2018). Family ownership and family involvement as antecedents of strategic action: A longitudinal study of initial international entry. *Journal of Business Research*, 84, 301–311.
- Fang, H. “Chevy.” (2016). *Family business, strategic persistence, and firm performance*. Unpublish doctoral dissertation. College of Business, Mississippi State University.
- Fang, H. “Chevy,” Kotlar, J., Memili, E., Chrisman, J. J., & De Massis, A. (2018). The pursuit of international opportunities in family firms: Generational differences and the role of knowledge-based resources. *Global Strategy Journal*. 8(1), 136–157.
- Fang, H. “Chevy,” Randolph, R. V. D. G., Memili, E., & Chrisman, J. J. (2016). Does size matter? The moderating effects of firm size on the employment of nonfamily managers in privately held family SMEs. *Entrepreneurship Theory and Practice*, 40(5), 1017–1039.
- Fang, Y., Wade, M., Delios, A., & Beamish, P. W. (2007). International diversification, subsidiary performance, and the mobility of knowledge resources. *Strategic Management Journal*, 28(10), 1053–1064.

- Farjoun, M. (1994). Beyond industry boundaries: Human expertise, diversification and resource-related industry groups. *Organization Science*, 5(2), 185–199.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G\* Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G\* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191.
- Feldman, E. R., Amit, R. R., & Villalonga, B. (2016). Corporate divestitures and family control. *Strategic Management Journal*, 37(3), 429–446.
- Fernández, Z., & Nieto, M. J. (2005). Internationalization strategy of small and medium-sized family businesses: Some influential factors. *Family Business Review*, 18(1), 77–89.
- Fiegenbaum, A., Shaver, J. M., & Yeung, B. (1997). Which firms expand to the Middle East: The experience of US multinationals. *Strategic Management Journal*, 18(2), 141–148.
- Finkelstein, S., & Hambrick, D. C. (1990). Top-management-team tenure and organizational outcomes: The moderating role of managerial discretion. *Administrative Science Quarterly*, 35(3), 484–503.
- Fiss, P. C., & Zajac, E. J. (2004). The diffusion of ideas over contested terrain: The (non)adoption of a shareholder value orientation among German firms. *Administrative Science Quarterly*, 49(4), 501–534.
- Galan, J. I., & Sanchez-Bueno, M. J. (2009). Strategy and structure in context: Universalism versus institutional effects. *Organization Studies*, 30(6), 609–627.
- Galavotti, I., Depperu, D., & Cerrato, D. (2017). Acquirer-to-target relatedness and target country unfamiliarity in acquisitions. *Management Decision*, 55(5), 892–914.
- Gallo, M. A., & Pont, C. G. (1996). Important factors in family business internationalization. *Family Business Review*, 9(1), 45–59.
- Gande, A., Schenzler, C., & Senbet, L. W. (2009). Valuation effects of global diversification. *Journal of International Business Studies*, 40(9), 1515–1532.
- Gedajlovic, E. R., & Carney, M. (2010). Markets, hierarchies, and families: Toward a transaction cost theory of the family firm. *Entrepreneurship Theory and Practice*, 34(6), 1145–1172.

- Gedajlovic, E., Carney, M., Chrisman, J. J., & Kellermanns, F. W. (2012). The adolescence of family firm research: Taking stock and planning for the future. *Journal of Management*, 38(4), 1010–1037.
- Gedajlovic, E. R., Lubatkin, M., & Schulze, W. S. (2004). Crossing the threshold from founder management to professional management: A governance perspective. *Journal of Management Studies*, 41(5), 899–912.
- Geringer, J. M., Tallman, S., & Olsen, D. M. (2000). Product and international diversification among Japanese multinational firms. *Strategic Management Journal*, 21(1), 51–80.
- Gersick, K., Davis, J., Hampton, M., & Lansberg, I. (1997). *Generation to generation: Life cycles of the family business*. Boston, MA: Harvard Business School Press.
- Goerzen, A. & Beamish, P.W. (2003). Geographic scope and multinational enterprise performance. *Strategic Management Journal*, 24(13), 1289–1306.
- Gimmon, E., & Levie, J. (2010). Founder's human capital, external investment, and the survival of new high-technology ventures. *Research Policy*, 39(9), 1214–1226.
- Gomez-Mejia, L. R., Cruz, C., Berrone, P., & De Castro, J. (2011). The bind that ties: Socioemotional wealth preservation in family firms. *Academy of Management Annals*, 5(1), 653–707.
- Gomez-Mejia, L. R., Haynes, K. T., Nunez-Nickel, M., Jacobson, K., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative Science Quarterly*, 52(1), 106–137.
- Gomez-Mejia, L. R., Makri, M., & Kintana, M. L. (2010). Diversification decisions in family-controlled firms. *Journal of Management Studies*, 47(2), 223–252.
- Gomez-Mejia, L. R., Nunez-Nickel, M., & Gutierrez, I. (2001). The role of family ties in agency contracts. *Academy of Management Journal*, 44(1), 81–95.
- Gomez-Mejia, L. R., & Palich, L. E. (1997). Cultural diversity and the performance of multinational firm. *Journal of International Business Studies*, 28(2), 309–335.
- Gomez-Mejia, L. R., Patel, P. C., & Zellweger, T. M. (2018). In the horns of the dilemma: Socioemotional wealth, financial wealth, and acquisitions in family firms. *Journal of Management*, 44(4), 1369–1397.
- Goranova, M., Alessandri, T. M., Brandes, P., & Dharwadkar, R. (2007). Managerial ownership and corporate diversification: A longitudinal view. *Strategic Management Journal*, 28(3), 211–225.



- Goranova, M., Dharwadkar, R., & Brandes, P. (2010). Owners on both sides of the deal: Mergers and acquisitions and overlapping institutional ownership. *Strategic Management Journal*, 31(10), 1114–1135.
- Granovetter, M. (2005). Business groups and social organization. In N. J. Smelser, & R. Swedberg (Eds.), *The handbook of economic sociology* 2nd ed.: 429–450. Princeton: Princeton University Press.
- Grant, R. M. (1988). On ‘dominant logic’, relatedness and the link between diversity and performance. *Strategic Management Journal*, 9(6), 639–642.
- Greenaway, D., Guariglia, A., & Kneller, R. (2007). Financial factors and exporting decisions. *Journal of international economics*, 73(2), 377–395.
- Greene, W. H. (2003). *Econometric analysis*. Prentice Hall, Upper Saddle River, NJ.
- Gulati, R., & Singh, H. (1998). The architecture of cooperation: Managing coordination costs and appropriation concerns in strategic alliances. *Administrative Science Quarterly*, 43(4), 781–814.
- Guth, W. D., & Ginsberg, A. (1990). Guest editor's introduction: Corporate entrepreneurship. *Strategic Management Journal*, 11, 5–15.
- Habbershon, T. G., & Williams, M. L. (1999). A resource-based framework for assessing the strategic advantages of family firms. *Family Business Review*, 12(1), 1–25.
- Habbershon, T. G., Williams, M., & MacMillan, I. C. (2003). A unified systems perspective of family firm performance. *Journal of Business Venturing*, 18(4), 451–465.
- Hagedoorn, J., & Duysters, G. (2002). External sources of innovative capabilities: The preference for strategic alliances or mergers and acquisitions. *Journal of Management Studies*, 39(2), 167–188.
- Hambrick, D. C. (2007). Upper echelons theory: An update. *Academy of Management Review*, 32(2), 334–343.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206.
- Hammond, N. L., Pearson, A. W., & Holt, D. T. (2016). The quagmire of legacy in family firms: Definition and implications of family and family firm legacy orientations. *Entrepreneurship Theory and Practice*, 40(6), 1209–1231.
- Harrison, J. S., Hall, E. H., & Nargundkar, R. (1993). Resource allocation as an outcropping of strategic consistency: Performance implications. *Academy of Management Journal*, 36(5), 1026–1051.

- Harzing, A. (2002). Acquisitions versus greenfield investments: International strategy and management of entry modes. *Strategic Management Journal*, 23(3), 211–227.
- Haspeslagh, P. C., & Jemison, D. B. (1991). *Managing acquisitions: Creating value through corporate renewal*. New York: Free Press.
- Hausman, J. A., & Taylor, W. E. (1981). Panel data and unobservable individual effects. *Econometrica: Journal of the Econometric Society*, 49(6), 1377–1398.
- Heckman, J. J. (1979). Sample selection bias as a specification error. *Econometrica*, 47, 153–161.
- Helfat, C. E., & Eisenhardt, K. M. (2004). Inter-temporal economies of scope, organizational modularity, and the dynamics of diversification. *Strategic Management Journal*, 25(13), 1217–1232.
- Helfat, C. E., & Lieberman, M. B. (2002). The birth of capabilities: Market entry and the importance of pre-history. *Industrial and Corporate Change*, 11(4), 725–760.
- Hennart, J. F. (2009). Down with MNE-centric theories! Market entry and expansion as the bundling of MNE and local assets. *Journal of International Business Studies*, 40(9), 1432–1454.
- Hennart, J. F., & Reddy, S. (1997). The choice between mergers/acquisitions and joint ventures: The case of Japanese investors in the United States. *Strategic Management Journal*, 18(1), 1–12.
- Hitt, M. A., Bierman, L., Uhlenbruck, K., & Shimizu, K. (2006). The importance of resources in the internationalization of professional service firms: The good, the bad, and the ugly. *Academy of Management Journal*, 49(6), 1137–1157.
- Hill, C., Hitt, M. A., & Hoskisson, R. E. (1992). Cooperative versus competitive structures in related and unrelated diversified firms. *Organization Science*, 3(4), 501–521.
- Hitt, M. A., Hoskisson, R. E., & Kim, H. (1997). International diversification: Effects on innovation and firm performance in product-diversified firms. *Academy of Management Journal*, 40(4), 767–798.
- Hitt, M. A., Tihanyi, L., Miller, T., & Connelly, B. (2006). International diversification: Antecedents, outcomes, and moderators. *Journal of Management*, 32(6), 831–867.
- Hofer, C. W., & Chrisman, J. J. (1989). The strategic management of first diversification: A new perspective. In L. Fahey (Ed.), *The strategic planning management reader*, Englewood Cliffs: Prentice-Hall, 206–214.

- Hofer, C. W., & Schendel, D. (1978). *Strategy formulation: Analytical concepts*. St. Paul: West Publishing.
- Hofstede, G. (1980). *Culture's consequence: International differences in work-related values*. Sage: Beverly Hills, CA.
- Holt, D. T., Pearson, A. W., Carr, J. C., & Barnett, T. (2017). Family firm(s) outcomes model : Structuring financial and nonfinancial outcomes across the family and firm. *Family Business Review*, 30(2), 182–202.
- Homburg, C., & Bucerius, M. (2006). Is speed of integration really a success factor of mergers and acquisitions? An analysis of the role of internal and external relatedness. *Strategic Management Journal*, 27(4), 347–367.
- Hoopes, D. G., & Miller, D. (2006). Ownership preferences, competitive heterogeneity, and family-controlled businesses. *Family Business Review*, 19(2), 89–101.
- Hoskisson, R. E., & Hitt, M. A. (1990). Antecedents and performance outcomes of diversification: A review and critique of theoretical perspectives. *Journal of Management*, 16(2), 461–509.
- Hsiao, C. (1985). *Analysis of panel data*. Cambridge University Press, Cambridge, UK.
- Hughes, J. E., Jr. (2004). *Family wealth: Keeping it in the family*. New York: Bloomberg.
- Hutzschenreuter, T., & Gröne, F. (2009). Product and geographic scope changes of multinational enterprises in response to international competition. *Journal of International Business Studies*, 40(7), 1149–1170.
- Hutzschenreuter, T., & Horstkotte, J. (2013). Performance effects of top management team demographic faultlines in the process of product diversification. *Strategic Management Journal*, 34(6), 704–726.
- Iyer, D. N., & Miller, K. D. (2008). Performance feedback, slack, and the timing of acquisitions. *Academy of Management Journal*, 51(4), 808–822.
- Jacobides, M. G., & Hitt, M. (2005). Losing sight of the forest for the trees? Productive capabilities and gains from trade as drivers of vertical scope. *Strategic Management Journal*, 26(13) 1209–1227.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Jiraporn, P., Kim, Y. S., & Davidson, W. N. (2008). Multiple directorships and corporate diversification. *Journal of Empirical Finance*, 15(3), 418–435.

- Jones, C. D., Makri, M., & Gomez-Mejia, L. R. (2008). Affiliate directors and perceived risk bearing in publicly traded, family-controlled firms: The case of diversification. *Entrepreneurship Theory and Practice*, 32(6), 1007–1026.
- Jung, J. C., Beamish, P. W., & Goerzen, A. (2010). Dynamics of experience, environment, and MNE ownership strategy. *Management International Review*, 50(3), 267–296.
- Jung, D. I., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *Leadership Quarterly*, 14(4), 525–544.
- Kammerlander, N., & Ganter, M. (2014). An attention-based view of family firm adaptation to discontinuous technological change: Exploring the role of family CEOs' noneconomic goals. *Journal of Product Innovation Management*, 32(3), 361–383.
- Kang, J. (2013). The relationship between corporate diversification and corporate social performance. *Strategic Management Journal*, 34(1), 94–109.
- Karim, S., & Mitchell, W. (2000). Path-dependent and path-breaking change: Reconfiguring business resources following acquisitions in the US medical sector, 1978-1995. *Strategic Management Journal*, 21(10-11), 1061–1081.
- Kaplan, S. N., Sensoy, B. A., & Strömberg, P. (2009). Should investors bet on the jockey or the horse? Evidence from the evolution of firms from early business plans to public companies. *The Journal of Finance*, 64(1), 75–115.
- Karim, S., & Mitchell, W. (2000). Path-dependent and path-breaking change: Reconfiguring business resources following acquisitions in the U.S. medical sector, 1978-1995. *Strategic Management Journal*, 21(10-11), 1061–1081.
- Katz, R. (1982). The effects of longevity on project communication and performance. *Administrative Science Quarterly*, 27, 81–104.
- Kaul, A. (2012). Technology and corporate scope: Firm and rival innovation as antecedents of corporate transactions. *Strategic Management Journal*, 33(4), 347–367.
- Kelley, D. J., Peters, L., & O'Connor, C. G. (2009). Intra-organizational networking for innovation-based corporate entrepreneurship. *Journal of Business Venturing*, 24(3), 221–235.
- Kelly, L. M., Athanassiou, N., & Crittenden, W. F. (2000). Founder centrality and strategic behavior in the family-owned firm. *Entrepreneurship Theory and Practice*, 25(2), 27–42.

- Khalid, S., & Bhatti, K. (2015). Entrepreneurial competence in managing partnerships and partnership knowledge exchange: Impact on performance differences in export expansion stages. *Journal of World Business*, 50(3), 598-608.
- Kim, J. Y., Halebian, J., & Finkelstein, S. (2011). When firms are desperate to grow via acquisition: The effect of growth patterns and acquisition experience on acquisition premiums. *Administrative Science Quarterly*, 56(1), 26-60.
- Kim, D. J., & Kogut, B. (1996). Technological platforms and diversification. *Organization Science*, 7(3), 283-301.
- Kim, W., & Mauborgne, R. (1991). Implementing global strategies: The role of procedural justice. *Strategic Management Journal*, 12(S1), 125-143.
- King, D. R., Dalton, D. R., Daily, C. M., & Covin, J. G. (2004). Meta-analyses of post-acquisition performance: Indications of unidentified moderators. *Strategic Management Journal*, 25(2), 187-200.
- Kogut, B., & Singh, H. (1988). The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 19(3), 411-432.
- Kogut, B., & Zander, U. (1993). Knowledge of the firm and the evolutionary theory of the multinational corporation. *Journal of International Business Studies*, 24(4), 625-645.
- Kogut, B., & Zander, U. (1996). What firms do? Coordination, identity, and learning. *Organization Science*, 7(5), 502-518.
- König, A., Kammerlander, N., & Enders, A. (2013). The family innovator's dilemma: How family influence affects the adoption of discontinuous technologies by incumbent firms. *Academy of Management Review*, 38(3), 418-441.
- Kor, Y. Y., & Leblebici, H. (2005). How do interdependences among human-capital deployment, development, and diversification strategies affect firms' financial performance? *Strategic Management Journal*, 26(10), 967-985.
- Kostova, T., & Roth, K. (2003). Social capital in multinational corporations and the micro-macro models of its formation. *Academy of Management Review*, 28(2), 297-317.
- Kotlar, J., & De Massis, A. (2013). Goal setting in family firms: Goal diversity, social interactions, and collective commitment to family-centered goals. *Entrepreneurship Theory and Practice*, 37(6), 1263-1288.
- Kotlar, J., Fang, H., De Massis, A., & Frattini, F. (2014). Profitability goals, control goals, and the R&D investment decisions of family and nonfamily firms. *Journal of Product Innovation Management*, 31(6), 1128-1145.

- Kumar, M. V. (2009). The relationship between product and international diversification: The effects of short-run constraints and endogeneity. *Strategic Management Journal*, 30(1), 99–116.
- Lamont, B., & Anderson, C. R. (1985). Mode of corporate diversification and economic performance. *Academy of Management Journal*, 28(4), 926–934.
- Lakshman, C. (2011). Post-acquisition cultural integration in mergers and acquisitions: A knowledge-based approach, *Human Resource Management*, 50(5), 605–623.
- La Porta, R., López de Silanes, F., & Shleifer, A., (1999). Corporate ownership around the world. *Journal of Finance*, 54(2), 471–517.
- Le Breton-Miller, I., & Miller, D. (2006). Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability. *Entrepreneurship Theory and Practice*, 30(6), 731–746.
- Le Breton-Miller, I., & Miller, D. (2009). Agency vs. stewardship in public family firms: A social embeddedness reconciliation. *Entrepreneurship Theory and Practice*, 33(6), 1169–1191.
- Le Breton-Miller, I., & Miller, D. (2013). Socioemotional wealth across the family firm life cycle: A commentary on “Family Business Survival and the Role of Boards”. *Entrepreneurship Theory and Practice*, 37(6), 1391–1397.
- Lee, G. K., & Lieberman, M. (2010). Acquisition vs. internal development as modes of market entry. *Strategic Management Journal*, 31(2), 140–158.
- Lee, L. F., Maddala, G. S., & Trost, R. P. (1980). Asymptotic covariance matrices of two-stage probit and two-stage Tobit methods for simultaneous equations models with selectivity. *Econometrica*, 48, 491–503.
- Lee, P. M., & O'Neill, H. M. (2003). Ownership structures and R&D investments of U.S. and Japanese firms: Agency and stewardship perspectives. *Academy of Management Journal*, 46(2), 212–225.
- Leiblein, M. J., & Miller, D. J. (2003). An empirical examination of transaction- and firm-level influences on the vertical boundaries of the firm. *Strategic Management Journal*, 24(9), 839–859.
- Leonidas, C., Katsikeas, C. S., & Hadjimarcou, J. (2002). Building successful export business relationships: A behavioral perspective. *Journal of International Marketing*, 10(3), 96–115.
- Lester, R. H., & Cannella, A. A. (2006). Interorganizational familiness: How family firms use interlocking directorates to build community-level social capital. *Entrepreneurship Theory and Practice*, 30(6), 755–775.

- Levinthal, D. A. (1997). Adaptation on rugged landscapes. *Management Science*, 43(7), 934–950.
- Levinthal, D. A., & March, J. G. (1993). The myopia of learning. *Strategic Management Journal*, 14(S2), 95–112.
- Li, Z. (2017). *Exploring the role of the family CEO in firm innovation: A capability-based perspective*. Unpublished doctoral dissertation, College of Business, Mississippi State University.
- Li, W., He, A., Lan, H., & Yiu, D. (2012). Political connections and corporate diversification in emerging economies: Evidence from China. *Asia Pacific Journal of Management*, 29(3), 799–818.
- Liang, X., Wang, L., & Cui, Z. (2014). Chinese private firms and internationalization: Effects of family involvement in management and family ownership. *Family Business Review*, 27(2), 126–141.
- Lieberman, M. B., Lee, G. K., & Folta, T. B. (2016). Entry, exit, and the potential for resource redeployment. *Strategic Management Journal*, forthcoming.
- Lu, J.W. & Beamish, P.W. (2004). International diversification and firm performance: The S-curve hypothesis. *Academy of Management Journal*, 47(4), 598–609.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21(1), 135–172.
- Luo, Y., Shenkar, O., & Nyaw, M. K. (2001). A dual parent perspective on control and performance in international joint ventures: Lessons from a developing economy. *Journal of International Business Studies*, 32(1), 41–58.
- Mackey, T. B., Barney, J. B., & Dotson, J. (2017). Corporate diversification and the value of individual firms: A Bayesian approach. *Strategic Management Journal*, 38(2), 322–341.
- Martin, X. (2013). Solving theoretical and empirical conundrums in international strategy research: Linking foreign entry mode choices and performance. *Journal of International Business Studies*, 44(1), 28–41.
- Martin, X., & Mitchell, W. (1998). The influence of local search and performance heuristics on new design introduction in a new product market. *Research Policy*, 26(7), 753–771.
- Matusik, S. F., & Fitza, M. A. (2012). Diversification in the venture capital industry: Leveraging knowledge under uncertainty. *Strategic Management Journal*, 33(4), 407–426.

- Mayer, M. C., Stadler, C., & Hautz, J. (2014). The relationship between product and international diversification: The role of experience. *Strategic Management Journal*, 36(10), 1458–1468.
- McNamara, G., Vaaler, P. M., & Devers, C. E. (2003). Same as it ever was: The search for evidence of increasing hyper-competition. *Strategic Management Journal*, 24(3), 261–278.
- Melin, L., & Nordqvist, M. (2007). The reflexive dynamics of institutionalization: The case of the family business. *Strategic Organization*, 5(3), 321–333.
- Memili, E., Chrisman, J. J., & Chua, J. H. (2011). Transaction costs and outsourcing decisions in small- and medium-sized family firms. *Family Business Review*, 24(1), 47–61.
- Memili, E., Fang, H. C., & Welsh, D. H. (2015). Value creation and value appropriation in innovation process in publicly-traded family firms. *Management Decision*, 53(9), 1921–1952.
- Meyer, K. M., Estrin, S., Bhaumik, S. K., & Peng, M. (2009). Institutions, resources, and entry strategies in emerging economies. *Strategic Management Journal*, 30(1), 61–80.
- Michel, J. G., & Hambrick, D. C. (1992). Diversification posture and top management team characteristics. *Academy of Management Journal*, 35(1), 9–37.
- Miller, D., & Le Breton-Miller, I. (2005). *Managing for the long run*. Boston: Harvard Business School Press.
- Miller, D., & Le Breton-Miller, I. (2006). Family governance and firm performance: Agency, stewardship, and capabilities. *Family Business Review*, 19(1), 73–87.
- Miller, D., Le Breton-Miller, I., & Lester, R. H. (2011). Family and lone founder ownership and strategic behavior: Social context, identity, and institutional logics. *Journal of Management Studies*, 48(1), 1–25.
- Miller, D., Le Breton-Miller, I., & Lester, R. H. (2013). Family firm governance, strategic conformity, and performance: Institutional vs. strategic perspectives. *Organization Science*, 24(1), 189–209.
- Miller, D., Le Breton-Miller, I., Lester, R. H., & Cannella, A. A. (2007). Are family firms really superior performers? *Journal of Corporate Finance*, 13(5), 829–858.
- Miller, D., Le Breton-Miller, I., & Lester, R. H. (2010). Family ownership and acquisition behavior in publicly-traded companies. *Strategic Management Journal*, 31(2), 201–223.



- Miller, D., Le Breton-Miller, I., Minichilli, A., Corbetta, G., & Pittino, D. (2014). When do non-family CEOs outperform in family firms? Agency and behavioral agency perspectives. *Journal of Management Studies*, 51(4), 547–572.
- Miller, D., Minichilli, A., & Corbetta, G. (2013). Is family leadership always beneficial? *Strategic Management Journal*, 34(5), 553–571.
- Minichilli, A., Corbetta, G., & MacMillan, I. C. (2010). Top management teams in family-controlled companies: ‘familiness’, ‘faultlines’, and their impact on financial performance. *Journal of Management Studies*, 47(2), 205–222.
- Minichilli, A., Nordqvist, M., Corbetta, G., & Amore, M. D. (2014). CEO succession mechanisms, organizational context, and performance: A socio-emotional wealth perspective on family-controlled firms. *Journal of Management Studies*, 51(7), 1153–1179.
- Mishra, C. S., & McConaughy, D. L. (1999). Founding family control and capital structure: The risk of loss of control and the aversion of debt. *Entrepreneurship Theory and Practice*, 23(4), 53–64.
- Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, 20, 293–315.
- Morck, R., Wolfenzon, D., & Yeung, B. (2005). Corporate governance, economic entrenchment, and growth. *Journal of Economic Literature*, 43(3), 655–720.
- Morck, R., & Yeung, B. (2003). Agency problems in large family business groups. *Entrepreneurship Theory and Practice*, 27(4), 367–382.
- Mosakowski, E. (1997). Strategy making under causal ambiguity: Conceptual issues and empirical evidence. *Organization Science*, 8(4), 414–442.
- Moser, C., Nestmann, T., & Wedow, M. (2008). Political risk and export promotion: Evidence from Germany. *The World Economy*, 31(6), 781–803.
- Nachum, L., & Zaheer, S. (2005). The persistence of distance? The impact of technology on MNE motivations for foreign investment. *Strategic Management Journal*, 26(8), 747–767.
- Nail, L. A., Megginson, W. L., & Maquieira, C. (1998). How stock-swap mergers affect shareholder (and bondholder) wealth: More evidence of the value of corporate "focus". *Journal of Applied Corporate Finance*, 11(2), 95–106.
- Neffke, F., & Henning, M. (2013). Skill-relatedness and firm diversification. *Strategic Management Journal*, 34(3), 297–316.

- Nelson, R., & Winter, S. (1982). *An evolutionary theory of economic change*. Belknap Press: Cambridge, MA.
- Ng, D. W. (2007). A modern resource-based approach to unrelated diversification. *Journal of Management Studies*, 44(8), 1481–1502.
- Nordqvist, M., Sharma, P., & Chirico, F. (2014). Family firm heterogeneity and governance: A configuration approach. *Journal of Small Business Management*, 52(2), 192–209.
- Okoroafo, S., & Perry, M. (2010). Generational perspectives of the export behavior of family businesses. *International Journal of Economics and Finance*, 2(3), 15–24.
- Palich, L. E., Cardinal, L., & Miller, C. (2000). Curvilinearity in the diversification-performance linkage: An examination of over three decades of research. *Strategic Management Journal*, 21(2), 155–174.
- Patel, P. C., & Chrisman, J. J. (2014). Risk abatement as a strategy for R&D investments in family firms. *Strategic Management Journal*, 35(4), 617–627.
- Paul, J., Parthasarathy, S., & Gupta, P. (2017). Exporting challenges of SMEs: A review and future research agenda. *Journal of World Business*, 52(3), 327–342.
- Pearson, A. W., Carr, J. C., & Shaw, J. (2008). Toward a theory of familiness: A social capital perspective. *Entrepreneurship Theory and Practice*, 32(6), 949–969.
- Penrose, E. T. (1959). *The theory of the growth of the firm*. Oxford: Oxford University Press.
- Pérez-González, F. (2006). Inherited control and firm performance. *American Economic Review*, 96(5), 1559–1588.
- Pettus, M. L., Kor, Y., Mahoney, J. T., & Michael, S. C. (2018). Sequencing and timing of strategic responses after industry disruption: Evidence from post-deregulation competition in the US railroad industry. *Strategic Organization*, 16(4), 373–400.
- Phan, P., Wright, M., Ucbasaran, D., & Tan, W. (2009). Corporate entrepreneurship: Current research and future directions. *Journal of Business Venturing*, 24(3), 197–205.
- Pisano, G. P. (1990). The R&D boundaries of the firm: An empirical analysis. *Administrative Science Quarterly*, 35(1), 153–176.
- Pittino, D., Martínez, A. B., Chirico, F., & Galván, R. S. (2018). Psychological ownership, knowledge sharing and entrepreneurial orientation in family firms: The moderating role of governance heterogeneity. *Journal of Business Research*, 84, 312–326.

- Prahalad, C. K., & Bettis, R. A. (1986). The dominant logic: A new linkage between diversity and performance. *Strategic Management Journal*, 7(6), 485–501.
- Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68(3), 79–91.
- Pukall, T. J., & Calabro, A. (2014). The internationalization of family firms: A critical review and integrative model. *Family Business Review*, 27(2), 103–125.
- Qian, L., Agarwal, R., & Hoetker, G. (2012). Configuration of value chain activities: The effect of pre-entry capabilities, transaction hazards, and industry evolution on decisions to internalize. *Organization Science*, 23(5), 1330–1349.
- Quigley, T. J., & Hambrick, D. C. (2015). Has the “CEO effect” increased in recent decades? A new explanation for the great rise in America’s attention to corporate leaders. *Strategic Management Journal*, 36(6), 821–830.
- Ramaswamy, K. (1993). Multinationality and performance: An empirical examination of the moderating effects of configuration. *Academy of Management Best Papers Proceedings*, Atlanta, 142–147.
- Ramaswamy, K., Li, M., & Veliyath, R. (2002). Variations in ownership behavior and propensity to diversify: A study of the Indian corporate context. *Strategic Management Journal*, 23(4), 345–358.
- Ranft, A. L. (1997). *Preserving and transferring knowledge-based resources during post-acquisition implementation*. Unpublished doctoral dissertation, University of North Carolina.
- Rawley, E., & Simcoe, T. S. (2010). Diversification, diseconomies of scope, and vertical contracting: Evidence from the taxicab industry. *Management Science*, 56(9), 1534–1550.
- Robins, J., & Wiersema, M. F. (1995). A resource-based approach to the multibusiness firm: Empirical analysis of portfolio interrelationships and corporate financial performance. *Strategic Management Journal*, 16(4), 277–299.
- Rosenkopf, L., & Nerkar, A. (2001). Beyond local search: Boundary-spanning, exploration, and impact in the optical disk industry. *Strategic Management Journal*, 22(4), 287–306.
- Roth, K., & O’Donnell, S. (1996). Foreign subsidiary compensation strategy: An agency theory perspective. *Academy of Management Journal*, 39(3), 678–703.
- Rugman, A. M., & Verbeke, A. (2004). A perspective on regional and global strategies of multinational enterprises. *Journal of International Business Studies*, 35(1), 3–18.

- Rumelt, R. P. (1974). *Strategy, structure, and economic performance*. Cambridge, MA: Harvard University Press.
- Sakhartov, A. (2017). Economies of scope, resource relatedness, and the dynamics of corporate diversification. *Strategic Management Journal*, 38(11), 2168–2188.
- Salomon, R. M., & Shaver, J. M. (2005). Learning by exporting: New insights from examining firm innovation. *Journal of Economics & Management Strategy*, 14(2), 431–460.
- Sambharya, R. (1995). The combined effect of international diversification and product diversification strategies on the performance of US-based multinational corporations. *Management International Review*, 35(3), 197–218.
- Sambharya, R. (1996). Foreign experience of top management teams and international diversification strategies of US multinational corporations. *Strategic Management Journal*, 17(9), 739–746.
- Sanders, G., & Carpenter, M. A. (1998). Internationalization and firm governance: The roles of CEO compensation, top team composition, and board structure. *Academy of Management Journal*, 41(2), 158–178.
- Sapienza, H. J., Autio, E., George, G., & Zahra, S. A. (2006). A capabilities perspective on the effects of early internationalization on firm survival and growth. *Academy of Management Review*, 31(4), 914–933.
- Schulze, W. S., Lubatkin, M. H., & Dino, R. N. (2003). Toward a theory of agency and altruism in family firms. *Journal of business venturing*, 18(4), 473–490.
- Schumpeter, J. A. (1934). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle*. New York: Oxford University Press.
- Sciascia, S., Mazzola, P., Astrachan, J. H., & Pieper, T. M. (2012). The role of family ownership in international entrepreneurship: Exploring nonlinear effects. *Small Business Economics*, 38(1), 15–31.
- Sethi, D., Guisinger, S. E., Phelan, S. E., & Berg, D. M. (2003). Trends in foreign direct investment flows: A theoretical and empirical analysis. *Journal of International Business Studies*, 34(4), 315–326.
- Sharma, A. (1998). Mode of entry and “ex-post” performance. *Strategic Management Journal*, 19(9), 879–900.
- Sharma, P., & Chrisman, J. J. (1999). Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship. *Entrepreneurship Theory and Practice*, 23(3), 11–27.

- Sharma, P., & Irving, P.G. (2005). Four bases of family business successor commitment: Antecedents and consequences. *Entrepreneurship Theory and Practice*, 29(1), 13–33.
- Sharma, A., & Kesner, I. F. (1996). Diversifying entry: Some ex-ante explanations for postentry survival and growth. *Academy of Management Journal*, 39(3), 635–677.
- Sharma, P., & Manikutty, S. (2005). Strategic divestments in family firms: Role of family structure and community culture. *Entrepreneurship Theory and Practice*, 29(3), 293–311.
- Shaver, M. J. (2011). The benefits of geographic sales diversification: How exporting facilitates capital investment. *Strategic Management Journal*, 32(10), 1046–1060.
- Shepherd, D. A., Covin, J. G., & Kuratko, D. F. (2009). Project failure from corporate entrepreneurship: Managing the grief process. *Journal of Business Venturing*, 24(6), 588–600.
- Siegel, P. H., Omer, K., Rigsby, J., & Theerathorn, P. (1995). International diversification: A review and analysis of the evidence. *Managerial Finance*, 21(9), 50–77.
- Silverman, B. S. (1999). Technological resources and the direction of corporate diversification: Toward an integration of the resource-based view and transaction cost economics. *Management Science*, 45(8), 1109–1124.
- Simons, T., Pelled, L. H., & Smith, K. a. (1999). Making use of difference: Diversity, debate, and decision comprehensiveness in top management teams. *Academy of Management Journal*, 42(6), 662–673.
- Singla, C., Veliyath, R., & George, R. (2014). Family firms and internationalization-governance relationships: Evidence of secondary agency issues. *Strategic Management Journal*, 35(4), 606–616.
- Sirmon, D. G., Arregle, J. L., Hitt, M. A., & Webb, J. W. (2008). The role of family influence in firms' strategic responses to threat of imitation. *Entrepreneurship Theory and Practice*, 32(6), 979–998.
- Sirmon, D. G., & Hitt, M. A. (2003). Managing resources: Linking unique resources, management, and wealth creation in family firms. *Entrepreneurship Theory and Practice*, 27(4), 339–358.
- Slangen, A., & Hennart, J. F. (2007). Greenfield or acquisition entry: A review of the empirical foreign establishment mode literature. *Journal of International Management*, 13(4), 403–429.

- Solberg, C. A., & Nes, E. B. (2002). Exporter trust, commitment and marketing control in integrated and independent export channels. *International Business Review*, 11(4), 385–405.
- Souder, D., Simsek, Z., & Johnson, S. G. (2012). The differing effects of agent and founder CEOs on the firm's market expansion. *Strategic Management Journal*, 33(1), 23–41.
- Speckbacher, G., Neumann, K., & Hoffmann, W. (2015). Resource relatedness and the mode of entry into new businesses: Internal resource accumulation vs. access by collaborative arrangement. *Strategic Management Journal*, 36(11), 1675–1687.
- Srivastava, A., & Lee, H. (2005). Predicting order and timing of new product moves: The role of top management in corporate entrepreneurship. *Journal of Business Venturing*, 20(4), 459–481.
- Stadler, C., Mayer, M. C., Hautz, J., & Matzler, K. (2018). International and product diversification: Which strategy suits family managers?. *Global Strategy Journal*, 8(1), 184–207.
- Stewart, A., & Hitt, M. A. (2012). Why can't a family business be more like a nonfamily business?: Modes of professionalization in family firms. *Family Business Review*, 25(1), 58–86.
- Strike, V. M., Gao, J., & Bansal, P. (2006). Being good while being bad: Social responsibility and the international diversification of U.S. firms. *Journal of International Business Studies*, 37(5), 850–862.
- Su, W., & Tsang, E. W. K. (2015). Product diversification and financial performance: The moderating role of secondary stakeholders. *Academy of Management Journal*, 58(4), 1128–1148.
- Sun, S. L., Peng, M. W., & Tan, W. (2017). Institutional relatedness behind product diversification and international diversification. *Asia Pacific Journal of Management*, 34(2), 339–366.
- Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal*, 17(S2), 27–43.
- Tallman, S., & Li, J. (1996). Effects of international diversity and product diversity on the performance of multinational firms. *Academy of Management Journal*, 39(1), 179–196.
- Tang, J., Crossan, M., & Rowe, W. G. (2011). Dominant CEO, deviant strategy, and extreme performance: The moderating role of a powerful board. *Journal of Management Studies*, 48(7), 1479–1503.

- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Teece, D. J., Rumelt, R., Dosi, G., & Winter, S. (1994). Understanding corporate coherence: Theory and evidence. *Journal of Economic Behavior and Organization*, 23(1), 1–30.
- Teng, B. S. (2007). Corporate entrepreneurship activities through strategic alliances: A resource-based approach toward competitive advantage. *Journal of Management Studies*, 44(1), 119–142.
- Tihanyi, L., Ellstrand, A. E., Daily, C. M., & Dalton, D. R. (2000). Composition of the top management team and firm international diversification. *Journal of Management*, 26(6), 1157–1177.
- Tihanyi, L., Johnson, R. A., Hoskisson, R. E., & Hitt, M. A. (2003). Institutional ownership differences and international diversification: The effects of boards of directors and technological opportunity. *Academy of Management Journal*, 46(2), 195–211.
- Tippmann, E., Scott, P. S., & Parker, A. (2017). Boundary capabilities in MNCs: Knowledge transformation for creative solution development. *Journal of Management Studies*, 54(4), 455–482.
- US BEA. (2001). *U.S. international transactions: Third quarter 2001*. Press Release, December 12.
- Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly*, 42(1), 35–67.
- Verbeke, A., Chrisman, J. J., & Yuan, W. (2007). A note on strategic renewal and corporate venturing in the subsidiaries of multinational enterprises. *Entrepreneurship Theory and Practice*, 2007, 31(4), 585–600.
- Verbeke, A., & Kano, L. (2012). The transaction cost economics theory of the family firm: Family-based human asset specificity and the bifurcation bias. *Entrepreneurship Theory and Practice*, 36(6), 1183–1205.
- Villalonga, B., & Amit R. (2006). How do family ownership, control, and management affect firm value? *Journal of Financial Economics*, 80(2), 385–417.
- Villalonga, B., Amit, R., Trujillo, M. A., & Guzmán, A. (2015). Governance of family firms. *Annual Review of Financial Economics*, 7, 635–654.
- Vlasic, B. (1998). The little car that could carry Chrysler overseas. *Business Week*. 39.

- Wally, S., & Becerra, M. (2001). Top management team characteristics and strategic changes in international diversification: The case of U.S. multinationals in the European community. *Group & Organization Management*, 26(2), 165–188.
- Wan, W. P., & Hoskisson, R. E. (2003). Home country environments, corporate diversification strategies, and firm performance. *Academy of Management Journal*, 46(1), 27–45.
- Wan, W. P., Hoskisson, R. E., Short, J. C., & Yiu, D. W. (2011). Resource-based theory and corporate diversification: Accomplishments and opportunities. *Journal of Management*, 37(5), 1335–1368.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180.
- Westhead, P., & Howorth, C. (2007). “Types” of private family firms: An exploratory conceptual and empirical analysis. *Entrepreneurship & Regional Development*, 19(5), 405–431.
- Westman, C., & Thorgren, S. (2016). Partner conflicts in international joint ventures: A minority owner perspective. *Journal of International Management*, 22(2), 168–185.
- White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, 48, 817–838.
- Wiersema, M. F., & Bantel, K. A. (1992). Top management team demography and corporate strategic change. *Academy of Management Journal*, 35(1), 91–121.
- Wiersema, M. F., & Bowen, H. (2008). Corporate diversification: The impact of foreign competition, industry globalization, and product diversification. *Strategic Management Journal*, 29(2), 115–132.
- Wilden, R., Gudergan, S. P., Nielsen, B. B., & Lings, I. (2013). Dynamic capabilities and performance: Strategy, structure and environment. *Long Range Planning*, 46(1-2), 72–96.
- Williamson, O. (1975). *Markets and Hierarchies*. New York: Free Press.
- Winter, S., Cattani, G., & Dorsch, A. (2007). The value of moderate obsession: Insights from a new model of organizational search. *Organization Science*, 18(3), 403–419.
- Wooldridge, J. M. (2002). *Econometric analysis of cross section and panel data*. MIT Press: Cambridge.



- Wu, B. (2013). Opportunity costs, industry dynamics, and corporate diversification: Evidence from the cardiovascular medical device industry, 1976-2004. *Strategic Management Journal*, 34(11), 1265–1287.
- Xie, X., & O'Neill, H. M. (2014). Learning and product entry: How diversification patterns differ over firm age and knowledge domains in U.S. generic drug industry. *Strategic Management Journal*, 35(3), 440–449.
- Yip, G. S. (1982). Diversification entry: Internal development versus acquisition. *Strategic Management Journal*, 3(4), 331–345.
- Zaheer, S. (1995). Overcoming the liability of foreignness. *Academy of Management Journal*, 38(2), 341–363.
- Zaheer, S., & Mosakowski, E. (1997). The dynamics of the liability of foreignness: A global study of survival in financial services. *Strategic Management Journal*, 18(6), 439–464.
- Zahra, S. A. (1995). Corporate entrepreneurship and company performance: The case of management leveraged buyouts. *Journal of Business Venturing*, 10(3), 225–247.
- Zahra, S. A. (2005). Entrepreneurial risk taking in family firms. *Family Business Review*, 18(1), 23–40.
- Zahra, S., Filatotchev, I., & Wright, M. (2009). How do threshold firms sustain corporate entrepreneurship? The role of boards and absorptive capacity. *Journal of Business Venturing*, 24(3), 248–260.
- Zahra, S. A., & Garvis, D. M. (2000). International corporate entrepreneurship and firm performance: The moderating effect of international environmental hostility. *Journal of Business Venturing*, 15(5–6), 469–492.
- Zahra, S. A., Ireland, R. D., & Hitt, M. A. (2000). International expansion by new venture firms: International diversity, mode of market entry, technological learning, and performance. *Academy of Management Journal*, 43(5), 925–950.
- Zellweger, T. M., & Astrachan, J. H. (2008). On the Emotional Value of Owning a Firm. *Family Business Review*, 21(4), 347–363.
- Zellweger, T. M., Kellermanns, F. W., Chrisman, J. J., & Chua, J. H. (2012). Family control and family firm valuation by family CEOs: The importance of intentions for transgenerational control. *Organization Science*, 23(3), 851–868.
- Zellweger, T. M., & Nason, R. S. (2008). A stakeholder perspective on family firm performance. *Family Business Review*, 21(3), 203–216.

- Zellweger, T. M., Nason, R. S., Nordqvist, M., & Brush, C. G. (2013). Why do family firms strive for nonfinancial goals? An organizational identity perspective. *Entrepreneurship Theory and Practice*, 37(2), 229–248.
- Zollo, M., & Singh, H. (2004). Deliberate learning in corporate acquisitions: Post-acquisition strategies and integration capability in U.S. bank mergers. *Strategic Management Journal*, 25(13), 1233–1256.
- Zona, F. (2016). CEO leadership and board decision processes in family-controlled firms: comparing family and non-family CEOs. *Small Business Economics*, 47(3), 735–753.
- Zucker, L. G., & Darby, M. R. (2005). An evolutionary approach to institutions and social construction. In K. G. Smith & M. A. Hitt (Eds.), *Great minds in management: The process of theory development*. Oxford, U.K.: Oxford University Press.