# DO FAMILY TIES AFFECT FAMILY FIRM PERFORMANCE?

# EVIDENCE FROM EAST ASIA

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The study investigates the effect of family on firm performance in East Asia. We also examine the indirect impact of family on firm performance by uncovering the influence of family on firm strategies which are research and development (R&D) and leverage. Structural equation model (SEM) is applied to capture simultaneous relationships. Our findings show that family ties are important factor influence firm performance and firm strategies. Families with strong family ties contribute positively to firm performance. Meanwhile, families with weak family ties make family firms perform worse than nonfamily firms. In addition, families with strong family ties influence firm strategies such as borrowing more and investing less in R&D than nonfamily firms. In contrast, families with weak family ties show no role on determining firm strategies. Our results are robust to alternative family value measurements as well performance measurements.

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The study investigates the effect of family on firm performance in East Asia. We also examine the indirect impact of family on firm performance by uncovering the influence of family on firm strategies which are research and development (R&D) and leverage. Structural equation model (SEM) is applied to capture simultaneous relationships. Our findings show that family ties are important factor influence firm performance and firm strategies. Families with strong family ties contribute positively to firm performance. Meanwhile, families with weak family ties make family firms perform worse than nonfamily firms. In addition, families with strong family ties influence firm strategies such as borrowing more and investing less in R&D than nonfamily firms. In contrast, families with weak family ties show no role on determining firm strategies. Our results are robust to alternative family value measurements as well performance measurements.

## I. INTRODUCTION

The effect of founding families on family firm performance has been emerging in family business literature since predominant study of Anderson and Reeb (2003a). Numerous studies have continued to study family firm versus nonfamily firm performance. O'Boyle et al. (2012) find that family firms are neither outperformed nor underperformed relative to nonfamily firms across studies. Wagner et al. (2015) find that various results observed across studies deriving

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from the way scholars define a family firm, performance measurement, public versus private family firms, the size of firm, and national culture. Dyer (2018) argue that purely studying differences in performance between family versus nonfamily firms cannot truly enlighten the effect of family on firm performance. "The study by Anderson and Reeb (2003) includes firms such as Microsoft in their sample of "founder-led family firms." Although the impact of Bill Gates on the firm is undeniable, it is unclear what effect, if any, the Gates *family* has had on Microsoft's performance" (Dyer, 2006, page 258). This paper aims to fulfill this gap by answering the question "*What does type of family firms perform better than non-family firms?".*

Agency theory and Resource-Based View are used as theoretical framework to explain the diverse effect of different 'types' of family firms on performance. Agency theory argues that the alignment of interests between principals (owners) and agents (managers) will generate few "agency costs" caused by opportunistic behaviors. A family in which principals are also the agents, type I "agency cost" is likely to be zero; hence, ceteris paribus, family firms should be outperformed relative to nonfamily firms where principals and agents pursue their own interest at the expense of others. However, Gomez-Mejia et al. (2001) find that when the issue of "altruism" exists in principal-agent relationship, a potential agency cost is borne. Family members who have close relationship with other members may emotionally monitor each other; consequently, decision-making process is affected by emotional factors rather than logic factors. This leads shirking and opportunism occur in a family firm. Specially, when family members do not trust each other and share the same value, the conflicts of interests between family members would rise. Hence, agency costs in family firms should be treated on continuum where family firms face low agency costs due to high trust in the family and common goals, while at the other end of continuum, family firms would faces high agency costs when family members take advantage of preferred position as well incur more expense to deal with family conflicts (Gibb Dyer Jr, 2006).

From the Resource-Based View, we see that families bring both assets and liabilities to family firms under certain circumstances (Gibb Dyer Jr, 2006). Family firms can generate resources or assets in various forms such as human resources (family members who are highly motivated, loyal and deep trained), social capital (family members use their inside/outside important social connection contribute to firms' business), physical/financial capital (family members use

personal assets to support the business). While other family firms may generate liabilities when unqualified family members assigned on management position due to nepotism; family members distrust outside family, hence do not foster and nurture social connection which produce social capital; and family members exploit firm recourse for personal needs. Hence, we see another continuum on high to low assets and high to low liabilities.

We classify family firms into four groups corresponding typology of "four" types of family firms developed by Dyer (2006)[2]. First, the family firms with strong family ties and family CEO is categorized correspondingly the "clan family firm". These family firms are expected to have high family assets and low agency cost. Second, the family firms with strong family ties and professional CEO are grouped correspondingly the "professional family firm". High assets family but also high agency costs are expected to occur in this type of family firms. The third group is family firms with weak family ties and family CEO, corresponding the "mom and pop family firm" typology; these family firms are expected to have the low agency costs but high family liabilities family firm. The last category is family firms with weak family ties and outside CEO, corresponding the "self-interested family firm" typology. We hypothesize that clan family firms generate highest financial performance due to its advantages of high family assets and low agency cost. In contrast, we expect that self-interested family firms perform worse since this type of firms suffer with high agency costs and high liabilities. The professional firms are likely to perform better than nonfamily firms since both face high agency costs, but professional firms may take advantages from social capital families bring to the business, while nonfamily firms do not have. We expect that mom and pop family firms are neither outperformed nor underperformed relative to nonfamily firms due to the low agency cost but high liabilities which may offset each other.

East Asia provides an ideal setting for studying influences of family on firm performance for two major reasons. First, family control is the dominant and stable ownership form in this region (Claessens et al., 2000, Carney and Child, 2013). Second, family ties in East Asia is expected to have significant effect on family firms since scholars have long-portrayed that East Asia is peculiar to Europe and North America with extended family coresidence and "strong" family ties

[2] For more detail on typology of "four" types of family firms, see DYER, W. G. 2006. Examining the "family effect" on firm performance. *Family business review,* 19**,** 253-273.

(Goode, 1963, Reher, 2004, Reher, 1998). Using more than 800 largely public firms in eight East Asia countries, we end up with 15,000 firm-year observations during period of 2000 to 2017. We apply structural equation model (SEM) to capture simultaneous relationships. We also investigate the impact of family on firm strategies which are research and development (R&D) and leverage. Our findings significantly support our expectations. The results are robust to alternative family value and firm performance measurements.

Our paper contributes to family business literature in several ways. The important contribution is that we shed light the impact of *family* on family firm performance, which has been mostly failed to address in previous studies (Dyer, 2018). By applying typology of "four" family firms supposed by Dyer (2006), we capture the heterokadasticity of family firms as well dynamic effect of family on firm performance. Secondly, although it has been long asserted that family brings more advantageous competition to family firms over nonfamily firms (Tagiuri and Davis, 1996), few scholars could link the relationship between family and firm performance under clear theoretical framework (Hoffman et al., 2006). Adopting family capital theory proposed by Hoffman et al. (2006), we add light to the mechanism under which family affect performance of a firm. Thirdly, the less attention of mediation effects of firm strategies on the family control-firm performance relationship leads to a genuine source of confusion in the family firm performance literature (Carney et al., 2015). The influences of family on strategic choices with regard to capital structure, research and development intensity, product diversification, and internationalization have been examined by many researchers (Anderson and Reeb, 2003b, Gomez-Mejia et al., 2010). In addition, numerous numbers of studies have examined the direct relationship between family control and financial performance. However, only a few study (Carney et al., 2015, Sirmon et al., 2008) have examined the mediating effect of firm strategies in the family control–firm performance relationship. Daily and Dollinger (1992) find that family firms are characterized somewhat differently from nonfamily firms in terms of strategy, structure, and human-resource systems. The differences are explained as the result of family involvement. This raise an issue on whether the family truly foster such differences in firm characteristics, or do they derive from some other driven factors? Taking into account this issue, we examine both direct and indirect effect of family on performance by uncovering the influence of family on strategies the firm employed.

The rest of the paper is structured as follows. Section 2 reviews the literature review and propose hypothesis. Section 3 presents data and methodology. Section 4 displays the results and discussion. Section 5 provides the conclusion.

## II. LITERATURE REVIEW AND HYPOTHESIS

The family firm research has been emerging in both theory and practice over the past three decades (Pindado and Requejo, 2015). There is no universal definition of a family firm (Prencipe et al., 2014, Bennedsen et al., 2010). We take a definition of a family firm, which can be distinguish a family firm from others, that is the involvement of family in ownership and governance, a vision for how the firm benefit the family, potentially passing to next generations.

> "…governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families"
>
> (Chua et al., 1999, p.25)

We adopt contingency theory of family firm performance to set typology of "four" types of family firms, which is promulgated by Dyer (2006). The theory is developed under umbrella of two most fruitful theories which are Resource-Base View and agency theory. Therefore, it is good practice by reviewing Resource-Base View and agency theory, the root of contingency theory of family firms.

### Resourced-Based View and family firm performance

Resource-Based View is fruitful theoretical framework in explaining family firm performance (Habbershon and Williams, 1999, Dyer, 2006, Hoffman et al., 2006, Dyer, 2018). In family firms, the strong integration of family and business generates distinctive features of family firms, building competitive advantages in terms of human capital, social capital, physical/financial capital (Habbershon and Williams, 1999, Chua et al., 1999, Hoffman et al., 2006). Social capital is related to relationship among people in an organization as well between an organization and external parties. The close relationship among people in the organization can reduce transaction cost and facilitate information flows more effectively (Lin, 2002). In family firms, competitive advantages can be generated through sharing more privacy information with the high level of

trust and communicating more efficiently (Tagiuri and Davis, 1996). In addition, high cohesiveness and commitment of the workforce may be generated due to the shared values and goals, which contribute to competitive advantages over non-family firms (Lyman, 1991). Gomez-Mejia et al. (2001) illustrate that family firms may achieve some advantages when developing social capital between founding families and stakeholders. Chrisman et al. (2009) show that family firms gain more benefit from resources deriving from external relationships, while nonfamily firms based on functional skills to gain benefit. Typically, generations of founding families can be able to foster and nurture long-standing relationship with stakeholders; as a result, stakeholders may be more prefer embedding personal relationship to a family firms over non-family firm (Carney, 2005). Furthermore, family firms can improve family image and reputation within external community by developing and maintaining relationships with key stakeholders. On the other hand, the presence of strong familial bonds may create disadvantages. In a long classic study, Edward (1958) show that families from southern Italy where "familism" is excessively featured are "amoral familism" and distrust outside of family. Families who set up bars to prevent from outsiders may be unable to access to needed resources to develop sustainably their business. "Amoral familism" may lead to lack of "spontaneous sociability", which is essential to organization building Fukuyama (1995).

Human capital is referred to a definition of the knowledge and skills encompassed in people (Hatch and Dyer, 2004). In one study of Habbershon and Williams (1999), human capital is described as one of advantageous factors families bring to the firm. An family-oriented workplace is fostered by family firm where employees are greater inspired and more loyal (Ward, 1988). Overall, family firms are characterized by having strong motivation, more flexibility (Ward, 1997), more trusting (Tagiuri and Davis, 1996), low monitor and transaction cost for employees (Daily and Dollinger, 1992). On the other hand, family firms are also challenged by lack of access to qualified human resource caused by favoritism toward kin over unfamily qualified individuals (Carney, 1998). Unfair human resource practice management leads to reduce deleteriously incentive of employees investing specific knowledge in firms (Miller et al., 2008).

Financial capital is defined by Hunt (1999), which relates to the current and potential financial resources of the firm, accompanied with the ease of access to new resources in financial markets

and its average cost of capital. Family firms are described to have unique financial resources due to long-term orientation (Dyer Jr, 2003). Family members are concerned on longevity of the business through generations and protect the long-term financial security of the founding generation provide "patient" capital and low cost of capital (Aronoff and Ward, 1995). Sirmon and Hitt (2003) assert that "survivability capital" can provide competitive advantage to family firm, which nonfamily firms do not have. As they mention "survivability capital can help sustain the business during poor economic times or, for example, after an unsuccessful extension or new market venture. This safety net is less likely to occur in nonfamily firms due to the lack of loyalty, strong ties, or long-term commitments on the part of employees" (2003, p. 343). On one hand, family members can use their own assets to support business. On the other hand, families may take assets out of the business to fulfill family needs. The integration between family and business may generate difficulty in making accountability; opportunism on the part of family members have chance to increase. Therefore, family can add more resource to firm or expropriate firm resource.

In summary, families can create competitive advantages which are assets of firms (e.g. social capital, human capital, financial capital) or may create liabilities (e.g. unqualified employees, opportunism, expropriation of firm) bring to family business under different circumstances.

**Agency theory and family firm performance**

Another promising theory is used to discuss family firm performance is agency theory (Morck et al., 1988). Jensen (1986) assert that agency cost is less severe in family firms due to alignment of interests between managers and shareholders, reducing opportunistic behaviors of managers and increasing a propensity toward careful conservation of resource relative to nonfamily firms. Even family firms with managers from outside, family shareholders as undiversified, large block holdings will put more effort in monitoring firm managers, reducing agency cost of free cash flows (Anderson and Reeb, 2003a).

Some may argue that the alignment of interests between owners and managers is not unique to family firms. Nonfamily owners can also enjoy the low agency cost benefits resulted from not separation of owners and managers. Hence, owner management is advantage not solely generated by "family". However, in family firms, the familial relationships between owners and those managers may contribute more to agency costs reduction. Owners of family firms do not

need to spend more for monitoring agents who are family members such as their sons, daughters, brothers due to the presence of high trust in the familial relationships. Indeed, Ensley and Pearson (2005) provide evidence that top management teams in family firms are more cohesive since they share common goals and values and trust each other, this helps family firms avoid cumbersome and costly monitoring mechanism.

Some scholars assert that family firms sometimes create environment that breeds and nurtures relationships fraught with conflict. Hence, rather family harmony, family firms are filled with conflict, treachery, and deceit caused from complex conflicts and competing goals. The different views of ownership distribution, compensation, risk, and responsibility may seed fights among family members. Consequently, family members whose ownership is minor can free ride on the controlling owners' equity (Schulze et al., 2003). Another features related to family which may not realize the benefit of low agency costs is *altruism* (or *particularism*). Altruism may make the monitoring of family members' work hardly to be fair. Schulze et al. (2001) argue that altruism, treating people for who they are rather than what they do, considered as disadvantage may harm family business performance. More than hundred years ago, Weber (1946) note that nepotism, the outcome of altruism, is the root of adverse selection, ineffective monitoring and employee performance evaluation. These in turn will foster shirking and opportunism. Hence, altruism is main resource of nurturing conflicts between family versus nonfamily members, and even among family members.

In summary, familial ties on one hand generate common goals, values, and trust among family members; these help to reduce agency costs effectively. On the other hand, family may amply conflicts among family members who have competing goals, creating more incentives to free ride. Moreover, altruism which is likely to pervade most families could lead to ineffective monitor, evaluation, and discipline among family members. This can cause an adverse selection, shirking, and opportunism which undermining firm performance.

**Family capital theory and competitive advantages of family firms**

From Resource-Based View, among three types of capital, the social capital is the most important resource that lead family firms hold competitive advantages over nonfamily firms. Social capital also increase the benefits of investment in human and physical capital (Putnam, 1993). Social capital is a resource deriving from fostering relationships between individuals.

Nahapiet and Ghoshal (1998) show that social capital is fostered and nurtured through strong network, cross-cutting personal relationships developed over time, which is background for trust. However, social capital can be acquired in strategic factors market as Barney (1986) refer, it may be not competitive advantage resource for only family firms.
So, what is true generis that leads family firms more advantageous than nonfamily and that nonfamily cannot imitate?

Hoffman et al. (2006) introduce concept of family capital as a special form of social capital, one that is only limited to family relationships. Family capital is defined as "a valuable, rare, inimitable, unsubstitutable, and path-dependent resource. This resource called family capital can then lead to the ready creation of an abundance of other resources that, themselves, lead to sustained competitive advantage" (Hoffman et al., 2006, page 141). More importantly, family capital is not available for acquisition (Nahapiet and Ghoshal, 1998). This makes family capital may be true and significant resource that family firms hold to create competitive advantages over nonfamily firms. Family capital theory suggests that "Family businesses with high levels of family capital possibly do hold a sustained competitive advantage over family businesses with low levels of family capital and/or nonfamily businesses" (Hoffman, 2006, page 142).

Hoffman et al. (2006) state that family ties which nurture the social structure of families are stronger, more intense, and more enduring than those exist in the social structure of nonfamily firm and community. Consequently, family capital is likely to have significant influences in social network than social capital do. More detail, Putnam (1993) show that in a family business environment containing strong family ties, family capital is nurtured. In contrast, with the absence of family ties, the family capital is harmed. Strong family ties lead to consistent and trustworthy conduct, which send signal to community their key characteristics of families to maximize their social status. Social status is interpreted as reputation. Families with high reputation can create much benefits for family business such as low monitor and transaction costs, efficiencies in resource procurement, lower costs of capital, and other efficiencies (Burt, 2009). In addition, family members will take values or standard of a family as a benchmark to refer (Tajfel, 1982). Hence, family members tied strongly by familial relationships are more concerned for collective processed and outcomes, enhancing and strengthening family norms and collective goals (Hoffman et al., 2006). Family members with strong family ties are less likely to

act as free rider at the expense of firm business. Strong family ties also increase opportunities for information exchange and enhance frequency of cooperation (Lewicki and Bunker, 1996). In a family business, the trustworthiness of other family members are learned through family interactions and networks that has been developed over time. Strong family ties will provide facility for reinforce beliefs among family members as beliefs about appropriate behavior and relationships are fostered by enduring nature of these networks. In contrast, lack of ties among family members will create significant barriers to share information, learn and create knowledge.

In conclusion, family ties nurture family capital through fostering and increasing reputation, trust, family values, and family identity. Family ties which foster family capital are unique to and used by only family firms to generate competitive advantages over nonfamily firms; in turn these competitive advantage positively influence family business performance. Hence, family ties which is not available for acquisition may be real and significant factor that make family firms distinguish from nonfamily firms. Following family capital theory (Hoffman et al., 2006) and contingency theory of family firms (Dyer, 2018), we categorize family firms in typology as describe below.

**The "Family Effect" Within the Population of Family Firms**

Based on Resource-Based View and agency theory perspective discussed above, we see not all family firms are able to achieve benefits from family involvements. Some family firms with particular features may enjoy low agency costs accompanied with unique resources which generate competitive advantages to family firms over nonfamily firms. While some family firms may suffer from high agency costs and significant liabilities (e.g. poor human, social, and financial capital). To capture the differences in organizational forms and the outcomes derived from those forms, typologies are proved as useful method which allows to find fine-grain differences even they are frequently glossed. Hence, we adopt typology of "four" types of family firms proposed by Gibb Dyer Jr (2006) to investigate how family affect family firm performance.

**Quadrant I – Family firms with strong family ties and family CEO: Low Agency Costs, High Family Assets: The Clan Family Firms**

The first type of family firms is one which has strong family ties and is managed by family CEO. This type of family firm is similar to typology of "Clan family firms" in study of Dyer (2006). The name of this type of firms, "clan" expresses the fact that it achieves benefits from "clan control". Families that have strong family ties will shares common goals, values, norm and high trust; as the result, family firms can communicate and coordinate effectively within family members, reducing transaction costs. In the clan family firms, the long-term family and firm goals are isomorphic, both firm and family needs are pursued. Conflicting goals among family members are low as high obligations and expectations fostered by strong family ties. Hence, agency costs are expected to low due to common goals shared among family owners and family managers. In addition, strong family ties create high trust, harmony among family members, high obligations and expectations; these help families achieve respects from community, creating high social status for families known as reputation. Consequently, outside counterparts are willing to build long-lasting relationships with reputable family firms, which create goodwill for family business (Habbershon and Williams, 1999). Strong family ties facilitate environment where people are work for others than themselves, human capital is utilized at the most effective manner by contributing their skills and commitment to firm survival and success. In addition, strong family ties encourage family members contribute their assets to support family business since they trust each other and have common goals. Wong et al. (1992) show that financial resources from families in Chinese family firms are main resources that help them to overcome difficult times.

In summary, strong family ties generate competitive advantages to family firms over nonfamily firms through fostering and nurturing obligation, expectation, reputation and collective trust which contribute to family capital and utilizing effectively human, social and financial capitals. Moreover, clan family firms enjoy low agency costs than nonfamily firms due to alignment of interests between owners and managers. We see family firms with strong family ties and managed by family members is the clan firm that are likely to have highest performance. We hypothesize that:

H1: *Ceteris paribus, clan family firms will perform better than nonfamily firms.*

**Quadrant II—High Agency Costs, High Family Assets: The Professional Family Firms**

Professional family firms are described that have "professional culture" as it hires professional managers; relationships and governance in this type of firm are built on professional codes of conduct. The Marriott Corporation or WalMart are example of profession firms when they maintain significant proportion of ownership but hire professional managers to run their business (Dyer, 1989). It is expected that agency costs in professional firms is relatively high to those of clan family firms due to costs of monitoring outside family managers and formalizing control systems. However, inasmuch as costs are borne, formal monitoring mechanisms are implemented; this systems help firms avoids the problems of opportunism and nepotism that may arise from family businesses. With the professional control system, family assets are protected and develop in professional manner, to the extent that the firm's resources are ensured not to squander by the family. Compared to nonfamily firms, professional family firms incur similarly costs of monitoring managers, but are more lightly advantageous than nonfamily firms due to family and social capital generated from families. We hypothesize that:

H2: *Ceteris paribus, professional family firms will lightly perform better than nonfamily firms.*

**Quadrant III—Low Agency Costs, High Family Liabilities: The Mom & Pop Family Firms**

Mom and Pop family firms are describes as firm managed by a family, but they are not able to cultivate family resources to help the firm grow. This type of firms has similar advantages of low agency costs like clan family firms due to alignment of interests between owners and managers. However, family liabilities are also borne in this type of firm. Define a little bit differently from origin definition of "mom and pop" business, we refer mom and pop family firms ones that have low family capital due to weak family ties; hence cannot develop family business effectively. Families that have weak family ties are unable connect family members to generate family capital, which is main resource to create competitive advantages. In this type of firms, goals of family members are divergent due to loose family norms. This fosters family liabilities such as competing goals, free rider, shirking, opportunism and adverse selection. Family members may pursue their interest at the expense of the firms and of other family members. Firm may become widely dispersed among family members whose goals are divergent (Lansberg, 1999). In families with weak family ties, collective trust between family members and reputation as a result of obligation and expectation are low. Consequently, social and financial capital cannot be

utilized effectively due to conflicts between family members, free rider or unskilled family members. In addition, outside family counterparts are also reluctant to invest in conflicting family firms. The divergence in goals and self-interest behaviors will detriment firm performance (Kaye, 1991). Even advance in low agency costs of monitoring managers compared to nonfamily firms, mom and pop family firm bear high family liabilities that offset the benefits of low agency costs. In other words, the benefits of low agency costs are burned by family liabilities. We expect that mom and pop family firms do not perform better or even worse compared to nonfamily firms. We hypothesize that:

H3: *Ceteris paribus, mom and pop family firms do not perform better or even worse than nonfamily firms.*

**Quadrant IV—High Agency Costs, High Family Liabilities: The Self-Interested Family Firms**

Incur similarly to mom and pop family firms which have high family liabilities, self-interested family firms additionally suffer high agency costs due to separation of owners and managers. By the lack of formal monitoring systems and the self-interested nature of the family, the agency costs in this type of firms is high. We expected that self-interest firms perform worse relatively to nonfamily firms as it not only incurs similar high agency costs like nonfamily firms, but it also suffer high family liabilities. We hypothesize that:

H4: *Ceteris paribus, self-interested family firms will perform worse than nonfamily firms.*

## III. METHODOLOGY

### 3.1 Data

We collect data from several sources. Firstly, we obtain ultimate ownership data of publicly traded firms in East Asian countries from the study of Carney and Child (2013). This dataset includes 200 largest publicly traded firms in each nine East Asian countries including Japan, South Korea, Taiwan, HongKong, Singapore, Malaysia, Indonesia, Philippines, and Thailand. From this data, we exclude all Japanese corporations for several reasons. Japanese firms are most distinctive from the rest of firms in East Asia. Having most widely dispersed ownership structures, the separation of ownership and managements are far often than in East Asia economies (Claessens et al., 2002). The largest shareholders in Japanese firms are widely held

financial institutions, which is much different from many economies in the region. More importantly, financial institutions and their affiliated firms often cooperated to influence the governance of the owned corporations, which is unable to capture by formal ownership data. Hence, we exclude Japan in our set of East Asia economies analysis to avoid outlier effects. Secondly, we exclude financial institutions for being consistent with current literature (Anderson and Reeb, 2003b, Driffield et al., 2006, Ampenberger et al., 2013).

To control for the change in the type of ownership structure of firm during study period, we use database of Merger and Acquisition (M&A) from Bloomberg during period of 2000 to 2017. For conservative check, we exclude those firms that are targets in M&A for which we cannot determine ultimate ownership of acquires.

Next, we extract firm financial data from Datastream and then match manually the ownership dataset with the firm financial data. After deleting firms with insufficient financial data, we end up with 15,000 firm-year observations.

We use six waves of the World Values Survey (WVS) to measure strength of family ties, following study of Bertrand and Schoar (2006) and Alesina et al. (2015). The WVS is an international social survey of six waves 1981–1984, 1990–1994, 1995–1998, 1999-2004, 2005–2009, and 2010-2014 denoted henceforth 1980, 1990, 1995, 2000, 2005 and 2010. The coverage varies depending on the wave, starting with 22 countries in 1980 and reaching 81 countries in the sixth wave. This survey provides, among other things, a wide range of subjective indicators on the relationship between parents and children and, as an objective measure of family attachment, whether the individual lives with his/her parents. Many previous scholar have been used the WVS to investigate the impact of culture on economic outcomes (Bertrand and Schoar, 2006, Alesina et al., 2015, Alesina and Giuliano, 2010, Inglehart and Baker, 2000). Minkov and Hofstede (2012) finds new evidence on similar Hosted' fifth dimension from WVS.

### 3.2 Variables

#### *Firm performance*

The broad definition of performance is the efficiencies in terms of utilization of resources to accomplish the goals of an organization (Steers, 1982, cited in Gibb Dyer Jr (2006). Families are asserted to influence firm performance primarily through family relationship, family goal and

family resources. The dependent variable in our study is ROA (return on assets), defined as the net operating income before extraordinary items divided by total assets. ROA has been commonly used to assess the impact of governance characteristics on firm performance, including family firm performance (Anderson and Reeb, 2003a, Minichilli et al., 2014, Miller et al., 2013, Minichilli et al., 2010). ROA seems to be particularly apt to proxy the short-term financial performance of family firms compared to their long-term goals. Note a potential problem with this choice – family firms tend to be asset parsimonious, which enhances ROA, and firms judged by other standards like growth and Return on Investment (ROI) may be expected to suppress ROA. However, ROA is generally the one of interest to the target audience, namely the family business, so we chose to use it here. In order to increase the robustness of our findings, we also report our main analyses using ROE (return on equity), which is considered to be particularly suitable to compare profitability under different economic cycles.

***Family ties***

We follow approach used in study of Alesina et al. (2015) to measure strength of family ties. Compared to approach of Alesina et al. (2015), we exclude two measurements which are parents' responsibility and respect parents. The reason is from the wave 5, World Survey Value has not taken these questions in survey. We base on questionnaires in World Survey Value using the following four measures:

i) living with parents: the question is an objective indicator of family strength and measures whether a young adult is living at home with his/her parents. Reher David (1998) in studying differences between weak and strong family ties in Europe indeed claims that "the strength and weakness refers to cultural patterns of family loyalties, allegiances, and authorities which are reflected in demographic patterns of coresidence with adult children and older family members".

ii) make parents proud: the question asks the respondents to agree or disagree (on a scale from 4, agree strongly, to 1, strongly disagree) with the following statement: one of the main goals in life has been to make my parents proud.

iii) obey parents: Which, if any, do you consider to be especially important? The question asks whether obedience is an important quality for children and can take the value of 1 if it is mention and 0 if not.

vi) family important: this question assesses how important the family is in one person's life and can take values from 4 to 1 (with 4 being very important and 1 not important at all).

We recode all the questions so that a higher number implies a stronger attachment to the family.

***Other variables***

One of independent variables is the presence of a family CEO , coded 1 if the CEO is affiliated with the controlling family and 0 otherwise. We included the following control variables in all regressions including firm size, business risk, investment opportunity set (Anderson and Reeb, 2003a, Miller et al., 2013). Finally, we control for industry. In addition, we use R&D and leverage as mediating variables in family firm performance relationship. Discussion on these mediating variables is presented below. Measurement of the variables is presented in Appendix 1.

### 3.3 Model design

***SEM procedure***

One of the most salient methods is structural equation modeling (SEM), which enables researchers to simultaneously examine a series of interrelated dependence relationships between a set of constructs, represented by several variables (e.g., scales), while accounting for measurement error (Rigdon,1998). We used SEM to test the relationship between family and their strategic decisions (Fernández and Nieto, 2005) and to examine the mediating role of strategy in the family-firm performance relationship. SEM method allows researchers to model, simultaneously estimate and test complex theories with empirical data. Figure 2 presents a proposed structural equation model in the family business context. The technique is ideally suited to analyze mediation effects because it permits testing of the direct effect of selected family firm strategic choices on firm performance, along with essential control variables affecting those strategic choices. We apply SEM to explore the mediating effects of two strategic variables which are R&D and leveraeg in the relationship between family and firm performance while controlling for firm size, growth opportunities, business risk, and industry.

As discussed above, we see family may affect firm strategies; then in turn, firm strategies will affect family performance. Our proposed model is present graphically in figure 2. Jointly, this yields the following system of structural equations, where ε is the error term.

$$R\&D = \beta_1 FF + \beta_2 firmsize +$$

$$leverage = \beta_3 FF + \beta_4 firmsize + \varepsilon$$

$$businessRisk = \beta_5 firmsize + \varepsilon$$

$$Growth = \beta_6 R\&D + \varepsilon$$

$$Performance = \beta_7 FF + \beta_8 firmsize + \beta_9 leverage + \beta_{10} R\&D + \beta_{11} businessrisk + \beta_{12} growth + \beta_{13} industry + \varepsilon$$

We employ covariance-based SEM (CB-SEM). In CB-SEM, a strong theory drives model development; hence, all known theoretical relationships need to be modeled. CB-SEM estimates model parameters so that the difference between the empirical covariance matrix and the covariance matrix determined by the theoretical model is minimized. Furthermore, fit statistics are computed to evaluate the extent to which the empirical data fit the theoretical research model. Thus, the theoretical model's correctness is the basic assumption that underlies the approach (Fornell, 1987). CB-SEM is viewed as the more appropriate approach by many authors when there is a solid or strong theoretical foundation for the proposed research model, as it was designed exactly for factor-based covariance-based SEM (CB-SEM) ( Jöreskog, 1978; Rigdon, 1998), which were developed as complementary SEM methods ( Jöreskog and Wold, 1982). CB-SEM has often been used during the past decades (379 of the articles we identified used CB-SEM), and its use is growing year-on-year. The majority of studies that apply SEM in this field apply CB-SEM.

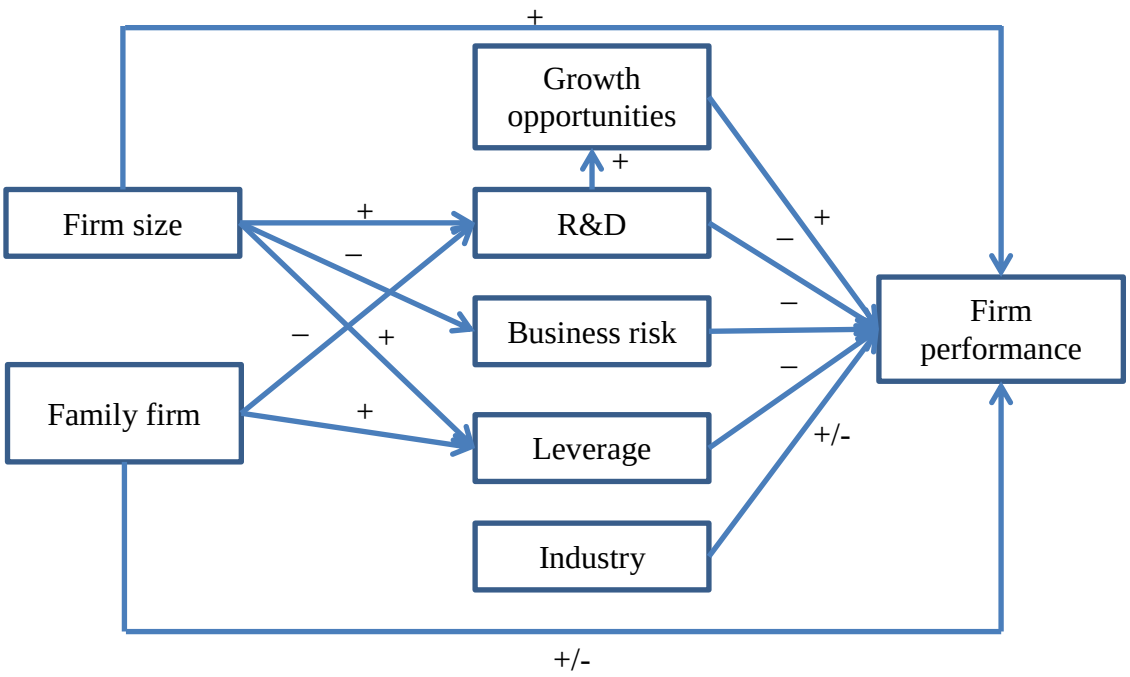


**Figure 2**: Effect of family on firm performance

## IV. RESULTS ANALYSIS

### 4.1 Data descriptive

We use industry classification following Campbell (1996). In table 1, the result shows that family firms are dominant ownership form, which accounts for around 40% of total firms compared to other ownership types. We see 9 over 11 industries in which family firms are prominent with more than 30%. It illustrates that family firms do business in all industries. Among industries, leisure industry has highest proportion of family firms, which account for 59%. In opposite, family ownership type is less in petroleum industry in which with only 8% is family-controlled firms.

Table 2 summarizes descriptive statistics of mean, standard deviation, min and max values for each variable in our model. The results in table 3 show that these variables are not highly correlated, since multicollinearity is not a concern in our models. Compared between nonfamily firms and family firms in general, we remark that family firms are less profitable than nonfamily firms (table 4). We see that family firms borrow more long-term debt than non-family firms,

while invest less in R&D. We find that family firms are smaller but older than non-family firms, have low growth opportunities, but higher level of risk relatively to nonfamily firms.

We classify family firms into typology of four "types" of firms which are clan family firms, professional family firms, pop and mum family firms, and self-interest family firms. Clan family firms are firms that have family CEO and strong family ties. Profession firms are firms that have professional CEO and strong family ties. Mom and pop family firms are firms that have low family ties and family CEO. Finally, self-interest family firms are firms that have outside CEO and low family ties. Compared those family firms with nonfamily firms, we illustrate that clan family firms generate highest financial performance measured by ROA, while professional family firms have highest performance measured by ROE (table 5). Mom and pop family firms and self-interest family firms are underperformed compared to nonfamily firms in both financial performance measurements. Regard to leverage, we see that professional family firms borrow much and also are exposure to highest level of risk. Among four types of family firms, only professional family firms have high investment opportunities relatively to nonfamily firms. We observe that clan family firms and professional family firms are smaller relatively to nonfamily firms.

### 4.2 Results

***Clan family firm versus nonfamily firm performance***

In table 6 (model 1), we see clan family firms are significantly outperformed relatively to nonfamily firms at 1% level of significance ($\beta$=0.99, $\rho$=0.0000). The results support our hypothesis which stated that *Ceteris paribus, clan family firms will perform better than nonfamily firms.*

We investigate both direct and indirect effect of clan family firms via firm strategy on firm performance. Regard to the effect of clan family firms on firm strategy, the findings show that clan family firms borrow more long term debt relatively to nonfamily firms ($\beta$=3.43, $\rho$=0.0000). Family firms with strong family ties focus on socioemotional wealth, hence they are more conservative of SEW endowment lose rather than financial losses. This explains that clan family firms use more debt maintain enhance control power, which is one of most important dimensions of socioemotional wealth (Berrone et al., 2012). In addition, family firms with strong family ties

are less willing to invest in R&D (β=0.09, ρ=0.0000) due to risky investment and dependence on outside experts in R&D investment (Chrisman and Patel, 2012). As the result, we see on one hand, clan family firms have negatively indirect effect on firm performance (β=-0.1287, ρ=0.055) when they borrow more and invest less in R&D.

One the other hand, we illustrate that strong family ties contribute significantly to firm performance measured by positively direct impact of this type of firms on performance (β=0.99, ρ=0.000). It can be explained that family firms with strong family ties will utilize effectively family capital, social capital, human capital and financial capital to create competitive advantages, then in turn enhance firm performance (Hoffman et al., 2006). In addition, family CEO reduces significantly agency costs of firms, which is considered of important factors contributing to firm performance.

In summary, clan family firms are outperformed relatively to family firms, measured by total effect of clan family firms on firm performance (β=0.86, ρ=0.000); this means the benefits of strong family ties generate more offset for disadvantage it affects firm strategies.

***Professional family firm versus nonfamily firm performance***

We expect that professional family firms are firms that have strong family ties and are managed by professional CEO will enjoy similar competitive advantages of clan firms yet suffer high agency costs. In table 6 (model 2), we see professional family firms are significantly outperformed relatively to nonfamily firms at 1% level of significance (β=0.96, ρ=0.0000). The results support our hypothesis which stated that *Ceteris paribus, profession family firms will perform better than nonfamily firms.*

We investigate both direct and indirect effect of professional family firms via firm strategy on firm performance. We observe that professional family firms are more aggressive in borrowing long term debt relatively to nonfamily firms (β=4.08, ρ=0.0000), even more than clan family firms. It can be explain that family firms with strong family ties are preservative of socioemotional wealth loses, using more debt to enhance control and influence of family on firms. In addition, professional family firms use debt as effective tool to reduce agency costs of free cash flows borne by separation between owners and managers. Similarly to clan family firms, we see professional family firms are less willing to invest in R&D (β=0.09, ρ=0.0000). As

the result, we see on one hand, professional family firms have negatively indirect effect on firm performance (β=-0.15, ρ=0.079) as using more debt reduce firm performance (β=-0.10, ρ=0.0000) and invest less in R&D also harm firm performance (β=-0.43, ρ=0.0000).

One the other hand, we conclude that, beside the benefits deriving from strong family ties, hiring professional CEO even may increase agency costs which reduce firm performance, the benefits bring to firms from professional business code are still larger so that professional family firms are still outperformed compared to nonfamily firms (β=0.97, ρ=0.010).

In summary, professional family firms are outperformed relatively to family firms, measured by total effect of clan family firms on firm performance (β=0.82, ρ=0.000); this means the benefits of strong family ties and professional business code generate more benefits than costs caused by separation of owners and managers and disadvantages from family influences.

***Mom and pop family firm versus nonfamily firm performance***

Mom and pop family firms are firms that have weak family ties; hence they cannot utilize family capital, social capital, human capital or financial capital to generate competitive advantage to firms. In addition, weak family ties may generate many issues such as altruism, free rider, opportunism, shirking when family members have competing goals, which strongly destroy firm performance. One advantage of this type of firms is low agency costs due to CEO of firms are affiliated to founding family. We expect that this kind of benefit is not large enough to offset for costs related to weak family ties. In table 6 (model 2), we see mom and pop family firms are significantly underperformed relatively to nonfamily firms at 1% level of significance (β=-0.76, ρ=0.007). The results support our hypothesis which stated *Ceteris paribus, mom and pop family firms do not perform better or even worse than nonfamily firms.*

We observe that mom and pop family firms neither borrow more nor less than nonfamily firms (β=0.023, ρ=0.979). It can be explain that family firms with weak family ties have low socioemotional wealth, hence they have less incentives to enjoy control and influence on firms (Berrone et al., 2012). Like common characteristic of family firms, mom and pop family firms, invest in R&D (β=0.05, ρ=0.0000), which in turn reduces firm performance (β=-0.4, ρ=0.0000). We see mom and pop family firms affect positively firm performance (β=0.97.4, ρ=0.045) via influencing firm strategy like using less debt. The benefits from using less debt in mom and pop

family firms bring benefits to firm performance, even investing less in R&D negatively affect firm performance.

However, the negative effect of weak family ties is significantly strong (β=-0.73, ρ=0.007) that cannot be offset by unseparation of owners and managers and using less debt. As the result, total effect of mom and pop family firms are significantly negative mom and pop firms are negatively (β=-0.64, ρ=0.002). We conclude that family ties may be true and one of most important factors differentiate family firms from nonfamily firms.

***Self-interested family firm versus nonfamily firm performance***

Suffer similarly issues related to mom and pop family firms that have weak family ties, self-interest family firms additionally incur high agency costs caused from hiring outside managers. We expect that self-interest family firms will perform worse compared to nonfamily firms. The findings support our hypothesis (β=-3.17, ρ=0.000). Families in self-interest firms play no role in family strategy; evidently that family firms have no effect on firm leverage (β=-0.73, ρ=0.230) and R&D investment (β=-0.00, ρ=0.668). Hence, self-interest firms have no indirect effect on firm performance via firm strategy. The total effect of self-interest family firms which are also direct effect are reported as significantly negative impact on firm performance (β=-3.09, ρ=0.000).

### 4.3 Robustness check

We check for robustness by exploring the impact of typology of four "types" of family firms by using alternative firm performance measurement which is ROE. The results are unchanged (table 6, model 5 to 6). In addition, some may argue that family ties may as not important as children quality since strong family ties accompanied with low quality of children may bear altruism and nepotism which affect seriously firm performance. Taking into account of that, we use alternative children quality as proxy for family values with argument that in families with strong relational ties will have strong family norm, belief, expectation and obedience, which in turn will contribute to firm performance. Family members use standard and values of family as reference of activities. Again, our findings are robust to alternative proxy of family ties (table 7).

# V. CONCLUSION

## 5.1 Conclusion

We have typology of "four" type of family firms following contingency theory developed by Dyer (2018). The low agency costs/high assets family firm is labeled the "clan family firm"; the high agency costs/high assets family firm is named the "professional family firm"; the low agency costs/high liabilities family firm is the "mom and pop family firm"; and the high agency costs/high liabilities family firm is labeled the "self-interested family firm". We hypothesize that clan family firms generate highest financial performance due to its advantages of high family assets and low agency cost. In contrast, we expect that self-interest family firms perform worse than nonfamily firms since this type of firms suffer with high agency costs and high liabilities borne by family influences. The professional firms are likely to perform slightly better than nonfamily firms since both face high agency costs, but professional firms may take advantages from social capital families bring to the business, while nonfamily firms do not have. We expect that mom and pop family firms should have mixed results compared to nonfamily firms since the low agency cost and high liabilities may offset each other.

East Asia provides an ideal setting for studying influences of family ownership on capital structure for two major reasons. First, family control is the dominant and stable ownership form in this region (Claessens et al., 2000, Carney and Child, 2013). Second, scholars have long-portrayed that East Asia is peculiar to Europe and North America with extended family coresidence and "strong" family ties (Goode, 1963, Reher, 2004). Using more than 800 largely public firms in eight East Asia countries, we end up with 15,000 firm-year observations during period of 2000 to 2017. We apply structural equation model (SEM) to capture simultaneous relationships. We also investigate the impact of family on firm strategies which are research and development (R&D) and leverage. Our findings significantly support our expectations. The results are robust to alternative family value and firm performance measurements.

In conclusion, we find that family ties especially play important role in determining firm performance. Family ties create family capital via increasing obedience, expectation, reputation, collective trust and moral belief, which in turn family capital generate competitive advantage. Firms with more competitive advantages can perform well compared with other firms that do not have. Hence, family ties is unique to only family, and it cannot be acquired in the strategic

factors market, family ties may be true and significant that make family firms differentiate from nonfamily firms.

### 5.2 Contribution

Our paper contributes to family business literature in several ways. The important contribution is that we shed light the impact of *family* on family firm performance, which has been mostly failed to address in previous studies (Dyer, 2018). Purely studying differences in performance between family versus nonfamily firms cannot truly enlighten the effect of family on firm performance. Moreover, although it has been long asserted that family brings more advantageous competition to family firms over nonfamily firms (Tagiuri and Davis, 1996), few scholars could link the relationship between family and firm performance under clear theoretical framework (Hoffman et al., 2006). Adopting family capital theory proposed by Hoffman et al. (2006), we add light to the mechanism under which family affect performance of a firm. Importantly, we explore that family ties may be true and significant factor that make family firms distinguish from nonfamily firms since family ties are truly unique to family firms, and it cannot be acquired in strategic factor markets

Secondly, Daily and Dollinger (1992) find that family firms are characterized somewhat differently from nonfamily firms in terms of strategy, structure, and human-resource systems. The differences are explained as the result of family involvement. However, this raise an issue on whether the family truly foster such differences in firm characteristics, or do they derive from some other driven factors? Taking into account this issue, we examine both direct and indirect effect of family on performance by uncovering the influence of family on strategies the firm employed. We employ SEM, which is relatively less used in family less business performance (Carney et al., 2015) to shed light how family influence affect firm strategy, then in turn, these strategies affect firm performance.

### 5.3 Limitation and further research

Religious is important factor that is expected to influence to human behaviors in many fields, including economics. However, due to limitation of dada available, we cannot take into account of this phenomenon. In addition, we acknowledge the influences of institutional environment on economic outcomes (Peng et al., 2018), hence, for further research, we should explore

moderating effect of institutional environment on the relationship between family firms and firm performance. Finally, the ownership distribution among family members may breed family fights and free rider, which affect family firm performance. Taking into account this factor will have to shed light the level of agency cost caused by familial relationships.

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## Appendix: Variable definitions and Data Sources Variable

| Variables | Definition | Source |
|---|---|---|
| Performance (ROA) | The ratio of operating income before interest and tax (EBIT) to total assets | Authors' calculation based on Datastream |
| Performance (ROE) | The ratio of operating income before interest and tax (EBIT) to common equity | As above |
| Family ties | Total of 4 variables:<br>living with parents (1: yes; 0: no)<br>make parents proud (1: yes; 0: no)<br>obey (1: yes; 0: no)<br>the importance of family (4: most important, 3: important, 2: little important; 0: not important) | World Values Survey (wave 2, 3, 4, 5, and 6) |
| Children quality | We factor analysis 7 variables measuring children quality including obedience, independence, responsibility, saving, determination, unselfishness, hardwork. Then, we take 3 factors for spiritchildren, independentchildren and obedientchildren to predict family values. | Above |
| Family CEO | A dummy variable equals 1 if a member of controlling family is also CEO, Chairman, or Vice-Chairman, otherwise 0 | Authors' calculation based on Carney and Child (2013) |
| Firm size | The natural logarithm of total assets in thousands of $US. | Authors' calculation based on Datastream |

| | | |
|---|---|---|
| Leverage | The ratio of long-term interest-bearing debt to market value of the firm | As above |
| Growth | We factor analysis for market value to book value of firm assets, market value to book value of equity and price to earning | As above |
| Research | R&D to net sales | As above |
| | | |
| Business risk | Standard deviation of stock price for previous 60 months | As above |

**Table 1: Family firms versus non-family firms by industry**

| Industry | All firms | | All firms | | |
|---|---|---|---|---|---|
| | Number of firms | % | Family | Non-family firm | Total |
| Petrolium | 26 | 3% | 2 | 24 | 26 |
| | | | 8% | 92% | 100% |
| Textiles | 71 | 8% | 36 | 35 | 71 |
| | | | 51% | 49% | 100% |
| Services | 46 | 5% | 17 | 29 | 46 |
| | | | 37% | 63% | 100% |
| Leisure | 51 | 6% | 30 | 21 | 51 |
| | | | 59% | 41% | 100% |
| Consumer Durable | 191 | 21% | 59 | 132 | 191 |
| | | | 31% | 69% | 100% |
| Basic Industry | 112 | 13% | 52 | 60 | 112 |
| | | | 46% | 54% | 100% |
| Food/Tobaco | 106 | 12% | 59 | 47 | 106 |
| | | | 56% | 44% | 100% |
| Construction | 67 | 8% | 22 | 45 | 67 |
| | | | 33% | 67% | 100% |
| Capital Goods | 75 | 8% | 21 | 54 | 75 |
| | | | 28% | 72% | 100% |
| Transportation | 64 | 7% | 24 | 40 | 64 |
| | | | 38% | 63% | 100% |

| | | | | | |
|---|---|---|---|---|---|
| Utilities | 84 | 9% | 36 | 48 | 84 |
| | | | 43% | 57% | 100% |
| Total | 893 | 100% | 358 | 535 | 893 |
| | | | 40% | 60% | 100% |

**Table 2:** Data description

| Variable | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|
| **ROA** | 7.185683 | 10.16743 | -37.37673 | 40.35579 |
| **ROE** | 14.73461 | 25.25207 | -99.93375 | 145.6 |
| **Firm size** | 13.3314 | 1.77227 | 8.999249 | 17.71329 |
| **Growth** | -.0039499 | .9722094 | -1.076601 | 6.66759 |
| **R&D** | .0072813 | .0218705 | 0 | .1462689 |
| **Business risk** | 16.85204 | 11.07511 | 1.855211 | 74.86237 |
| **Leverage** | 12.52909 | 14.14405 | 0 | 60.4336 |
| **Firm_age** | 3.366701 | .7099919 | 0 | 5.01728 |

**Table 3:** Correlation covariance matrix

| | ROA | ROE | Firm size | Growth | R&D | Bus. risk | Leverage | Firm age |
|---|---|---|---|---|---|---|---|---|
| **ROA** | 1.0000 | | | | | | | |
| **ROE** | 0.6408 | 1.0000 | | | | | | |
| **Firm size** | 0.0259 | 0.0486 | 1.0000 | | | | | |
| **Growth** | 0.3949 | 0.3342 | -0.0603 | 1.0000 | | | | |
| **R&D** | -0.0591 | -0.0957 | 0.0676 | 0.1195 | 1.0000 | | | |
| **Bus. risk** | -0.1500 | -0.0551 | -0.2319 | -0.0838 | -0.0297 | 1.0000 | | |
| **Leverage** | -0.2067 | -0.0683 | 0.2915 | -0.2828 | -0.0996 | 0.1043 | 1.0000 | |
| **Firm age** | -0.0615 | -0.0532 | 0.1142 | -0.1021 | -0.1160 | -0.0388 | 0.0147 | 1.0000 |

**Table 4:** T-Test for financial firm performance between family firms and nonfamily firms in full sample and by country. Robust standard error adjusted for clustering by the firm are reported below correlation coefficient. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | **All sample** | **HKG** | **IDN** | **KOR** | **MYS** | **PHL** | **SGP** | **THA** | **TWN** |
|---|---|---|---|---|---|---|---|---|---|
| **Number of observations** | | | | | | | | | |
| Family firm | 6378 | 978 | 889 | 937 | 973 | 1023 | 806 | 628 | 144 |
| Non-family firm | 9561 | 884 | 788 | 1624 | 1222 | 257 | 945 | 1338 | 2503 |
| Total observations | 15939 | 1862 | 1677 | 2561 | 2195 | 1280 | 1751 | 1966 | 2647 |
| **Leverage** | | | | | | | | | |
| Family firm | 12.32 | 9.64 | 17.09 | 13.83 | 9.05 | 13.02 | 11.08 | 11.62 | 16.92 |
| Non-family firm | 11.47 | 11.45 | 10.38 | 12.79 | 11.59 | 6.91 | 9.45 | 13.77 | 10.78 |
| T-Test | (-3.74)*** | (2.95)** | (-8.23)*** | (-2.05)* | (4.66)*** | (-5.35)*** | (-2.46)* | (2.77)** | (-5.68)*** |
| **Firm size** | | | | | | | | | |
| Family firm | 13.06 | 13.22 | 12.77 | 14.85 | 12.97 | 12.03 | 12.52 | 12.68 | 14.11 |
| Non-family firm | 13.55 | 13.83 | 12.75 | 14.4 | 13.3 | 12.02 | 13.28 | 12.66 | 13.95 |
| T-Test | (16.89)*** | (6.67)*** | (-0.38) | (-6.59)*** | (5.34)*** | (-0.07) | (9.37)*** | (-0.23) | (-1.33) |
| **Growth** | | | | | | | | | |
| Family firm | -0.11 | -0.32 | 0.04 | -0.21 | 0.03 | -0.15 | -0.2 | 0.09 | -0.04 |
| Non-family firm | 0.08 | -0.22 | 0.15 | 0.09 | 0.14 | -0.01 | 0.07 | 0.15 | 0.11 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| T-Test | (11.32)*** | (2.62)** | -1.87 | (7.32)*** | (2.16)* | -1.53 | (5.43)*** | -1.09 | -1.83 |
| **Profitability** | | | | | | | | | |
| Family firm | 6.81 | 3.66 | 8.3 | 6.61 | 9.47 | 5.65 | 5.78 | 9.65 | 4.97 |
| Non-family firm | 7.53 | 4.59 | 11.79 | 6.77 | 8.9 | 6.51 | 5.43 | 8.87 | 7.22 |
| T-Test | (4.13)*** | -1.8 | (5.50)*** | -0.44 | (-1.28) | -1 | (-0.61) | (-1.52) | (2.85)** |
| **Business risk** | | | | | | | | | |
| Family firm | 17.57 | 16.62 | 25.9 | 17.49 | 12.71 | 20.94 | 15.23 | 14.57 | 13.86 |
| Non-family firm | 15.84 | 16.55 | 23.65 | 18.55 | 12.21 | 17.42 | 13.32 | 16.06 | 13.96 |
| T-Test | (-9.25)*** | (-0.13) | (-3.32)*** | (2.67)** | (-1.12) | (-3.31)*** | (-4.06)*** | (2.44)* | -0.16 |
| **R&D** | | | | | | | | | |
| Family firm | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 |
| Non-family firm | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.03 |
| T-Test | (20.84)*** | (0.65) | (5.50)*** | (2.57)* | (-3.39)*** | (-0.86) | (3.96)*** | (2.43)* | (3.35)*** |
| **Firm_age** | | | | | | | | | |
| Family firm | 3.38 | 3.91 | 3.26 | 3.39 | 3.19 | 3.57 | 3.01 | 3.21 | 3.21 |
| Non-family firm | 3.2 | 3.54 | 3.36 | 3.48 | 3.06 | 3.47 | 2.88 | 3.05 | 3.05 |
| T-Test | (-13.71)*** | (-8.12)*** | (3.50)*** | (2.76)** | (-3.86)*** | (-1.73) | (-3.16)** | (-5.30)*** | (-5.30)*** |

**Table 5**: T-test of financial performance and firm characteristics between nonfamily firms versus clan family firms, professional family firms, mom and pop family firms, and self-interest family firms. Robust standard error adjusted for clustering by the firm are reported below correlation coefficient. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| Variable | Performance (ROA) | Performance (ROE) | Firm size | Growth | R&D | Business risk | Leverage | Firm age | Observations |
|---|---|---|---|---|---|---|---|---|---|
| **Clan family firms versus nonfamily firms** | | | | | | | | | |
| Clan firms | 7.76 | 16.2 | 12.52 | -0.11 | 0 | 17.4 | 12.78 | 3.23 | 3324 |
| Nonfamily firms | 7.53 | 15.29 | 13.55 | 0.08 | 0.01 | 15.84 | 11.9 | 3.2 | 9892 |
| T-Test | (-1.06) | (-1.69) | (27.71)*** | (8.70)*** | (19.39)*** | (-6.63)*** | (-2.94)** | (-1.60) | 13216 |
| **Profession family firms versus nonfamily firms** | | | | | | | | | |
| Prof. firms | 7.47 | 18.78 | 12.6 | 0.14 | 0 | 19.4 | 13.52 | 3.37 | 1184 |
| Nonfamily firms | 7.53 | 15.29 | 13.55 | 0.08 | 0.01 | 15.84 | 11.9 | 3.2 | 9892 |
| T-Test | -0.18 | (-4.07)*** | (16.70)*** | (-1.84) | (11.85)*** | (-10.25)*** | (-3.58)*** | (-6.88)*** | 11076 |
| **Mom and pop family firms versus nonfamily firms** | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Pop&mom firms | 3.91 | 9.76 | 14.18 | -0.05 | 0.01 | 17.95 | 12.98 | 3.35 | 474 |
| Nonfamily firms | 7.53 | 15.29 | 13.55 | 0.08 | 0.01 | 15.84 | 11.9 | 3.2 | 9892 |
| T-test | (7.41)*** | (4.60)*** | (-7.37)*** | (2.65)** | -0.68 | (-4.14)*** | (-1.66) | (-3.93)*** | 10366 |

**Self-interest family firms versus nonfamily firms**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Self-int. firms | 5.44 | 11.01 | 13.99 | -0.31 | 0.01 | 16.5 | 12.92 | 3.71 | 1624 |
| Nonfamily firms | 7.53 | 15.29 | 13.55 | 0.08 | 0.01 | 15.84 | 11.9 | 3.2 | 9892 |
| T-test | (7.66)*** | (6.43)*** | (-8.92)*** | (14.28)*** | (6.70)*** | (-2.29)* | (-2.72)** | (-23.66)*** | 11516 |

**Table 6: Family ties and financial firm performance**

This table reports results of SEM on financial performance of nonfamily firms versus clan family firms, professional family firms, mom and pop family firms and self-interest family firms. The sample is composed of 12,578 firm-year observations representing 893 unique firms in 8 East Asia countries including South Korea, Taiwan, HongKong, Indonesia, Malaysia, Philippine, Singapore and Thailand over the period 2000–2017. The dependent variable is financial firm performance including ROA and ROE. Definition of variables appears in Appendix. A dummy variable for industry sector. Robust standard error adjusted for clustering by the firm are reported below correlation coefficient. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | ROA | | | | ROE | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 1 | Model 2 | Model 3 | Model 4 |
| **Profit** | | | | | | | | |
| ClanFirm | 0.9902*** | | | | 2.1268*** | | | |
| | -0.2216 | | | | -0.5527 | | | |
| Pro_Firm | | 0.9680*** | | | | 3.5338*** | | |
| | | -0.3738 | | | | -0.9907 | | |
| Pop_Mom_Firm | | | -0.7356*** | | | | -1.8068*** | |
| | | | -0.2712 | | | | -0.6791 | |
| Self_Int_Firm | | | | -3.1726*** | | | | -4.2931*** |
| | | | | -0.505 | | | | -1.4035 |
| Research | -42.6935*** | -43.8191*** | -39.4994*** | -40.4579*** | - | - | - | - |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 139.2293*** | 142.7654*** | 130.1874*** | 134.3966*** |
| | -5.8735 | -5.6789 | -5.5093 | -5.4933 | -12.7511 | -12.2554 | -11.8745 | -11.9081 |
| Growth | 4.0081*** | 4.2260*** | 3.8232*** | 4.0179*** | 8.6677*** | 9.7361*** | 7.8528*** | 8.4490*** |
| | -0.1455 | -0.1439 | -0.1629 | -0.1579 | -0.3936 | -0.425 | -0.4403 | -0.4174 |
| Leverage | -0.0966*** | -0.0963*** | -0.1101*** | -0.1075*** | -0.0158 | -0.0292 | -0.0814*** | -0.0495* |
| | -0.0074 | -0.0088 | -0.0084 | -0.0089 | -0.0256 | -0.0289 | -0.0276 | -0.0301 |
| Business risk | -0.0756*** | -0.0690*** | -0.0669*** | -0.0766*** | -0.0377 | -0.0464 | -0.0217 | -0.0569* |
| | -0.0103 | -0.0124 | -0.0119 | -0.0131 | -0.0277 | -0.0326 | -0.0311 | -0.0337 |
| Firm size | 0.2318*** | 0.3121*** | 0.3996*** | 0.3998*** | 0.7637*** | 0.8726*** | 1.1651*** | 1.1685*** |
| | -0.0687 | -0.074 | -0.0704 | -0.0749 | -0.1709 | -0.1849 | -0.177 | -0.1895 |
| Intercept | 6.9486*** | 5.3734*** | 4.7644*** | 4.9449*** | 6.3246*** | 4.209 | 1.3711 | 1.7354 |
| | -0.9716 | -1.1111 | -1.0099 | -1.0676 | -2.3243 | -2.6489 | -2.4273 | -2.583 |
| **Leverage** | | | | | | | | |
| Firm size | 2.7514*** | 2.4532*** | 2.5499*** | 2.4807*** | 2.7514*** | 2.4532*** | 2.5499*** | 2.4807*** |
| | -0.0769 | -0.0778 | -0.0713 | -0.0766 | -0.0769 | -0.0778 | -0.0713 | -0.0766 |
| ClanFirm_5 | 3.4255*** | | | | 3.4255*** | | | |
| | -0.3294 | | | | -0.3294 | | | |
| Pro_Firm_5 | | 4.0847*** | | | | 4.0847*** | | |
| | | -0.5571 | | | | -0.5571 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Pop_Mom_Firm_5 | | | -0.0236 | | | | -0.0236 | |
| | | | -0.3722 | | | | -0.3722 | |
| Self_Int_Firm_5 | | | | -0.6801 | | | | -0.6801 |
| | | | | -0.567 | | | | -0.567 |
| Intercept | -25.5924*** | -21.5166*** | -22.8383*** | -21.8917*** | -25.5924*** | -21.5166*** | -22.8383*** | -21.8917*** |
| | -1.0385 | -1.0475 | -0.9606 | -1.0308 | -1.0385 | -1.0475 | -0.9606 | -1.0308 |
| **Business risk** | | | | | | | | |
| Firm size | -1.4541*** | -1.5917*** | -1.4011*** | -1.4624*** | -1.4541*** | -1.5917*** | -1.4011*** | -1.4624*** |
| | -0.0624 | -0.0645 | -0.0609 | -0.0661 | -0.0624 | -0.0645 | -0.0609 | -0.0661 |
| Intercept | 35.9460*** | 38.0265*** | 35.3369*** | 36.1552*** | 35.9460*** | 38.0265*** | 35.3369*** | 36.1552*** |
| | -0.8843 | -0.9218 | -0.8785 | -0.952 | -0.8843 | -0.9218 | -0.8785 | -0.952 |
| **R&D** | | | | | | | | |
| Firm size | 0.0003** | 0.0004*** | 0.0005*** | 0.0003** | 0.0003** | 0.0004*** | 0.0005*** | 0.0003** |
| | -0.0001 | -0.0001 | -0.0001 | -0.0001 | -0.0001 | -0.0001 | -0.0001 | -0.0001 |
| ClanFirm_5 | -0.0090*** | | | | -0.0090*** | | | |
| | -0.0003 | | | | -0.0003 | | | |
| Pro_Firm_5 | | -0.0091*** | | | | -0.0091*** | | |
| | | -0.0005 | | | | -0.0005 | | |
| Pop_Mom_Firm_5 | | | -0.0045*** | | | | -0.0045*** | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | -0.0005 | | | | -0.0005 | |
| Self_Int_Firm_5 | | | | -0.0006 | | | | -0.0006 |
| | | | | -0.0014 | | | | -0.0014 |
| Intercept | 0.0060*** | 0.0044** | 0.0034* | 0.0058*** | 0.0060*** | 0.0044** | 0.0034* | 0.0058*** |
| | -0.0017 | -0.002 | -0.0018 | -0.0021 | -0.0017 | -0.002 | -0.0018 | -0.0021 |
| **Growth** | | | | | | | | |
| Research | 5.0217*** | 4.0553*** | 4.8989*** | 4.5015*** | 5.0217*** | 4.0553*** | 4.8989*** | 4.5015*** |
| | -0.5356 | -0.5339 | -0.517 | -0.5163 | -0.5356 | -0.5339 | -0.517 | -0.5163 |
| Intercept | -0.0182* | 0.0398*** | -0.0321*** | 0.0183 | -0.0182* | 0.0398*** | -0.0321*** | 0.0183 |
| | -0.0098 | -0.0118 | -0.0107 | -0.0115 | -0.0098 | -0.0118 | -0.0107 | -0.0115 |
| var(e.research) | 0.0005*** | 0.0006*** | 0.0006*** | 0.0007*** | 0.0005*** | 0.0006*** | 0.0006*** | 0.0007*** |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| var(e.Growth_Opp_Index) | 0.9130*** | 1.0766*** | 0.9314*** | 0.9701*** | 0.9130*** | 1.0766*** | 0.9314*** | 0.9701*** |
| | -0.031 | -0.0389 | -0.0339 | -0.0363 | -0.031 | -0.0389 | -0.0339 | -0.0363 |
| var(e.profit) | 74.2407*** | 77.3174*** | 73.5161*** | 74.9731*** | 478.7744*** | 506.4900*** | 460.1237*** | 482.5075*** |
| | -2.1793 | -2.3314 | -2.2187 | -2.3026 | -18.7035 | -20.4193 | -19.1545 | -20.6171 |
| var(e.mlev_ld) | 172.8116*** | 172.7069*** | 162.2192*** | 160.7120*** | 172.8116*** | 172.7069*** | 162.2192*** | 160.7120*** |
| | -3.3221 | -3.5228 | -3.3174 | -3.4236 | -3.3221 | -3.5228 | -3.3174 | -3.4236 |
| var(e.businessrisk) | 107.5944*** | 102.8980*** | 96.3665*** | 95.6416*** | 107.5944*** | 102.8980*** | 96.3665*** | 95.6416*** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | -3.4638 | -3.6292 | -3.4689 | -3.5992 | -3.4638 | -3.6292 | -3.4689 | -3.5992 |
| Obs. | 10554 | 8930 | 9389 | 8434 | 10554 | 8930 | 9389 | 8434 |
| Adj.R2 | | | | | | | | |

**Table 7:** Children quality and financial firm performance

This table reports results of SEM on financial performance of nonfamily firms versus clan family firms, professional family firms, mom and pop family firms and self-interest family firms. The sample is composed of 12,578 firm-year observations representing 893 unique firms in 8 East Asia countries including South Korea, Taiwan, HongKong, Indonesia, Malaysia, Philippine, Singapore and Thailand over the period 2000–2017. The dependent variable is financial firm performance including ROA and ROE. Definition of variables appears in Appendix. A dummy variable for industry sector. Robust standard error adjusted for clustering by the firm are reported below correlation coefficient. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | ROA | | | | ROE | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 1 | Model 2 | Model 3 | Model 4 |
| **Profit** | | | | | | | | |
| goodchildren_CEO | 0.9902*** | | | | 2.1268*** | | | |
| | -0.2216 | | | | -0.5527 | | | |
| goodchildren_nonCEO | | 0.9680*** | | | | 3.5338*** | | |
| | | -0.3738 | | | | -0.9907 | | |
| nongoodchildren_CEO | | | -0.7356*** | | | | -1.8068*** | |
| | | | -0.2712 | | | | -0.6791 | |
| nongoodchildren_nonCEO | | | | -3.1726*** | | | | -4.2931*** |
| | | | | -0.505 | | | | -1.4035 |
| Research | -42.6935*** | -43.8191*** | -39.4994*** | -40.4579*** | -139.2293*** | -142.7654*** | -130.1874*** | -134.3966*** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | -5.8735 | -5.6789 | -5.5093 | -5.4933 | -12.7511 | -12.2554 | -11.8745 | -11.9081 |
| Growth | 4.0081*** | 4.2260*** | 3.8232*** | 4.0179*** | 8.6677*** | 9.7361*** | 7.8528*** | 8.4490*** |
| | -0.1455 | -0.1439 | -0.1629 | -0.1579 | -0.3936 | -0.425 | -0.4403 | -0.4174 |
| Levarage | -0.0966*** | -0.0963*** | -0.1101*** | -0.1075*** | -0.0158 | -0.0292 | -0.0814*** | -0.0495* |
| | -0.0074 | -0.0088 | -0.0084 | -0.0089 | -0.0256 | -0.0289 | -0.0276 | -0.0301 |
| Business risk | -0.0756*** | -0.0690*** | -0.0669*** | -0.0766*** | -0.0377 | -0.0464 | -0.0217 | -0.0569* |
| | -0.0103 | -0.0124 | -0.0119 | -0.0131 | -0.0277 | -0.0326 | -0.0311 | -0.0337 |
| Firm size | 0.2318*** | 0.3121*** | 0.3996*** | 0.3998*** | 0.7637*** | 0.8726*** | 1.1651*** | 1.1685*** |
| | -0.0687 | -0.074 | -0.0704 | -0.0749 | -0.1709 | -0.1849 | -0.177 | -0.1895 |
| Intercept | 6.9486*** | 5.3734*** | 4.7644*** | 4.9449*** | 6.3246*** | 4.209 | 1.3711 | 1.7354 |
| | -0.9716 | -1.1111 | -1.0099 | -1.0676 | -2.3243 | -2.6489 | -2.4273 | -2.583 |
| **Leverage** | | | | | | | | |
| Firm size | 2.7514*** | 2.4532*** | 2.5499*** | 2.4807*** | 2.7514*** | 2.4532*** | 2.5499*** | 2.4807*** |
| | -0.0769 | -0.0778 | -0.0713 | -0.0766 | -0.0769 | -0.0778 | -0.0713 | -0.0766 |
| goodchildren_CEO | 3.4255*** | | | | 3.4255*** | | | |
| | -0.3294 | | | | -0.3294 | | | |
| goodchildren_nonCEO | | 4.0847*** | | | | 4.0847*** | | |
| | | -0.5571 | | | | -0.5571 | | |
| nongoodchildren_CEO | | | -0.0236 | | | | -0.0236 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | -0.3722 | | | | -0.3722 | |
| nongoodchildren_nonCEO | | | | -0.6801 | | | | -0.6801 |
| | | | | -0.567 | | | | -0.567 |
| Intercept | -25.5924*** | -21.5166*** | -22.8383*** | -21.8917*** | -25.5924*** | -21.5166*** | -22.8383*** | -21.8917*** |
| | -1.0385 | -1.0475 | -0.9606 | -1.0308 | -1.0385 | -1.0475 | -0.9606 | -1.0308 |
| **Business risk** | | | | | | | | |
| Firm size | -1.4541*** | -1.5917*** | -1.4011*** | -1.4624*** | -1.4541*** | -1.5917*** | -1.4011*** | -1.4624*** |
| | -0.0624 | -0.0645 | -0.0609 | -0.0661 | -0.0624 | -0.0645 | -0.0609 | -0.0661 |
| Intercept | 35.9460*** | 38.0265*** | 35.3369*** | 36.1552*** | 35.9460*** | 38.0265*** | 35.3369*** | 36.1552*** |
| | -0.8843 | -0.9218 | -0.8785 | -0.952 | -0.8843 | -0.9218 | -0.8785 | -0.952 |
| **R&D** | | | | | | | | |
| Firm size | 0.0003** | 0.0004*** | 0.0005*** | 0.0003** | 0.0003** | 0.0004*** | 0.0005*** | 0.0003** |
| | -0.0001 | -0.0001 | -0.0001 | -0.0001 | -0.0001 | -0.0001 | -0.0001 | -0.0001 |
| goodchildren_CEO | -0.0090*** | | | | -0.0090*** | | | |
| | -0.0003 | | | | -0.0003 | | | |
| goodchildren_nonCEO | | -0.0091*** | | | | -0.0091*** | | |
| | | -0.0005 | | | | -0.0005 | | |
| nongoodchildren_CEO | | | -0.0045*** | | | | -0.0045*** | |
| | | | -0.0005 | | | | -0.0005 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| nongoodchildren_nonCEO | | | | -0.0006 | | | | -0.0006 |
| | | | | -0.0014 | | | | -0.0014 |
| Intercept | 0.0060*** | 0.0044** | 0.0034* | 0.0058*** | 0.0060*** | 0.0044** | 0.0034* | 0.0058*** |
| | -0.0017 | -0.002 | -0.0018 | -0.0021 | -0.0017 | -0.002 | -0.0018 | -0.0021 |
| **Growth** | | | | | | | | |
| Research | 5.0217*** | 4.0553*** | 4.8989*** | 4.5015*** | 5.0217*** | 4.0553*** | 4.8989*** | 4.5015*** |
| | -0.5356 | -0.5339 | -0.517 | -0.5163 | -0.5356 | -0.5339 | -0.517 | -0.5163 |
| Intercept | -0.0182* | 0.0398*** | -0.0321*** | 0.0183 | -0.0182* | 0.0398*** | -0.0321*** | 0.0183 |
| | -0.0098 | -0.0118 | -0.0107 | -0.0115 | -0.0098 | -0.0118 | -0.0107 | -0.0115 |
| var(e.research) | 0.0005*** | 0.0006*** | 0.0006*** | 0.0007*** | 0.0005*** | 0.0006*** | 0.0006*** | 0.0007*** |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| var(e.Growth_Opp_Index) | 0.9130*** | 1.0766*** | 0.9314*** | 0.9701*** | 0.9130*** | 1.0766*** | 0.9314*** | 0.9701*** |
| | -0.031 | -0.0389 | -0.0339 | -0.0363 | -0.031 | -0.0389 | -0.0339 | -0.0363 |
| var(e.profit) | 74.2407*** | 77.3174*** | 73.5161*** | 74.9731*** | 478.7744*** | 506.4900*** | 460.1237*** | 482.5075*** |
| | -2.1793 | -2.3314 | -2.2187 | -2.3026 | -18.7035 | -20.4193 | -19.1545 | -20.6171 |
| var(e.mlev_ld) | 172.8116*** | 172.7069*** | 162.2192*** | 160.7120*** | 172.8116*** | 172.7069*** | 162.2192*** | 160.7120*** |
| | -3.3221 | -3.5228 | -3.3174 | -3.4236 | -3.3221 | -3.5228 | -3.3174 | -3.4236 |
| var(e.businessrisk) | 107.5944*** | 102.8980*** | 96.3665*** | 95.6416*** | 107.5944*** | 102.8980*** | 96.3665*** | 95.6416*** |
| | -3.4638 | -3.6292 | -3.4689 | -3.5992 | -3.4638 | -3.6292 | -3.4689 | -3.5992 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Obs. | 10554 | 8930 | 9389 | 8434 | 10554 | 8930 | 9389 | 8434 |
| Adj.R2 | | | | | | | | |