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Family involvement, firm size, and performance of private-owned enterprises

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Abstract

The debate over the effect of "family involvement" on the performance of private enterprises has existed for a long time. However, most previous research ignored the organizational characteristics. In this paper, we incorporate one of the basic organizational characteristics—firm size—into our analysis by using data from a nationwide sample survey of private enterprises. From the two dimensions of family control and family intension, this work reveals that the agency problem and the resource advantage caused by family involvement were different in private-owned enterprises with different scales. The static positive effect of family involvement decreased as the scale of an enterprise increased. After reaching a certain scale, family involvement would have a negative impact on firm performance.

Keywords: Private enterprises; Family involvement; Firm size; Firm performance

Background

Over the past 30 years, one of the most important aspects of progress in China's market-oriented reform was the growth in the private sector of the economy. By the end of 2010, the total number of private enterprises and individual industrial and commercial households had reached 42,980,500; the gross employment reached 164,152,000, which absorbed more than 90 % of new urban labor. The total tax contribution of private enterprises was 1.114904 trillion yuan, which accounted for 14.4 % of the national tax revenue and over 60 % of the gross domestic product (GDP) (Huang 2011, 1-35). The private economy has undoubtedly become an important driving force of Chinese economic development. Due to its important role, developing a systematic knowledge of Chinese privately owned enterprises is crucial for the sustainable development of both private enterprises and the development of the Chinese economy.

In the study of nationally owned enterprises, the state is an important and undeniable factor. Whether the state played the role of a "grabbing hand" or a "supporting hand" for enterprises has been the focus of debate (Chen and Xu 2001; Liu and Li 2005; Yang 2013a, b). Correspondingly, in the research on private enterprises, the impact of the family has occupied an important position. Scholars have generally emphasized the combined effect of families and enterprises on governance structures, business objectives, choices of strategies, and firm performance (Chrisman et al. 2009; Kraus et al. 2011). Although the combination of family and business in other economies is also a common phenomenon, existing studies show that family involvement has a special and important influence on the growth and development of Chinese private enterprises. Some scholars even assert that "an in-depth understanding of the development of Chinese economy, especially the development of entrepreneurial organizations, cannot be obtained in the absence of the understanding of familial system" (Li 2008, 431), because family culture and the family system embody the salient features of Chinese traditional culture, reflect a social psychological condition accumulated from thousands of years of tradition, and have a significant impact on business organizations, business practices, and business cycles (Chu 2000).

In these studies, researchers are most concerned with the relationship between family involvement and firm performance. All studies acknowledge that family involvement has effects on the performance of private enterprises, but the directions of effects are diametrically opposite. One important reason for this debate is ignorance about the regulatory effect of organizational characteristics on that relationship. The scale of an organization is one of the decisive factors of the organizational structure. As Scott points out, "The technology determines the type of work an organization should be engaged in, whereas the scale determines to the extent to which an organization can be engaged" (Scott 2002, 244). If the family factor can be regarded as a factor invested in production, then the scale of an enterprise will affect the extent to which the family factor is invested. In addition, most current studies understand family involvement from the dimensions of familial ownership and management, while ignoring the cognitive dimension of family involvement. However, the behaviors of family-owned enterprises are not only determined by the actual involvement of families in ownership and managerial power but also affected by the managerial philosophy of families. Given the shortage of research so far, this work adopts the data from a national survey of private enterprises and introduces the cognitive dimension of family intentions. However, this work also includes the variable of enterprise scale and discusses the dual-conditioning effect of enterprise scale on the relationship between family involvement and business performance of enterprises.

The paper is organized as follows. We first analyze the related literature on family involvement and firm performance and advance the main hypotheses of this article. We then describe the survey data and models. In the next section, we analyze the results and test the above hypotheses. We conclude with a discussion of the significance of our research findings.

Literature review

When an enterprise is embedded in family relationships, researchers focus on the questions of whether or not the traditional family and modern rationalism can coordinate in the same organization, whether the organization of such enterprises is reasonable, and whether the operational performance of such enterprises is better than that of non-family businesses. However, researchers cannot give a definite answer based on either existing theories or empirical research. How does family involvement affect the performance of enterprises? Agency theory and resource-based theory are the two main theoretical perspectives that can answer this question (Chrisman et al. 2003, 2010).

Mainstream economics deems that the agency costs of family businesses are zero or minimum, due to the consistent interaction between owners and managers of family-owned enterprises (Jensen and Meckling 1976). Scholars with the opposite view emphasize that the mainstream agency theory oversimplifies the agency issue of family-owned enterprises. In fact, the agency costs in these enterprises are not less than that of nonfamily-owned businesses. First, when the ownership of a family business is highly concentrated, the controlling power of owners can undermine the effectiveness of external governing mechanisms including the agent market and the capital market. For instance, it is difficult to motivate professional managers through the means of promotion, which thereby increases the risk of employing inefficient agents; second, because of the existence of altruism, some family members are prone to shirk and be free riders. Interactions between owners and familial managers, in particular, lead to the inefficient allocation of internal resources (Schulze et al. 2001, 2003; Gomez-Mejia et al. 2001). Finally, holding families can directly take advantage of their ownership and controlling power in the managerial panel to indirectly obtain personal gain and family interests at the price of the interest of minor shareholders. This act of depredation, while maximizing the utility of familial shareholders, reduces the enterprise value (Morck and Yeung 2003).

Resource-based theory emphasizes that an enterprise is an aggregation of a series of resources in which the resources include “all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc controlled by a firm” (Barney 1991, 101). Internal resource is the basis for the formulation and implementation of strategies. The enterprises that hold valuable, rare, inimitable, and irreplaceable resources can more easily access sustainable and competitive advantages and excessive profits (Habbershon and Williams 1999; Habbershon et al. 2003). Some scholars believe that nepotism and family networks can provide competitive advantages for enterprises in various resources, such as material resources, human resources, and organizational resources, whereas other scholars find that a closed family network may lead to the exclusion of special resources outside a family, a practice that loses the opportunity for entrepreneurial growth and development (Barney et al. 2002; Sirmon and Hitt 2003; Dyer 2006).

Based on these theories, a large body of foreign empirical research has obtained rich results but has not been able to reach consistent conclusions. According to two literature reviews combining the analyses in 68 articles, 44 % of the studies deem that family-owned enterprises have better performance than nonfamily-owned enterprises. Eighteen percent of the studies suggest there is no difference in performance between them; only 12 % of the studies suggest that the performance of family-owned enterprises is worse than that of nonfamily businesses. An additional 18 articles believe that other factors determine the business performance of family-owned enterprises (Jaskiewicz et al. 2005; Zhao et al. 2010). In Chinese academia, directly comparative studies on the business performance of family-owned and nonfamily-owned enterprises are still not common. Based on data of listed companies, Deng and Gu (2007) find that listed familial companies outperformed listed nonfamilial companies in China. Chen and Lu (2009) reach a similar conclusion based on the mid- to small-sized enterprises in Zhejiang. However, other studies based on listed companies discover that family management generally has a negative effect on the business value of enterprises (Li et al. 2009; Wang et al. 2010).

In our view, one important reason for such controversy in the results of previous studies is that the definitions of family business differ among researchers (Chu 2004). These different standards have a significant impact on the values of family businesses and nonfamily businesses (Villalonga and Amit 2006). Some new research has abandoned the dichotomization of family and nonfamily businesses and regards family involvement in private businesses as a continuous variable since it is difficult to reach a consensus on the definition of family businesses and that the vast majority of private enterprises are all subject to different degrees of family influence. In this article, we use the concept of "family involvement", which has the advantage of enabling a more-accurate examination on the effect of familial factors on business performance and its dynamics. This goal cannot be achieved under the dichotomized view of family and nonfamily businesses.

Even under the framework of family involvement, debates and disagreement still exist. Some studies show that Chinese private enterprises exhibit the pattern of "family dominance in the business share" (Yang and Zhu 2006, 20). The proportion of family share held is positively related to business performance (or enterprise value) (Li 2005; Ding et al. 2008). However, some scholars believe that an overconcentrated family share eliminates access by external investors, disables any effective governing mechanism, and thus strengthens families' control over shareholding and hinders the growth of family businesses (He et al. 2007). Other studies put forward another view, based on these two opposing views, that the relationship between the proportion of family ownership and business performance conforms to a complex curve function. However, the specific kind of curve is also under debate. Some studies find it to be an inverted U-shaped curve (Chen and Li 2008; He and Lian 2009), while others find it to be a U-shaped curve (Chen et al. 2007).

The managerial right of family businesses originates from their ownership. Some studies find that family involvement in managerial positions benefits business performance, but overinvolvement of family members can incur excessive costs in the internal agency, unhelpful for improving the business performance (He and Lian 2009; Wu and Wang 2011). In contrast, Chen and other researchers believe that the introduction of professional managers is more conducive to the business performance of companies under the control of family ownership (Chen et al. 2013). Current studies on family involvement in the performance of enterprises have two obvious deficiencies. First, most of these studies consist of static analyses of the same situation and ignore the conditional effect from the characteristics of an enterprise and the environment within which an enterprise is situated (He et al. 2007; Su and Zhu 2003). Firm size is one particularly important but frequently neglected feature. The difference in sizes of businesses is the basic factor for explaining the differences in other aspects of organizations as well as their social differences (Baron 1984). Enterprises with different scales may be completely different in organizational structures, business environment, and managerial practices. For example, contingency theory suggests that with the expansion of business scale, the degree of bureaucracy and differentiation of internal structures also increase: the former presents specialization, standardization (or excessive documentation), and increasing decentralization in power, whereas the latter presents differentiation in departments, units, and responsibilities (Donaldson 2001, 62-76). In economics, the scale of an enterprise plays an important role in deciding its boundary (Samuelson and Nordhaus 2012, 171). When the increase in all inputs leads to a greater proportional increase in output, the economies of scale occurs. A major reason for the occurrence of the economies of scale is that the scale of an enterprise influences the effective division of labor within an enterprise and enables the occurrence of features of professional production. However, with the expansion of business scale, the level of an enterprise, the complexity of relationships, and inside coordination become more difficult, resulting in increased transaction costs within the enterprise. Once these kinds of transaction costs exceed the benefits brought by the division of labor and specialization, the diseconomies of scale emerge (Williamson 2011, 144-48). The returns to scale in these studies generally refer to the combined effect of an increase in all factors of production. This article treats family relationships as a factor of production and examines whether the influence of this factor of production on the return to scale varies by the overall size of businesses.

Second, in most empirical studies, the level of family involvement is often measured as the proportion of family ownership and managerial rights in an enterprise. However, some scholars believe that the essence of family business, as a combination of the family and the enterprise, cannot be fully explained by structural involvement. The cognitive aspect of family members is also an important dimension for studying the involvement of a family in a business (Yang and Li 2009). This work distinguishes two dimensions of family involvement: one is the involvement of a family in the ownership and management of a company, namely family control, the other is the cognitive involvement of members of a family in an enterprise, namely family intentions. No empirical research on Chinese family business to date has examined the relationship between family intentions and business performance. This article analyzes it in detail.

Research hypotheses

Cognitive dimension of family involvement: family intentions

Although family involvement in ownership and management is important, it fully reflects the nature of family businesses only when it can substantially affect the company's objectives, strategies, and organizational structures (Chua et al. 1999). From this perspective, family intentions are important in understanding the true impact of family involvement in an enterprise. So-called family intentions refer to the cognition and philosophy of family members in maintaining family development in a business, family control, family inheritance, and so on (Chua et al. 1999; Litz 1995). Some domestic scholars further divide family intentions into five dimensions: value, ownership, control, management, and succession (Li and Ren 2004). The existence of family intentions determines the differences in the actions of family businesses and nonfamily businesses.

Specifically, family intentions can affect the action of enterprises in two aspects. First, family intentions can affect the organizational structures of the board of an enterprise, the CEO, and other formal organizational structures and thus affects the formal organizational action derived from the bureaucracy, such as principal-agent actions between the owner and the professional manager of an enterprise (Li and Ren 2004). Second, family intentions can affect the informal organizational actions of paternalistic leadership as well as panfamily doctrine by shaping interpersonal relationships, the culture of the enterprise, other informal organizational structures (Fan and Zheng 2000; Yang 1998), and other informal organizational behaviors. Research by Zheng (1995) finds that the trust patterns of entrepreneurs emphasizing kinship and capability differ. Therefore, when measuring family involvement, a researcher should consider both the structural and cognitive dimensions.

These two dimensions of family involvement are likely to be intertwined, which means that family intentions directly lead to a familial-controlling structure. It is also the reason why family intentions are often overlooked by researchers. Therefore, based on Li and Ren's

(2004) research, we believe that the level of family intentions affects family involvement in the level of ownership and management. We predict that:

Hypothesis 1: The stronger the family intentions in an enterprise, the more the family is involved in the level of ownership and management in an enterprise.

Family involvement, the scale of enterprise, and business performance

As previously stated, this article regards the familial factor as a factor of production. Family involvement is then an input for this factor of production. Based on agent theory and resource-based theory, we believe that in private businesses the marginal agent costs and marginal revenues of family involvement differ by different business scales. Therefore, the relationship between family involvement and business performance may exhibit different patterns according to different sizes of businesses.

Marginal agency costs of family involvement

A general agent-principal problem exists between business owners and managers, due to the presence of asymmetric information and inconsistent objectives. An agent may utilize the perspective of maximizing his own interests and takes action that damages the interests of his client (Jensen and Meckling 1976). The mainstream agent theory deems that agency costs are minimal in family businesses, because of the high degree of overlap between owners and managers in family businesses. However, some scholars have pointed out that family involvement also incurs agency costs, depending on whether a family operator plays the role of an agent or a steward. Agent theory and stewardship theory are based on different assumptions in human nature. The former believes that people are rational economic individuals with a tendency to pursue maximal benefits. Thus, a family operator can sacrifice the interests of the business owner in order to maximize his/her own interests; the latter is based on the assumption of a social person that the personal goal of a family operator usually conforms to the general goal of an enterprise so that he/she will not sacrifice the interests of an enterprise to pursue his/her personal interests (Davis et al. 1997). In synthesis, we can split the cost of an enterprise into two parts: one part is the family agent cost incurred by family involvement, whereas the other is the ordinary agent cost not caused by family involvement. These two types of agency costs have a conservative relationship.

What is the effect of scale expansion on the agency costs within an enterprise? First, the scale expansion of companies often causes complicated structural changes in enterprises, thereby increasing the amount of internal information processing. A substantial increase in information asymmetry would push up the costs of supervision on agent behaviors and also expand the space for agent behaviors. Moreover, the development of enterprises leads to the involvement of peripheral family members. Considering that China's social relations conform to a diversity-orderly structure based on "self" (Fei 1998), we also believe that the introduction of family members may induce intense conflicts among family members. As the scale of an enterprise increases, one more level of family involvement will introduce more peripheral family members. The internal inconsistency in goals and benefits within the management board would then become even more prominent. Under the circumstance of structural complication of an enterprise, the agency costs for a family increases, which means that the expansion of business scale increases the marginal cost of family involvement (family marginal cost, FMC). Similarly, the marginal agency costs of nonfamily involvement (general marginal cost, GMC) also increases with the expansion of business scale. This can be represented in an equation as $\mathrm{FMC}(S) = \alpha_1 + \beta_1 S,\ \mathrm{GMC}(S) = \alpha_2 + \beta_2 S,\ s.t.\ \beta_1 > 0,\ \beta_2 > 0,$ in which S represents business scale.

Second, due to the presence of asymmetric altruism (Schulze et al. 2003), family owners will tolerate certain agent behaviors of business operators. Especially under the influence of the traditional Chinese culture of family, the problem of asymmetric altruism is even more serious. This fact encourages a family-member operator to become an agent who pursues personal gain at the expense of business interests. In contrast, business owners may be highly vigilant about professional managers' agent behaviors and try to control agency costs through various mechanisms of supervision and incentive. Therefore, we believe that the elasticity of family agency costs is greater than that of nonfamily agency costs. With the change of business scale, the magnitude in the change of FMC magnitude is thus greater than that of GMC, which is $\beta_1 > \beta_2 > 0$.

Marginal revenue of family involvement

From the perspective of resource advantage, some resources that family networks bring to the enterprise are beneficial to enterprises at all scales. For example, under the circumstance of domestic policy supports, the political contacts of family members can provide noninstitutional protection for their enterprise (Yu and Pan 2008; Wu et al. 2009). Family members can better recognize and seize opportunities through information sharing (Barney et al. 2002). However, the effectiveness of other resources brought by family networks may vary by the scale of the enterprise.

First, given the fact that the external financing conditions for private enterprises are harsh, family networks are an important source of financial liquidity for Chinese private enterprises (Bian 2006). However, once the business scale expands, the funding scale of an enterprise can often no longer be satisfied by a family. Also, the traditional family culture ensures a high loyalty of family members to their family business; they thus commit more to their business. In small-scale enterprises, nepotism can be more easily extended to nonfamily employees; family members and nonfamily employees are treated the same. This panfamily style of management is conducive to building a trusting relationship between enterprises and nonfamily employees, thereby improving the initiative of employees. However, with the expansion of business scale, an enterprise gradually forms a stable bureaucracy, and corporate governance transitions from relational to contractual governance (Li and Chen 2005). The distance between family members and that between the family and ordinary employees increase, weakening the initiatives of employees. Finally, the expansion of company scale is accompanied by the complication of enterprise management, which requires the involvement of more professional and capable managers in enterprise management. However, the closeness of family networks may prevent a professional manager from entering a family enterprise and consequently has a negative impact on the performance and expansion of a private enterprise (Chu 2002).

Overall, in small-scale enterprises, an increase in family involvement can significantly increase an enterprise's business advantage in resources such as capital, manpower, information, and other resources. However, with the expansion of business scale, an increase in family involvement does not significantly improve advantage in resources and may even cause a decline in resource advantage due to the exclusion of external resources.

Therefore, we believe that with an additional unit of family involvement, the larger the business scale, the smaller the increase in resource advantage. In other words, the marginal revenue of family involvement (family marginal revenue, FMR) decreases with the expansion of business scale. In contrast, the marginal revenue of nonfamily involvement (general marginal revenue, GMR) is likely to increase with the expansion of the business scale because only in larger companies can the division of labor and the specialization of production be more efficient. This can be represented in an equation as $\mathrm{FMR}(S) = \alpha_3 + \beta_3 S$, $\mathrm{GMR}(S) = \alpha_4 + \beta_4 S$, *s.t.* $\beta_3 < 0$, $\beta_4 > 0$.

A synthetic analysis of family involvement and corporate performance

Family involvement is denoted as *F*, which is a continuous variable ranging between 0 and 1; nonfamily involvement is 1-*F*; the size of a company is *S*. Total agency costs for family involvement is FTC, whereas the total agency costs of nonfamily involvement is GTC. Total revenue from family involvement is FTR, whereas total revenue from nonfamily involvement is GTR. The net total profit of an enterprise is TP. Since $\mathrm{FMC} = \frac{\mathrm{dFTC}}{\mathrm{d}F} = \alpha_1 + \beta_1 S$, the integral of FMC is $\mathrm{FTC} = (\alpha_1 + \beta_1 S) * F + C_1$ where C_1 is a constant. $\mathrm{GMC} = \frac{\mathrm{dGTC}}{\mathrm{d}(1-F)} = \alpha_2 + \beta_2 S$, and the integral of this equation is $\mathrm{GTC} = (\alpha_2 + \beta_2 S) * (1 - F) + C_2$ where C_2 is a constant. Similarly, we can obtain that $\mathrm{FTR} = (\alpha_3 + \beta_3 S) * F + C_3$, $\mathrm{GTR} = (\alpha_4 + \beta_4 S) * (1 - F) + C_4$. Based on these equations, we can obtain that:

$$\begin{aligned} \mathrm{TP} = (\mathrm{FTR} + \mathrm{GTR}) - (\mathrm{FTR} + \mathrm{GTC}) = {} & (\alpha_4 - \alpha_2) + (\alpha_3 - \alpha_4 - \alpha_1 + \alpha_2) * F \\ & + \left(\beta_3 - \beta_4 - \beta_1 + \beta_2\right) * SF + \left(\beta_\partial - \beta_2\right) * S \\ & + (C_3 + C_4 - C_1 - C_2) = \alpha F + \beta S * F + \gamma S + C \end{aligned} \tag{1}$$

In which $\alpha = \alpha_3 - \alpha_4 - \alpha_1 + \alpha_2$, $\beta = \beta_3 - \beta_4 - \beta_1 + \beta_2$, $\gamma = \beta_4 - \beta_2$, $C = (\alpha_4 - \alpha_2) + (C_3 + C_4 - C_1 - C_2)$

Based on the results of previous research, the general judgment obtained is that in general the level of family involvement has a positive impact on business performance among small- to mid-scale privately owned enterprises, namely $\alpha > 0$. Since $\beta_1 > \beta_2 > 0$, $\beta_2 - \beta_1 < 0$. Also, since $\beta_3 < 0$, $\beta_4 > 0$, $\beta < 0$, equation (1) can be described as stating that the level of family involvement has a positive impact on business performance, but its effect is weakened with the expansion of the business scale (hypothesis 2). Considering the structural dimension of family involvement, we make the following hypotheses:

Hypothesis 2.1: The level of involvement of family ownership has a positive impact on business performance, but its positive effect declines with the expansion of business scale.

Hypothesis 2.2: The level of family involvement in management has a positive impact on business performance, but its positive effect declines with the expansion of business scale.

In the discussion of hypothesis 1, we pointed out that two dimensions of structure and cognition should be considered when measuring family involvement. Hypothesis 1 emphasizes the link between family intentions and the structure of family management. However, as our previous discussion pointed out, family intentions as a cognitive dimension can to a certain extent independently influence the management mode of a family enterprise, even if an enterprise does not employ a formal family ownership and management. Considering the cognitive dimension of family involvement, we postulate that:

Hypothesis 2.3: The family intentions of business owners have a positive impact on the business performance of family enterprises, but its effect decreases with the expansion of business scale.

Family involvement and the scale of the enterprise

Finally, firm size impacts not only the relationship between business performance and family involvement it also has an effect on family involvement. This is due to the fact that the family cannot adapt to the requirement of resource and rationalizing management for business development as the scale of business increases. Some business owners may take the initiative of reducing the level of family involvement, while other companies that do not change may gradually be eliminated due to their decreased business performance in market competition. Thus, the level of family involvement generally declines as the scale of company increases. We then expect:

Hypothesis 3.1: With the expansion of business scale, the level of family involvement in business ownership declines.

Hypothesis 3.2: With the expansion of business scale, the level of family involvement in the business management of an enterprise declines.

Hypothesis 3.3: With the expansion of business scale, the family intentions of business owners are weaker.

Research method

Data

The data used in this study is from the "Research Group of Private Business,"[1] which is part of the Ninth National Private Enterprise Sample Survey conducted in the first half of 2010. First, this survey selected a sample of private enterprises according to the scales and industrial structures in the China Statistical Yearbook and then investigated them through the local bureaus of industries and businesses. The survey targets are the corporate representatives of private enterprises, also known as private entrepreneurs. The survey covered the territory of 31 provinces, autonomous regions, and municipalities in China with industries of various types and scales. The sample in this study thus presents a good representation of domestic private enterprises. This survey collected 4610 valid questionnaires, with an effective sample size of 2098 by excluding the part of the sample with incomplete information on variables related to this study. Within the effective sample, the proportions of enterprises from eastern, central, and western China are 56, 25, and 19 % respectively.

Variables

The dependent variable

Since most of the surveyed enterprises were not listed companies, our measure of business performance rested mainly on an enterprise's ability to generate profit. According to common practice, this paper adopted the return rate on equity (ROE, also known as the return rate on ownership) as the indicator of an enterprise's ability to generate profit. It well reflects the return on owners' equity. ROE = (net revenue/shareholders' equity) * 100 %. We set the profit of enterprises that have negative net profits to zero. Since the ROE curve is right skewed, we applied the logarithm before modeling.

Independent variables

As noted earlier, family involvement includes the cognitive dimension and structure dimensions. We used family control and family intentions to respectively represent them. It is notable that this paper examines the impact of firm scale on family involvement where the level of family involvement is treated as a dependent variable. Family involvement is specifically defined as follows:

Family control: we used family ownership and family management rights to measure the structural dimension of family involvement in enterprises. Family ownership refers to the proportion of equity possessed by family members in all shareholders' equity. The term "management rights of the family" refers to the proportion of the number of family managers in the total number of managers. "Managers" here refers to the heads of all departments of an enterprise. "Family managers" refers to managers who have kinship or marital relationships with the holder of an enterprise. "Ordinary managers" refers to the remaining managers.

Family intentions (FI): we used a five-point Likert scale to measure the family intentions of business owners in the questionnaire. It contained seven statements: (A1) a family owns greater than 50 % of the share of an enterprise, (A2) the strategic decision-making power must be controlled by family members, (A3) the key positions of enterprises should be occupied by family members, (A4) family participation in management is more conducive to enterprise development, (A5) providing employment opportunities for family members is an obligation of business owners, (A6) family members are only hired only if they are really qualified, and (A7) family members receive different payment arrangements than other employees. In the scale, one indicates "strongly disagree" and five indicates "strongly agree," and question A6 is a reversed question that was reversed in the following analysis.

Due to the large number of questions that examined similar specific contents, this paper proposed using factor analysis to extract common factors. We used STATA software to perform factor analysis on these seven questions (see Tables 1 and 2) before finding that they could be synthesized to two common factors with a cumulative variance contribution rate of 68 %. However, question A6 was almost entirely parallel with the second factor, whereas the other six factors mainly rested on the first factor. Considering that A6 is a reversed question, we speculated that many interviewed entrepreneurs might mistakenly answer this question and therefore adopted only the first common factor as the measure for family business intentions. The scores of family business owners were standardized. Higher scores mean stronger family intentions of business owners.

Firm size: we used the number of employees in 2009 as our index of firm scale. In order to facilitate the interpretation of coefficients, the number of employees was divided by 100 before being put into the statistical models.

Table 1 Eigenvalues of rotated factors and their contribution to variance

Factor	Eigenvalue	Cumulative variance (%)
Factor 1	3.48	49.76
Factor 2	1.27	67.84

Table 2 Factor matrix after rotation

Variable	Factor 1	Factor 2
A1	0.609	−0.489
A2	0.816	−0.218
A3	0.852	−0.111
A4	0.850	−0.021
A5	0.636	−0.255
A6	−0.004	0.918
A7	0.776	0.242

Control variables

Business performance is also affected by many other factors. At the enterprise level, this paper controlled the industries of enterprises, locations of headquarters, and time of the business's opening. Because the questionnaire asked entrepreneurs to list three main sectors, we thus controlled the industrial effect through two variables: whether an enterprise was engaged in manufacturing and whether an enterprise was engaged in a variety of industries. Both were represented by dummy variables. The areas of headquarters of enterprises were divided into eastern, central, and western China, also represented by dummy variables with western China as the reference group. The history of the business was calculated by deducting the years that the business was in operation at the survey year (2010), with businesses open less than 1 year counted as 1 year. At the same time, considering that the personal capacity of business owners also has a significant impact on business performance, this paper adopted the educational level of business owners and their political relationships as measures of business owners' ability. We assumed that the higher the level of education of business owners, the stronger the business owners; stronger business owners are more likely to establish political ties. The education level of business owners was divided into three levels: junior high school or below, high school (secondary school), and college or above, with the first as the reference group; political ties of entrepreneurs were measured by whether they were deputies in people's congresses or members of political consultant conferences at all levels, with one set as a political affiliation and zero otherwise.

Table 3 presents the statistical description of the main variables. We found that in the survey of private enterprises the average proportion of family ownership reached 81 %, while in comparison family management was only 26 %, showing that in China's private enterprises the degree of family ownership was much higher than that of management rights.

Table 3 Descriptive statistics of main variables and correlation matrix

	Variables	Mean	SD	1	2	3	4	5	6
1	ROE	2.14	1.33	1					
2	Family ownership	0.81	0.28	0.031	1				
3	Family management	0.26	0.33	0.042	0.295*	1			
4	Family intentions	0	1	0.002	0.190*	0.362*	1		
5	Firm size	174.71	384.73	0.151*	−0.121*	−0.139*	−0.129*	1	
6	Firm age	8.73	4.65	0.100*	0.052*	−0.005	−0.047*	0.158*	1

*$p < 0.05$

Results and analysis

Firm size, family intentions, and family control

Model 1(A), model 2(A), and model 3 analyzed the impact of firm size on the level of family involvement (see Table 4 for details). The coefficients of firm size were significantly negative in these three models, indicating that with the expansion of business scale the level of family involvement in the ownership and management of the enterprise was reduced. The family intentions of business owners became weaker. This result is consistent with hypothesis 3. The coefficients of education levels of entrepreneurs were all negative, indicating that a business owner's higher level of education led to lower family involvement; they were also more likely to conform to modern rationalism. For the attributes of enterprises, the area where a family business was located had no significant effect. In general, family involvement was stronger in enterprises with diversification strategies, while this difference was not obvious between manufacturing and nonmanufacturing sectors. It is worth noting that the effect by the time of the firm's existence was different from that by the enterprise scale. It is generally believed that the longer an enterprise has survived, the larger the business scale, and the lower the level of family involvement. However, the model showed that the time of existence had a significant positive impact on family ownership. This may be caused by two factors: on one hand, although there was a significant positive correlation between time of the business's existence and firm size, the strength was only weak (the correlation coefficient was 0.158, Table 3). Thus, the longer time of existence did not mean that the scale of business was expanded. On the other hand, the effecting mechanisms by time of an enterprise's existence and by firm scale may not be the same. The longer the time of existence, the more likely the family members of an enterprise would have special feelings. Family members were thus less likely to give up their business ownership.

Model 1(B) and model 2(B) depict the impact of family intentions of business owners on the ownership and management rights aspects of family involvement. Net of other control variables, the family intentions of business owners had a positive effect on both of them. In other words, the more obvious the family intentions of business owners, the more likely it is that the family is involved in business ownership and management. Specifically, one standard-score increase in family intentions of business owners led to a 4.8 % rise in family ownership, whereas the percentage of family members in management positions rose around 11.1 %. This result supports hypothesis 1.

Family involvement, firm size, and business performance

Model 4 analyzed the effects of family involvement and firm scale on the ROE of enterprises (see Table 5 for details). Model 4(A) is the baseline model from which we can see that the coefficient of business scale on business performance was positive when only these aspects were considered. This indicates that the scale of economics existed in the private businesses of China. The larger the firm size, the better the business performance. The history of an enterprise also had a significant positive impact on business performance. The longer the enterprise existed, the better the business performance. The explanation is that the longer the survival time of an enterprise, the more mature the development of an enterprise and the stronger its ability to cope with its external environment. Business performance of enterprises in the eastern area was much better than that in the western region; the ROE of the former was 1.38 times higher than that of the latter.

Table 4 Firm scale, family intentions, and family control ($N = 2098$)

Variables	Family ownership		Family management		Family intentions
	Model 1(A)	Model 1(B)	Model 2(A)	Model 2(B)	Model 3
Entrepreneurs' education (primary education)					
Secondary education	−0.026	−0.024	−0.096***	−0.091***	−0.045
	(0.022)	(0.022)	(0.025)	(0.024)	(0.079)
Higher education	−0.093***	−0.077***	−0.240***	−0.205***	−0.331***
	(0.021)	(0.021)	(0.024)	(0.022)	(0.074)
Politics relationship (1 = yes)	0.003	0.006	−0.026****	−0.019	−0.063
	(0.013)	(0.013)	(0.015)	(0.014)	(0.047)
Diversification strategy (1 = yes)	0.032*	0.032*	0.030****	0.030****	−0.005
	(0.015)	(0.015)	(0.017)	(0.016)	(0.052)
Manufacturing (1 = yes)	−0.013	−0.01	0.005	0.012	−0.072
	(0.013)	(0.013)	(0.014)	(0.014)	(0.045)
Firm location (western)					
Eastern	−0.005	−0.003	−0.012	−0.008	−0.037
	(0.016)	(0.016)	(0.018)	(0.017)	(0.058)
Central	−0.007	−0.001	−0.004	0.009	−0.131*
	(0.019)	(0.018)	(0.021)	(0.020)	(0.065)
Firm age	0.004**	0.004**	0.001	0.002	−0.005
	(0.001)	(0.001)	(0.002)	(0.001)	(0.005)
Firm size	−0.009***	−0.008***	−0.008***	−0.006***	−0.024***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.006)
Family intentions		0.047***		0.105***	
		(0.006)		(0.007)	
Constant	0.854***	0.834***	0.446***	0.403***	0.413***
	(0.026)	(0.026)	(0.029)	(0.028)	(0.092)
R2	0.038	0.064	0.091	0.190	0.042

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; ****$p < 0.1$

No significant difference in business performance was observed between the central area and the western area. From the perspective of industries, the business performances of manufacturing and nonmanufacturing firms were not significantly different; the effect of diversification strategy was not significant on firm performance. Education level and political connections both had positive effects on the business performance of enterprises, while the former had weaker significance.

Models 4(B), 4(C), and 4(D) added the variables of family ownership, family management rights, family intentions, and their interactions with business scale. In model 4(B), the coefficient of family ownership was significantly positive. The coefficient of the interaction between business scale and family ownership was negative, indicating that although a larger proportion of family ownership led to better business performance, the positive impact of family ownership on firm performance decreased with the expansion of the business scale. When the scale of employees of an enterprise exceeded a certain size and the family-owned share was larger, the business performance of an enterprise was worse. In model 4(C), the impacts of family management rights and family ownership were similar. The participation of family members in the management of an enterprise affected performance favorably. However, with the expansion of the

Table 5 OLS estimates of ROE (log scale) regression models ($N = 2098$)

Variables	Model 4(A)	Model 4(B)	Model 4(C)	Model 4(D)	Model 4(E)
Entrepreneurs' education (primary education)					
Secondary education	0.185****	0.190****	0.213*	0.188****	0.214*
	(0.105)	(0.105)	(0.105)	(0.105)	(0.105)
Higher education	0.129	0.152	0.203*	0.146	0.211*
	(0.098)	(0.098)	(0.100)	(0.099)	(0.100)
Politics relationship (1 = yes)	0.145*	0.145*	0.162**	0.146*	0.158*
	(0.062)	(0.062)	(0.062)	(0.062)	(0.062)
Diversification strategy (1 = yes)	−0.048	−0.052	−0.053	−0.034	−0.046
	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)
Manufacturing (1 = yes)	0.005	0.002	0.009	0.005	0.006
	(0.060)	(0.060)	(0.060)	(0.060)	(0.060)
Firm location (western)					
Eastern	0.323***	0.318***	0.323***	0.322***	0.320***
	(0.077)	(0.077)	(0.076)	(0.077)	(0.076)
Central	−0.024	−0.023	−0.031	−0.012	−0.022
	(0.087)	(0.086)	(0.086)	(0.087)	(0.086)
Firm age	0.015*	0.014*	0.014*	0.015*	0.014*
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Firm size	0.046***	0.084***	0.061***	0.041***	0.070***
	(0.008)	(0.019)	(0.010)	(0.008)	(0.020)
Family ownership		0.328**			0.213****
		(0.114)			(0.119)
Family ownership *firm size		−0.051*			−0.022
		(0.024)			(0.025)
Family management			0.382***		0.303**
			(0.097)		(0.105)
Family management *firm size			−0.105*		−0.075
			(0.046)		(0.049)
Family intentions				0.069*	0.028
				(0.032)	(0.034)
Family intentions *firm size				−0.021**	−0.015****
				(0.007)	(0.008)
Constant	1.570***	1.296***	1.417***	1.545***	1.259***
	(0.122)	(0.155)	(0.128)	(0.122)	(0.156)
R2	0.047	0.052	0.055	0.052	0.058

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; ****$p < 0.1$

business scale, the impact on business performance by family management rights was also weaker, which supports hypothesis 2.2. Similarly, model 4(D) supports hypothesis 2.3: the variable of family intentions was significantly positive, while the coefficient of the interaction between family intentions and scale was significantly negative, indicating that the positive effect of family intentions of business owners on business performance decreased as firm scale expanded. In these three models, the coefficients of other control variables changed slightly as compared to the base model, indicating that the impact of these control variables on firm performance was relatively stable.

Model 4(E) added all other variables to the basic model. We found that the significance levels of all the core independent variables were weaker or even disappeared, potentially caused by correlations among them (see Table 3). Even so, the interaction between family intentions and business scale was still significant at the 0.1 confidence level, implying that family intentions could affect the business performance of enterprises through affecting both formal organizational behaviors and other informal organizational behaviors.

Conclusion and discussion

Through analysis of the Ninth National Survey of Private Enterprises, we discussed the impact of family involvement on business performance from static and dynamic aspects. After controlling for business-related properties and personal abilities of business owners, we found that family involvement had a positive impact on the business performance of Chinese privately owned enterprises: the stronger the family involvement, the better the business performance. However, by analyzing family involvement from a dynamic aspect by including the organizational characteristic of firm scale, we found that this positive impact decreased with the expansion of the enterprise. After firm size exceeded a certain scale, family involvement actually had a negative impact on business performance. This was due to several reasons. First, small-scale private enterprises were weak figures among enterprises; due to the low strength of their businesses, they were vulnerable in competition with large enterprises in the market and situated in a relatively unstable state under market changes and competition. Second, China is undergoing a process of transformation in which market development is imperfect, and the legal system of the society is also incomplete. Small-scale private enterprises are also in a relatively unstable environment of policy and law and are relatively more susceptible to changes in the power sector and policies. At this time, families are playing an important role in the survival and development of enterprises. Both family ownership and family management power enable family interests to more closely adhere to business interests. Family members are connected together with innate kinship relations and share the same purpose. They are not only highly committed to the enterprise but also have a high degree of control over enterprises. This fact reduces the agency costs of businesses. A variety of scarce resources gathered from family networks also injects an important momentum into the growth of enterprises.

However, with the expansion of business scale, companies need to acquire more external social resources while the organizational structure and management of enterprises become increasingly complicated. Under this circumstance, the construction of family networks based on kinship with closed features may reject external social resources that are crucial for scale expansion and development of enterprises. In addition, the particularism of family relations may not respond to the requirement of rational organization management and even cause the emergence and expansion of conflicts between family members and professional managers. In summary, the change in business scale requires synchronous changes in the structure and managerial behavior of enterprises. When families cannot adapt to this change, family involvement will hinder the continuous development of enterprises. In fact, our study found that family involvement in Chinese private enterprises was indeed weakened as the scale of companies expanded.

This article also discussed the impact of family intentions of business owners on family control. We found that if business owners had more obvious family intentions, they were more inclined to control the ownership and management of enterprises. In previous economics research, scholars focused on the relationships between corporate structure, strategic management, and corporate performance and paid little attention to the effect of value on corporate structure and corporate performance. Since Max Weber's classic study, sociology has focused on the relationship between culture and economy. In China, the traditional Confucian culture has regarded the household and family as the basic unit of social structure. At the same time, household and family are also the basic units of production, consumption, and life of individuals. Although family tradition has weakened afterwards, its influence is far from absent. Family tradition, internalized through socialization, becomes the value of business owners and thus has an impact on the organizational structure and organizational behavior of enterprises. Our research showed that the family intentions of private business owners weakened as enterprises became more mature. In the process of modernization, the owners of private businesses will increasingly recognize that the resource needs and administrative requirements associated with the expansion of business scale cannot be completely provided by family relationships. Their family intentions will thus be weaker as the scale of enterprises expand, which further leads to weaker control over family ownership and management rights of enterprises.

Academic debate has focused on whether family as a traditional force can reduce the efficiency of businesses and even hinder economic modernization. Our study contributes to a further understanding of the real link between the family and enterprise development. Based on research on the history of Western enterprise, Chandler (1987) finds that family control over business becomes looser as companies grow. Our empirical research also finds that the impact of family involvement on the performance of private enterprises decreases as the scale of enterprises expands. It may even have a negative impact. In some ways, the impact of families on Chinese private enterprises is consistent with that observed in Western society. Nevertheless, the level of family involvement in Chinese private enterprises is still higher than that of Western private enterprises (Yang 2013). This phenomenon may be associated with China's particular traditional culture and market environment. First, Chinese traditional culture emphasizes the role of family in the social structure. Second, the imperfect environment of market and policy presents a major threat to the survival of private enterprises; family networks are the most important force in maintaining the survival of a family business. A further inference is that in the modernization process, with the shrinkage of traditional Chinese culture as well as further improvement in policy and market environment, the factor of family will also fade away in terms of its impact on Chinese private enterprises.

Endnote

[1]This research group constitutes the United Front Work Department, the All-China Federation of Industry and Commerce, the State Administration for Industry and Commerce, and the Research Committee (private) of Chinese Private-owned Economy.

Competing interests
The authors declare that they have no competing interests.

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