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"De-Familization" and Family Business Innovation

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Abstract: *Can de-familization promote innovation in family firms? Existing research suggests that "de-familization" can promote innovation, but this may be due to the lack of dynamic attention to the process of "de-familization". Based on this, this paper investigates the impact of "de-familization" on the innovation of family firms, using Chinese listed family firms from 2008 to 2020 as a research sample. It is found that there is an inverted U-shaped relationship between "de-familization" and family firms' innovation investment, while family members as CEOs and a favorable external institutional environment weaken this effect. This paper analyzes the impact of the degree of "de-familization" on the innovation level of family firms from a dynamic perspective, combining social-emotional wealth theory and agency theory, and thus enriches the research on the succession of family firms by professional managers in the context of inheritance, and provides new references for the selection of family business owners' successors.*

Keywords: *Family business; "De-familization"; Innovation input Introduction*

1. Introduction

At the beginning of 2020, the COVID-19 epidemic swept through the world, causing great damage to the economies of various countries and leaving a large number of businesses on the verge of bankruptcy. However, even under such an environment, Chinese family businesses still show strong vitality. According to the Global Family Business Survey 2021 - China Report, 32% of Chinese family businesses grew their revenues after the COVID-19 outbreak in 2020, which is 4% higher than their global peers. In addition, private entrepreneurs in China are increasingly focusing on business innovation in the wake of the epidemic.

At the same time, Chinese family businesses are gradually entering a period of succession. After 40 years of reform and opening up since 1978, the first generation of entrepreneurs have all reached old age, and choosing the right successor is an important issue for family businesses at this time. However, children may not be willing to take over from their fathers, so family enterprises have to take the road of "de-familyization" (Yu et al., 2020). However, the road to "de-familyization" of family firms is not always smooth. Although there are precedents such as the bold appointment of professional manager Fang Hongbo by Midea, there are also some cases of failure. For example, after two failed attempts at professional managers, Cao Dewang decided to be succeeded by his oldest son Cao Hui, and Fuyao Glass returned to the path of a family business.

Innovation is the main driver of business growth. However, scholars are divided on whether family firms are willing to innovate. Some scholars argue that family firms are generally less willing to innovate due to the fear of losing family control (Min Yijie et al., 2016; Luis, 2014). Other scholars argue from a long-term orientation and "longevity" perspective that families have a stronger willingness to innovate in order to ensure their survival in a highly competitive market. However, family firms have inherently complex attitudes toward innovation (Chen et al., 2018). To further clarify the innovative behavior of family firms, scholars have tried to understand the complex attitudes of family firms toward innovation from a more granular perspective. For example, Zhuhang et al. (2016) distinguish socioemotional wealth into extended and constrained, and find that extended socioemotional wealth promotes firm innovation, while constrained socioemotional wealth hinders firm innovation. However, considering that extended socio-emotional wealth is still based on constrained socio-emotional wealth such as family control, family firms as a whole still have a low level of innovation (Wang, Minglin, and He, Qiuqin, 2020). From the perspective of intra-family relationships, Chen Shihui et al. (2016) illustrated how the relationship characteristics within the family affect the innovation of family firms. Starting from the risk characteristics of different innovations, Bingde Wu and Ling Chen (2014) argue that compared to product innovation, process innovation requires less human capital, is less risky, and poses less threat to the

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control of family firms, thus there is no significant difference between family and non-family firms in terms of process innovation. luis et al. (2014), on the other hand, suggest that innovation activities themselves can also bring socio-emotional wealth gains, and Using a hybrid game model, they dynamically analyze how family firms trade-off socio-emotional wealth gains and losses in different contexts, and thus influence their innovation[1-3].

As the "founding generation" of the family grows older, scholars have paid more attention to the issue of family business succession. For example, Li Weining et al. (2021) found that the longer the second generation of the family participates in the management of the firm, the less they invest in innovation. However, due to the lack of explicit retirement plans for most family business owners (Wei, Chunyan, and Chen, Lei, 2015) and the lack of legitimacy of the authority of the second generation of the family, the authority of the family generation, and the eagerness of the second generation of the family to prove themselves (Li, Xinchun, et al., 2015), the second generation of the family may not want to take over from the family generation, and the family business is thus faced with the "succession Therefore, family enterprises face the situation of "no one to succeed them" and have to choose professional managers to take over. Many subsequent scholars have also successively studied the impact of "de-familying" from various perspectives such as firm value, financing constraints, innovation, and firm strategy (Li Huan et al. 2014; Wang Tengyan and Jin Yuan 2020; Sun Xiufeng et al. 2021; Xu Jin et al. 2019; Yu et al. 2020), in addition, Zhong Xi et al. (2021) and Chaopeng Wu et al. (2019) find that differences in family firms' expectations of innovation and the local culture of familism affect the process of "de-familization" of family firms in terms of the antecedents of "de-familization".

Although studies have demonstrated a positive relationship between "de-familization" and corporate innovation (Xu, Jin et al., 2019), "de-familization" has been found to have a positive relationship with local culture. However, "de-familization" itself is a long process (Ai, Fengyi, and Liu, 2013), during which the attitude of family firms toward innovation and their ability to cope with innovation may change dynamically rather than in a simple linear relationship. Therefore, this paper argues that simply analyzing the impact of "de-familization" on firm behavior from a static perspective may lead to neglecting the negative effects of "de-familization". Therefore, this paper analyzes the dynamic changes of family firms from a dynamic perspective, combining agency theory and socio-emotional wealth theory, and then analyzes the impact on firms' innovation investment.

Using a sample of Chinese family-listed companies from 2008 to 2020, this paper examines the impact of "de-familization" on the level of corporate innovation investment in family firms and discusses the impact of "de-familization" on the level of corporate innovation investment when the CEO status changes and the institutional environment changes. The impact of "de-familization" on the level of innovation investment is discussed. The results show that there is an inverted U-shaped relationship between "de-familization" and innovation investment in family firms, i.e., when the degree of "de-familization" is low, "de-familization" and the introduction of professional managers can increase the level of innovation investment in family firms. When the degree of "de-familization" is high, "de-familization" will reduce the investment in innovation of family firms. This effect is weakened when the family member is the CEO. In addition, this paper introduces the institutional environment as a moderating variable, and finds that the effect of "de-familization" on family firms' innovation investment is weaker in regions with good institutional environment, while the effect of "de-familization" on family firms' innovation investment is stronger in regions with poor institutional environment. In regions with poorer institutional environments, the impact of "de-familization" on family firms' innovation investment is stronger[4-7].

The contribution of this paper is threefold: First, most previous studies on "de-familization" are based on a static perspective, but ignore the fact that "de-familization" of family firms is a dynamic process (Sun, Xiufeng et al., 2021). In this paper, we study the impact of "de-familization" on innovation in family firms from a dynamic perspective, combining the ability and willingness to innovate in family firms, and then reveal the changes of family firms' attitudes toward innovation from the perspective of "de-familization", which expands the research boundary of family firms. This paper expands the research boundary of family firms. Second, this paper reveals how firm heterogeneity affects the relationship between "de-familization" and firm R&D investment. This paper explores how the impact of "de-familization" on innovation changes in the context of different positions held by family members, and thus provides new ideas and methods for family firms to improve innovation in the process of "de-familization" at the firm level. Third, based on the perspective of institutional environment, this paper explores how the above relationship changes in different institutional environments, thus providing more theoretical and practical implications for the transformation of family firms in different external environments.

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2. Theoretical analysis and research hypotheses

2.1. "De-familization" and innovation investment in family businesses

For a company to implement innovation it needs to be considered from both an intention and a capability perspective.

From a capability perspective, the resources that family firms have are necessary for innovation. A lower degree of "de-familization" can alleviate the agency problem within the family and thus provide more resources for innovation. Existing research suggests that altruistic behavior among family members within family firms may be asymmetric (Mengna Xu and Shengchun Zhou, 2008), such as parents' love for their children, which is unrequited. However, such behavior may lead family firms to fall into the "Samaritan's dilemma" and induce opportunistic behaviors such as free-riding and laziness among family members, which in turn may create a reverse incentive for family members (Wang, Minglin et al., 2014; Tan, Qingmei et al., 2021) and cause agency problems for family managers. In addition, there are goal differences among family members. The inconsistent utility pursued among family members and the constrained resources may lead to conflict of interest among family members (Schulze et al., 2003; Cai Di et al., 2016), which in turn triggers irrational behaviors such as power struggle and mutual dismantling within the family (He et al., 2016), depleting family resources. Since resource allocation within family firms is mainly based on kinship-based altruism (Wang, Minglin et al., 2014), the entry of professional managers who do not have kinship ties can reduce one-way altruistic behaviors within family firms, which in turn reduces intra-family firm rivalry as well as agency problems, retains more resources in the firm, and provides more resources for firm innovation. In general, family business owners have a lower degree of trust in professional managers and will supervise competent but uneasy professional managers by arranging family members as their deputies (He, Xuan, and Zhu, 2008), thus reducing the opportunistic behavior of professional managers, and therefore the agency cost caused by professional managers at this time is lower. Based on this, this paper argues that a lower degree of "de-familization" can promote the innovation input of family firms[8-15].

However, as the degree of "de-familization" increases, a higher degree of "de-familization" may lead to agency problems between the firm and the professional manager. Unlike family members, professional managers have relatively weak altruistic tendencies (Chua et al., 2010). This may lead to a disconnect between the interests of professional managers and the family business (Xu, Mengna, and Zhou, 2008). With the increasing degree of "de-familization" and the gradual separation of control and ownership of family firms, the agency problem of professional managers in family firms may gradually become serious (Li, Huan et al., 2014). Managers may use resources to satisfy their own needs rather than to innovate in the firm due to opportunistic motives. Therefore, a higher degree of "de-familization" may inhibit family firms from investing in innovation.

From the perspective of intention, "de-familization" leads to a dynamic change in family firms' intention to innovate. A lower degree of "de-familization" can promote family firms' willingness to innovate. For family firms, the main constraint to their development is not financial capital but the lack of quality human resources (Chu, 2002). The family itself has a long-term orientation and hopes that the family business will "last forever" (Dou, Junsheng, and Wu, Saisai, 2019), which gives family firms an incentive to innovate and enhance their competitiveness. It is generally believed that professional managers are better in terms of professional skills than the limited human capital within the family (Bai, et al., 2020), so when the degree of "de-familization" is low, "de-familization" can enhance the human capital of family firms and improve their ability to cope with innovation risks. Therefore, when the degree of "de-familization" is low, "de-familization" can enhance the human capital of family firms, improve their ability to cope with innovation risks, and thus reduce risks while increasing the likelihood of social and emotional wealth gains from innovation, and increase firms' willingness to innovate and invest in innovation[16-22].

However, as more and more family members withdraw from the daily production and operation activities of the family business, the family may view the family business as a short-term investment and focus on short-term returns (Dou Junsheng and Wu Sai Sai, 2019), which makes the reduction of the family business's willingness to innovate. At this point, even if the professional manager has the willingness to innovate, the family can restrict the professional manager's long-term pursuit by virtue of its control over the company. In addition, even if the family still has a long-term perspective at this point, since the professional manager is not bound by the social-emotional wealth, his or her innovative behavior can easily evolve into "innovative destruction" (Morck and Yeung, 2003), changing the resources valued by the family members, which may in turn intentionally or unintentionally cause the

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family's social The family may also oppose the professional manager's behavior in order to maintain the social-emotional wealth (Binacci et al., 2016) and restrict the professional manager's innovative input. Therefore, when the degree of "de-familization" is high, "de-familization" may reduce the willingness of family firms to innovate and thus reduce innovation investment.

Based on the above discussion, this paper proposes the following hypotheses.

H1: There is an inverted U-shaped relationship between "de-familization" and innovation investment in family firms.

2.2. Reconciliation of whether the general manager is a member of the family

Although it has been argued that if the CEO is a family member may strengthen the tendency of altruism within the family firm and thus seek more benefits for the family members (Li et al., 2010), considering the importance of the CEO in the operation of the firm, when a family member is the CEO, it will strengthen the binding of the family reputation and the firm's reputation (Fu-Siu Jiang et al., 2017). Out of the consideration of maintaining the family reputation, agency problems such as blind altruism of the family CEO can be restrained in the process of running and managing the company. In addition, it is generally believed that family CEOs are more long-term oriented compared to professional managers (Zhu et al., 2016) and also face lower performance pressure (James et al., 2013), when family CEOs themselves are more willing to innovate, and the positive impact of "de-familization" on family firms' innovation investment The positive impact of "de-familization" on family firms' innovation investment is weakened [23-28].

When the degree of "de-familization" is high, although there are few family members left in the family firm, the information asymmetry between the family and the firm is low because the general manager is still a family member and still participates in the daily business interactions of the firm. This enhances the family's ability to supervise the professional managers in the firm, thus alleviating the agency problem of professional managers within the family firm. At the same time, due to the family identity of the family CEO, when a family member acts as CEO, he or she can guide the investment program of the family business while maintaining the family's social and emotional wealth as much as possible, reducing the possibility of "innovative destruction" of the family's social and emotional wealth by the professional manager. In this case, the negative impact of "de-familization" on the innovation investment of family enterprises is weakened.

Based on the above discussion, this paper proposes the following hypotheses.

H2: The impact of "de-familization" on innovation investment in family firms is weaker when the CEO is a family member compared to a professional manager as CEO.

2.3. The moderating role of the institutional environment

For firms, changes in their behavior are necessarily constrained by the external institutional environment (Powell and DiMaggio, 1983). The marketization index compiled by Wang Xiaolu et al. (2017) constructs a marketization index from five aspects, including the relationship between the government and the market, the development of the non-state economy, the development of product markets, the development of factor markets, the development of market intermediary organizations and the rule of law environment, which better measures the external institutional environment.

In regions with a better institutional environment, it can effectively reduce the consumption of firm resources by family members on the one hand. Wang Minglin et al. (2014) found that with the gradual improvement of the institutional environment, the negative impact within the family due to altruism can be effectively curbed. Due to a more mature and complete external environment and monitoring mechanism, the level of effort of family members can be reflected more effectively. At this point, if family companies continue to let family members "ride" and compete with each other for power, the family's own reputation will be damaged and the family's social and emotional wealth will be lost. At this point, a lower degree of "de-familization" will gradually reduce the negative impact of alleviating altruism [29-33].

On the other hand, a good institutional environment can alleviate the agency problem of professional managers. In general, regions with a good institutional environment usually have a more developed market for professional managers (Chen, Ling, and Wang, H., 2013). Due to the higher level of investor protection, the opportunistic behavior of professional managers themselves can be curbed in a timely

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manner (Cai Di et al., 2016), thus reducing the agency problems and supervision costs associated with the separation of powers. At this point, the problems of professional managers brought about by a higher degree of "de-familization" are also mitigated.

Based on the above discussion, the following hypotheses are proposed.

H3: The effect of "de-familization" on innovation investment in family firms is weaker in regions with better institutional environment compared to those with poorer institutional environment.

3. Study design

3.1. Sample selection

In previous studies, academics do not have a uniform definition of family firms. For example, Li, X. C. et al. (2020) classified previous scholars' definitions of family firms into three broad categories: family governance perspective, family behavior perspective, and family values-culture perspective, while Joseph et al. (2002) constructed the F-PEC model to describe the family's influence on the firm in terms of three dimensions: power, experience, and culture.

Referring to Chrisman et al.'s (2002) definition of family firms and the criteria of Liu, Xing et al. (2020) and Wang, Minglin et al. (2014), this paper defines the screening criteria of family firms as follows: (1) the actual controller can be traced back to a natural person or family; (2) the natural person or family is the first major shareholder of the firm and the control percentage is not less than 15%; (3) in addition to the actual (3) In addition to the actual controller, there are other related family members who hold shares or work in the enterprise.

Drawing on existing studies, this paper further screens and processes the obtained data as follows: (1) this paper excludes the data of the financial and insurance industries and the samples that were ST in the current year; (2) excludes the samples with missing relevant data; (3) performs a 1% tailing process on all continuous random variables to eliminate the effects caused by extreme values. The final 7,290 observations were obtained. The data were obtained from the CSMAR database [34-39].

3.2. Variable measurement

1) Explanatory variables

Innovation input (RD). Regarding the measurement of innovation input, a considerable number of measures are provided in existing studies. For example, the ratio of R&D investment to total assets (Li Jian et al., 2021; Xu Yupeng et al., 2021), the ratio of R&D investment to operating income (Du Shanzhong, 2021; Zhu Hang et al., 2016), and the ratio of the number of R&D personnel to total employees. In this paper, the ratio of corporate R&D investment divided by total assets is used to measure the innovation investment of family firms by referring to the studies of Li Jian et al. (2021) and Xu Yupeng et al.

2) Explanatory variables

"De-familization" (Nfm). Previous studies on "de-familization" have more often used dummy variables to measure "de-familization" (Wang, Teng-Yan, and Jin-Yuan, 2020; Wu, Chao-Peng et al., 2019; Yu et al., 2020), however, dummy variables are difficult to reflect family firms However, dummy variables cannot reflect the dynamic change process of "de-familization" of family firms. In view of the long-term nature of "de-familization" (Ai, Fengyi, and Liu, 2013), this paper measures the degree of "de-familization" of family firms by the proportion of non-family members in all executives (directors, supervisors, and executives) with reference to Li, Huan, et al. (2014).

3) Moderating variables

Whether the general manager is a family member or not (FCEO). If the current general manager of the family enterprise is a family member, the value of 1 is assigned; otherwise, the value of 0 is assigned.

Institutional environment (mMarket). The data of institutional environment are obtained from Fan's market index. Referring to Chen (2015), if the marketization index of the firm's location in the current year is higher than the median of the regional marketization index, it is defined as a region with a better institutional environment and is assigned a value of 1; while if the marketization index of the firm's location in the current year is lower than the median of the regional marketization index, it is defined as

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a region with a poor institutional environment and is assigned a value of 0.

4. Control variables

Referring to the studies of Weining Li et al. (2021), Bingde Wu and Ling Chen (2014), and Yijie Min et al. (2016), this paper introduces firm size (CSize), gearing ratio (Lev), board size (Bsize), return on assets (ROA), firm age (Age), firm growth (Growth), shareholding ratio of the first largest shareholder (F1), and Institutional investors' shareholding (InsHold), dual positions (Dual), overseas operations (OverSea), and proportion of independent directors (IND) as control variables, and the effects of industry (Industry) and year (Year) are controlled.

Table 1 gives the types, names, and specific meanings of the variables.

Table 1: Variable definition table

Variable type	Variable name	Variable code	Variable measurement method
Independent variable	Degree of "de-familization"	Nfm	Proportion of all company executives (directors, officers and supervisors) who are not family members
Dependent variable	Innovation investment	RD	R&D investment/total assets
Moderating variable	Whether the CEO is a family member	FCEO	Whether the general manager is a family member
	Institutional environment	mMarket	Dummy variable, take 1 if institutional environment is good; otherwise, take 0
Control variables	Corporate debt	lev	Gearing ratio
	Age Logarithm of firm	Age	Age Logarithm of firm's establishment years
	Firm size	CSize	Logarithm of firm's total assets
	Business Growth	Growth	Revenue Growth
	Board size	Bsize	Total number of board members
	Size of Independent Directors	IND	Number of independent directors to total number of board of directors
	Percentage of shareholding of the first largest shareholder	Dual	dummy variable, take 1 for both chairman and general manager; otherwise, take 0
	Shareholding ratio of the largest shareholder	F1	Number of shares held by the largest shareholder as a percentage of the total share capital of the company
	Shareholding of institutional investors	InsHold	Number of shares held by institutional investors as a percentage of total corporate equity
	Profitability	ROA	Return on total assets
	Overseas operation	OverSea	dummy variable, take 1 if the family firm operates internationally; otherwise, take 0

4.1. Research Model

To test the relationship between "de-familization" and family firms' innovation investment, the following three multiple regression models are developed. In the following models, Control represents the control variable and Nfm2 represents the squared term of Nfm. Also, all explanatory, moderating and control variables are lagged by one period in this paper.

$$RD_{i,t+1} = \alpha + \beta_1 \times Nfm_{i,t} + \beta_2 \times Nfm2_{i,t} + \beta_k Control + \sum year + \sum Industry \quad (1)$$

$$RD_{i,t+1} = \alpha + \beta_1 \times Nfm_{i,t} + \beta_2 \times Nfm2_{i,t} + \beta_3 \times FECO_{i,t} + \beta_4 Nfm2_{i,t} \times FECO_{i,t} + \beta_k Control + \sum year + \sum Industry \quad (2)$$

$$RD_{i,t+1} = \alpha + \beta_1 \times Nfm_{i,t} + \beta_2 \times Nfm2_{i,t} + \beta_3 \times mMarket_{i,t} + \beta_4 Nfm2_{i,t} \times mMarket_{i,t} + \beta_k Control + \sum year + \sum Industry \quad (3)$$

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5. Empirical testing

5.1. Descriptive statistics

Table 2 gives the results of descriptive statistics for the main variables of this study. As can be seen from Table 2, the mean value of R&D investment/total assets (RD) is 0.022 and the standard deviation is 0.016, which proves that overall family firms have a low level of innovation investment. And the maximum value is 0.088, which proves that there are still some family firms maintaining a high level of innovation investment. The mean value of "de-familization" (Nfm) is 0.859 and the standard deviation is 0.0724, proving that overall, the proportion of non-family members in family firms is high, while the minimum value is 0.643 and the maximum value is 1, proving that there are some differences in the "de-familization" among different family firms. "The mean value of whether the CEO is a family member (FCEO) is 0.586, proving that 58.6% of the family firms in the sample still have a family member as CEO. The mean value of institutional environment (mMarket) is 0.898, proving that most of the family firms are in regions with a better institutional environment [40-45].

Table 2: Descriptive statistics of the main study variables

Variable	N	mean	sd	min	max
RD	7,290	0.022	0.016	0.00	0.088
Nfm	7,290	0.859	0.0724	0.643	1
FCEO	7,290	0.586	0.493	0	1
mMarket	7,290	0.898	0.303	0	1
lev	7,290	0.364	0.181	0.0482	0.816
Age	7,290	1.504	0.844	0	3.135
CSize	7,290	21.81	0.971	20.06	24.63
Growth	7,290	0.285	0.615	-0.659	3.860
Bsize	7,290	2.077	0.183	1.609	2.485
IND	7,290	0.379	0.0529	0.333	0.571
Dual	7,290	0.399	0.490	0	1
F1	7,290	33.44	12.76	10.30	67.74
InsHold	7,290	32.39	24.75	0.0719	84.63
ROA	7,290	0.0553	0.0672	-0.306	0.223
Oversea	7,290	0.719	0.450	0	1

5.2. Correlation analysis

Table 3: Correlation analysis table of the main variables

Variable	1	2	3	4	5	6	7	8
RD	1							
Nfm	0.002	1						
FCEO	0.071***	-0.354***	1					
mMarket	0.146***	-0.075***	0.072***	1				
lev	-0.157***	0.148***	-0.109***	0.009	1			
Age	-0.141***	0.272***	-0.211***	-0.081***	0.283***	1		
CSize	-0.180***	0.175***	-0.154***	-0.016	0.509***	0.470***	1	
Growth	0.008	0.056***	-0.027**	-0.045***	0.005	0.027**	0.001	1
Bsize	-0.028**	0.013	-0.092***	-0.015	0.046***	0.051***	0.156***	-0.013
IND	0.019	0.002	0.093***	-0.002	-0.011	-0.040***	-0.067***	0.017
Dual	0.057***	-0.002	0.564***	0.022*	-0.047***	-0.114***	-0.118***	0.002
F1	-0.034***	-0.065***	0.029**	0.004	-0.009	-0.230***	-0.009	-0.020*
InsHold	-0.097***	0.051***	-0.132***	-0.045***	0.131***	0.124***	0.310***	-0.041***
ROA	0.077***	-0.079***	0.042***	0.01	-0.224***	-0.135***	0.078***	0.007
Oversea	0.089***	-0.071***	0.053***	0.137***	0.012	-0.032***	0.029**	-0.109***
	9	10	11	12	13	14	15	
Bsize	1							
IND	-0.659***	1						
Dual	-0.125***	0.123***	1					
F1	-0.059***	0.066***	0.066***	1				
InsHold	0.113***	-0.093***	-0.085***	0.355***	1			
ROA	0.064***	-0.017	-0.016	0.148***	0.129***	1		
Oversea	-0.002	0.016	0.015	-0.009	-0.016	-0.029**	1	

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In order to test whether there is multicollinearity among the variables, the main variables in the model were subjected to the Person test in this paper, and the results are shown in Table 3. as can be seen from Table 3, the correlation coefficients between the variables are all lower than 0.7, so the possibility of multicollinearity among the variables is low[46-48].

5.3. Regression results

Table 4: Multiple regression results of "de-familization" and innovation investment in family firms

Variable	model1 RD	model2 RD	model3 RD	model4 RD
Nfm	0.014***	0.168***	0.095*	0.170***
	(4.881)	(3.903)	(1.948)	(3.960)
Nfm2		-0.092***	-0.056**	-0.114***
		(-3.576)	(-1.972)	(-4.369)
Nfm2_FCEO			0.012***	
			(3.129)	
Nfm2_mMarket				0.023***
				(4.886)
FCEO	0.001**	0.001	-0.008***	0.001
	(2.013)	(1.493)	(-2.810)	(1.554)
mMarket	0.005***	0.005***	0.005***	-0.013***
	(8.235)	(7.969)	(8.004)	(-3.444)
lev	-0.004***	-0.004***	-0.004***	-0.004***
	(-3.169)	(-3.303)	(-3.284)	(-3.265)
Age	-0.001***	-0.001**	-0.001**	-0.001**
	(-2.669)	(-2.386)	(-2.356)	(-2.268)
CSize	-0.001***	-0.001***	-0.001***	-0.001***
	(-4.625)	(-4.649)	(-4.749)	(-4.789)
Growth	0.001***	0.001***	0.001***	0.001***
	(2.623)	(2.628)	(2.676)	(2.679)
Bsize	0.001	0.001	0.001	0.001
	(0.966)	(0.903)	(0.838)	(0.871)
IND	0.006	0.005	0.006	0.006
	(1.208)	(1.166)	(1.210)	(1.265)
Dual	-0.000	0.000	-0.000	0.000
	(-0.233)	(0.060)	(-0.367)	(0.032)
F1	-0.000	-0.000	-0.000	-0.000
	(-1.214)	(-1.428)	(-1.421)	(-1.477)
InsHold	0.000	0.000	0.000	0.000
	(0.007)	(0.137)	(0.249)	(0.500)
ROA	0.032***	0.031***	0.031***	0.031***
	(9.235)	(9.095)	(9.051)	(9.087)
Oversea	0.002***	0.002***	0.002***	0.002***
	(4.916)	(4.929)	(4.910)	(4.937)
Industry	YES	YES	YES	YES
year	YES	YES	YES	YES
Constant	0.019***	-0.044**	-0.007	-0.028
	(2.619)	(-2.295)	(-0.328)	(-1.462)
R-squared	0.242	0.244	0.245	0.247
F	43.19	43.19	43.19	43.19
Observations	5,695	5,695	5,695	5,695

Note: *** indicates p<0.01, ** indicates p<0.05, * indicates p<0.1 t-value in parentheses, same below.

To examine the relationship between "de-familization" and innovation investment of family firms, this study conducted a multiple regression analysis, controlling for industry and year, and the results are shown in Table 3.

(1) The effect of "de-familization" on innovation investment of family firms. Putting only the primary term of the independent variable (Nfm) in Model 1 of Table 4, the regression coefficient was found to be 0.014, which is significant at the level of p<0.01. This is also largely consistent with the previous empirical results (Xu, Jin et al., 2019). In Model 2, based on Model 1, the quadratic term of the

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independent variable (Nfm) is added, and it is found that there is still a significant inverted U-shaped effect of "de-familization" on family firm innovation, which is still significant at the p<0.01 level. The above results are still significant in Model 3 and Model 4 after considering the moderating effects of family CEO and institutional environment. Therefore, the relationship between family firm "de-familization" and family firm innovation investment is not a simple linear relationship, but a dynamic process: when the degree of "de-familization" is low, de-familization can promote the level of family firm innovation investment; but when However, when the degree of "de-familization" crosses a certain threshold, "de-familization" will lead to a decrease in the level of innovation investment of family firms. Based on this, the hypothesis H1 holds.

(2) The moderating effect of family members as CEOs. Model 3 in Table 4 examines the moderating effect of whether family members serve as CEOs on the "de-familization" of family firms and family firms' innovation investment. The regression results of model 3 in Table 3 show that the coefficient of the cross product (Nfm2_FCEO) of the independent variable (Nfm2) and the moderating variable (FCEO) is 0.012 and significant at the p<0.01 level, which proves that the family member's CEO role weakens the inverted U-shaped relationship between family firm "de-familyization" and family firm innovation investment. This paper hypothesizes that H2 holds. Based on this, the hypothesis H2 holds.

(3) Moderating effect of institutional environment. Model 4 in Table 4 examines the moderating effect of institutional environment on family firms' "de-familization" and family firms' innovation investment. The regression results of model 4 in Table 4 show that the coefficient of the cross product (mMarket) of the independent variable (Nfm2) and the moderating variable (mMarket) is 0.023, which is significant at the p<0.01 level, demonstrating that in regions with a better institutional environment, the degree of "de-familization" is lower, the agency costs of family members themselves are lower, and the professional managers are less likely to be involved in innovation. At the same time, when the degree of "de-familization" is higher, the institutional environment is better to restrain the agency problem of professional managers, so that family firms have more resources to invest in innovation activities. Based on this, the hypothesis H3 holds [49-51].

6. Robustness tests

6.1. Substitution of dependent variable

Table 5: Multivariate regression results of "de-familization" and innovation investment in family firms after replacing the dependent variable

variable	model5 RD1	model6 RD1	model7 RD1	model8 RD1
Nfm	0.031***	0.296***	0.098	0.300***
	(4.365)	(2.905)	(0.844)	(2.945)
Nfm2		-0.160***	-0.060	-0.199***
		(-2.611)	(-0.898)	(-3.208)
Nfm2_FCEO			0.033***	
			(3.603)	
Nfm2_mMarket				0.042***
				(3.688)
FCEO	0.001	0.000	-0.024***	0.001
	(0.754)	(0.380)	(-3.476)	(0.424)
mMarket	0.005***	0.005***	0.005***	-0.027***
	(3.363)	(3.172)	(3.209)	(-3.089)
lev	-0.057***	-0.057***	-0.057***	-0.057***
	(-18.384)	(-18.478)	(-18.472)	(-18.464)
Age	-0.000	-0.000	-0.000	-0.000
	(-0.673)	(-0.469)	(-0.433)	(-0.377)
CSize	-0.001	-0.001	-0.001	-0.001
	(-0.861)	(-0.876)	(-0.990)	(-0.977)
Growth	0.005***	0.005***	0.005***	0.005***
	(6.527)	(6.532)	(6.591)	(6.574)
Bsize	0.003	0.003	0.002	0.003
	(0.880)	(0.834)	(0.759)	(0.809)
IND	0.020*	0.020*	0.020*	0.020*

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	(1.793)	(1.762)	(1.813)	(1.837)
Dual	0.004***	0.004***	0.004***	0.004***
	(3.649)	(3.853)	(3.329)	(3.836)
F1	-0.000***	-0.000***	-0.000***	-0.000***
	(-2.815)	(-2.969)	(-2.962)	(-3.006)
InsHold	-0.000*	-0.000	-0.000	-0.000
	(-1.645)	(-1.550)	(-1.422)	(-1.273)
ROA	-0.050***	-0.051***	-0.051***	-0.051***
	(-6.175)	(-6.277)	(-6.340)	(-6.303)
Oversea	-0.000	-0.000	-0.000	-0.000
	(-0.336)	(-0.330)	(-0.357)	(-0.332)
Industry	YES	YES	YES	YES
year	YES	YES	YES	YES
Constant	0.019	-0.090**	0.010	-0.062
	(1.107)	(-1.985)	(0.183)	(-1.352)
R-squared	0.330	0.331	0.333	0.333
F	65.51	65.51	65.51	65.51
Observations	5,695	5,695	5,695	5,695

In this paper, the regression results are tested by replacing the variables of firms' innovation investment. In existing studies, R&D investment as a percentage of operating revenue has also been widely used to measure the level of firms' innovation investment (Du Shanchong, 2021; Zhu Hong et al., 2016). Therefore, in this paper, the explanatory variable is changed to RD1 (R&D investment/operating revenue), also lagged by one period, for regression. The test results are generally consistent with Table 4, and the results of robustness tests for specific variables are shown in Table 5.

6.2. Change of family business screening criteria

There are various criteria for the screening of family firms in previous studies on family firms. In this paper, referring to the study of Cai Di and Luo Jinhui (2015), we redefine family firms by using the control ratio greater than or equal to 20% as the judgment criterion and test it against hypotheses H1-H3, whose hypotheses still hold. The empirical results of the relevant regressions are shown in Table 6.

Table 6: Multiple regression results of "de-familization" and family firms' innovation investment after changing the screening criteria

variable	model9 RD	model10 RD	model11 RD	model12 RD
Nfm	0.014***	0.160***	0.095*	0.162***
	(4.520)	(3.669)	(1.907)	(3.725)
Nfm2		-0.088***	-0.055*	-0.109***
		(-3.366)	(-1.925)	(-4.106)
Nfm2_FCEO			0.011***	
			(2.752)	
Nfm2_mMarket				0.022***
				(4.521)
FCEO	0.001*	0.001	-0.007**	0.001
	(1.667)	(1.179)	(-2.496)	(1.233)
mMarket	0.005***	0.005***	0.005***	-0.012***
	(7.888)	(7.624)	(7.657)	(-3.134)
lev	-0.003**	-0.004***	-0.004***	-0.003***
	(-2.527)	(-2.649)	(-2.640)	(-2.629)
Age	-0.001***	-0.001**	-0.001**	-0.001**
	(-2.604)	(-2.365)	(-2.340)	(-2.257)
CSize	-0.001***	-0.001***	-0.002***	-0.002***
	(-5.272)	(-5.258)	(-5.337)	(-5.374)
Growth	0.001***	0.001***	0.001***	0.001***
	(2.623)	(2.624)	(2.677)	(2.646)
Bsize	0.001	0.001	0.001	0.001
	(0.597)	(0.547)	(0.497)	(0.556)
IND	0.002	0.002	0.002	0.002

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	(0.405)	(0.351)	(0.395)	(0.464)
Dual	-0.000	-0.000	-0.000	-0.000
	(-0.485)	(-0.203)	(-0.557)	(-0.226)
F1	-0.000	-0.000	-0.000	-0.000
	(-0.788)	(-0.988)	(-0.987)	(-1.007)
InsHold	0.000	0.000	0.000	0.000
	(0.570)	(0.673)	(0.775)	(1.009)
ROA	0.032***	0.032***	0.032***	0.032***
	(9.296)	(9.158)	(9.108)	(9.136)
Oversea	0.002***	0.002***	0.002***	0.002***
	(4.867)	(4.887)	(4.861)	(4.887)
Industry	YES	YES	YES	YES
year	YES	YES	YES	YES
Constant	0.010	-0.051**	-0.018	-0.037
	(0.624)	(-2.130)	(-0.672)	(-1.556)
R-squared	0.248	0.249	0.250	0.252
F	42.35	42.35	42.35	42.35
Observations	5,445	5,445	5,445	5,445

6.3. Heckman two-stage method

This paper examines the impact of "de-familization" on innovation in family firms based on a sample of listed family firms from 2008 to 2020. However, considering that some family firms may not disclose the relevant R&D data, this may make the sample self-selection problem in the regression process. Based on this, this paper draws on the studies of Ni, T. and Wang, Y. (2018) and Xu, F. (2019), and uses the Heckman two-step method to test.

$$\Pr(Dis.R\&D = 1|X_n) = \varphi\left(\alpha + \beta Z + \sum year + \sum Industry\right) \quad (4)$$

Among them, model 4 is a Probit model of whether to disclose R&D input data, and Dis.R&D represents a dummy variable for whether the company discloses R&D data, with disclosure being 1 and 0 otherwise. z represents explanatory variables that may affect the company's disclosure of R&D data, including gearing (lev), growth rate of operating income (Growth), gearing ratio (ROA), operating income in industry (MS1), company's year of establishment (Age), and company size (Size). The regression results are shown in Table 7.

Table 7: Heckman Phase I: Factors influencing disclosure of R&D investment

variable	model13 Dis.R&D
lev	-1.257***
	(-10.518)
Growth	-0.038***
	(-2.996)
ROA	-0.127
	(-0.458)
MS1	-0.507*
	(-1.676)
Age	-1.204***
	(-14.653)
Size	0.164***
	(7.400)
year	YES
Industry	YES
lnsig2u	0.682
Constant	-1.640***
	(-3.134)
Observations	31,809
Number of Stkcd	3,710

Based on model (4), the "inverse Mills ratio" (imr) is calculated and placed into model (1) as a control variable, the results are still significant and consistent with the previous paper, and the conclusions of this paper are robust, as shown in Table 8.

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Table 8: Heckman Phase II: "De-Familying" and R&D Investment in Family Businesses

variable	model114 RD
Nfm	0.184***
	(4.182)
Nfm2	-0.103***
	(-3.883)
FCEO	0.001*
	(1.863)
mMarket	0.005***
	(7.666)
lev	-0.003**
	(-2.302)
Age	-0.000
	(-1.328)
CSize	-0.001***
	(-4.867)
Growth	0.001***
	(2.979)
Bsize	0.002
	(1.190)
IND	0.005
	(0.983)
Dual	0.000
	(0.208)
F1	-0.000
	(-1.491)
InsHold	0.000
	(0.253)
ROA	0.035***
	(9.480)
Oversea	0.002***
	(4.375)
imr	0.000
	(0.162)
Industry	YES
year	YES
Constant	-0.066***
	(-2.763)
R-squared	0.250
F	41.71
Observations	5,426

7. Conclusion

7.1. Key findings

This paper uses Chinese listed family firms from 2008 to 2020 as a sample to verify the impact of family firm "de-familization" on family firms' innovation investment. The results show that: (1) as the degree of "de-familization" of family firms increases, the innovation level of family firms increases and then decreases. (2) At the firm level, when a family member is the CEO, the impact of "de-familization" on the innovation level of family firms can be effectively reduced. (3) At the macro level, a more complete market environment also reduces the impact of "de-familization" on family firm innovation when the firm is located in a region with a better institutional environment. In general, this paper analyzes how family firms' innovation intentions and capabilities change dynamically from a dynamic perspective, starting from the degree of "de-familization" of family firms, which in turn affects the actual level of innovation of family firms. On this basis, we analyze how different internal and external factors affect the innovation behavior of family firms.

7.2. Theoretical significance

(1) This study provides a nuanced explanation for the change in the level of innovation of family firms during the "de-familization" process. Unlike the previous binary variables for "de-familization", this paper finds that the impact of changes in the degree of "de-familization" on the innovation of family firms has been neglected, and the impact of different degrees of "de-familization" needs to be considered in the actual study. This paper finds that the impact of changes in the degree of "de-familization" on the innovation of family firms is neglected. This will help us understand the complexity of family firms'

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attitudes toward innovation in the process of "de-familization".

(2) This paper also challenges the view that family members are more like "stewards" and that the agency of family members in family firms also deserves attention. Even though family members may be more loyal and reliable than non-family members, the unique social structure of Chinese society may lead to inconsistent interests among family members. This in turn may lead to serious agency problems for family members as well. This will also help to revisit the roles played by family members in subsequent studies, distinguishing the roles played by family members in different contexts.

7.3. Practical significance

The practical implications of this paper are as follows: (1) In the process of "de-familization" of family enterprises by introducing professional managers, we should pay attention to the degree of "de-familization". Too much or too little participation of professional managers in the production and management activities of enterprises is not conducive to improving the level of innovation of enterprises, which will easily reduce the competitiveness of family enterprises in the market and affect the survival of enterprises in the market. (2) This paper does not conclude that family business owners must retain a certain number of family members in their family businesses, but suggests that family business owners should not ignore the negative effects of "de-familization" and raise their awareness of the negative effects of "de-familization", so that they can be more aware of the negative effects of "de-familization" during corporate crises. The paper suggests that family business owners should not ignore the negative effects of "de-familying" and raise awareness of the negative effects of "de-familying" so that they can identify and solve problems in time to reduce the risks of family businesses in the process of operation before the outbreak of corporate crises. (3) This paper demonstrates the impact of CEO status change on family business innovation. Therefore, in the process of "de-familization", if family business owners find that "de-familization" brings certain negative effects, they can alleviate the problems caused by "de-familization" by changing the CEO. (4) This paper also suggests that family enterprises should be able to change their CEOs to alleviate the problems caused by "de-familyization". (4) This paper also suggests that family business owners should pay attention to the changes in the external environment during the process of "de-familying". Although the impact of "de-familization" on family businesses is complicated, family business owners do not have to avoid "de-familization" for this reason. A quality external environment can help business owners mitigate the negative effects of de-familying to a certain extent.

7.4. Research shortcomings and prospects

There are still some shortcomings in this paper, which also provide new ideas for future research. (1) The measurement of the degree of "de-familization" is not precise enough. Chinese people's concept of "family" is not unchanging. Zhu Hongjun et al. (2007) argue that the low trust in Chinese society and the pursuit of trust in family firms have sublimated the concept of "family" and created a "pan-familization" of non-family members. The professional managers are treated as family members, and they are also characterized by mutual trust among family members (He Xuan et al., 2008), which is also considered as "family" by Chinese people. (2) The closeness of family members is not considered. However, due to the availability of data, this paper can only distinguish between family members and non-family members, but cannot further identify the blood relationship between family members. Future research can further distinguish the relationship between family members in terms of variables to ensure the credibility of the empirical regression results. (3) From a dynamic perspective, does the "de-familization" of family firms have a more complex impact on other behaviors of family firms? Therefore, in the subsequent study, the impact of "de-familization" on the behavior of family firms can be further explored in terms of corporate strategy and long-term and short-term goals.

References

[1] Ai Fengyi, Liu Qianqian. The role of family influence on firm performance in the context of the "de-familization" controversy [J]. Social Scientist, 2013(10): 71-74.
[2] Allison, W, Pearson, et al. A Leadership Perspective of Reciprocal Stewardship in Family Firms [J]. Entrepreneurship Theory & Practice, 2017.
[3] Binacci M, Peruffo E, Oriani R, et al. Are All Non-Family Managers (NFMs) Equal? The Impact of NFM Characteristics and Diversity on Family Firm Performance [J]. Corporate Governance: An International Review, 2016.
[4] Cai Di, Luo Jinhui, Tang Guiyao. Family members' participation in management, institutional

ISSN 2616-5902 Vol. 5, Issue 3: 78-92, DOI: 10.25236/AJBM.2023.050313

environment and technological innovation [J]. Research Management, 2016, 37(04): 85-93.
[5] Cai Di, Luo Jinhui. Does CEO type affect the tax aggressiveness of family firms? [J]. Economic Management, 2015, 37(09): 63-72.
[6] Chen JL, Feng XJ, Li RQ. Does family business promote innovation or hinder it? --Controversy and integration [J]. Foreign Economics and Management, 2018, 40(04): 140-152.
[7] Chen J-L. A study on the interaction effect of family ownership and non-controlling state equity on firm performance - complementary or substitution effect [J]. China Industrial Economics, 2015(12): 99-114.
[8] Chen Ling, Wang Hao. Family involvement, political ties and institutional environment: the case of Chinese private enterprises [J]. Management World, 2013(10): 130-141.
[9] Chen Shihui, Wu Bingde, Dou Junsheng, Chen Ling. How do family relationships affect corporate innovation? --An examination of the "family power" in innovation [J]. Scientific Research, 2016, 34(05): 793-800.
[10] Chrisman J J, Chua J H, Steier L P. An Introduction to Theories of Family Business [J]. Journal of Business Venturing, 2003, 18(4): 441-448.
[11] Chu, S. Professional managers and the growth of family businesses [J]. Management World, 2002(04): 100-108+147.
[12] Chua J H, Chrisman J J, Sharma P. Succession and Nonsuccession Concerns of Family Firms and Agency Relationship with Nonfamily Managers [J]. Family Business Review, 2010, 16(2): 89-107.
[13] Dou Junsheng, Wu Saisai. A review and outlook of long-term orientation research in family firms [J]. Economic Management, 2019, 41(06): 194-208.
[14] Du Shanchong. The "non-family power" in innovation investment of family firms: a perspective of shareholder governance [J/OL]. Nankai Management Review: 1-21[2021-1125]. http: // kns. cnki. net/ kcms/ detail/12.1288.F.20210426.1309.006.html.
[15] Fei Xiaotong. The fertility system in rural China [M], Beijing: Peking University Press, 1998.
[16] Gómez-Mejía L. R., Haynes K. T., Jacobson K. J., et al. Socioemotional Wealth and Business Risks in Family-controlled Firms: Evidence from Spanish Olive Oil Mills [J]. Administrative Science Quarterly, 2007, 52(1).
[17] He Xiaogang, Li Jing, Zhang Yuanfei, Lian Yanling. Effective or ineffective shared governance of entrepreneurial families? -- An empirical study based on Chinese family-listed companies[J]. Management Review, 2016, 28(06): 150-161.
[18] He Xuan, Chen Wenting, and Li Xinchun. Empowering equity or pan-familialism: An empirical study of professional managerial governance in family firms[J]. China Industrial Economics, 2008(05): 109-119.
[19] He Xuan, Zhu Heng. Altruism, kinship rent-seeking and family business governance[J]. Foreign Economics and Management, 2008(09): 28-33.
[20] Jiang Fuxiu, Zheng Xiaojia, Cai Wenjing. The controlling family's "draping" and corporate financial decision-making[J]. Management World, 2017(03): 125-145.
[21] Joseph, H, Astrachan, et al. The F-PEC Scale of Family Influence: A Proposal for Solving the Family Business Definition Problem[J]. Family Business Review, 2002, 15(1): 45-58.
[22] Li Huan, Zheng Guangping, Xu Yongxin. Family business "de-familization" and firm value: empirical evidence from listed companies in China[J]. Financial Research, 2014(11): 127-141.
[23] Li Jian, Cui Xue, Chen Chuanming. Family firms' M&A goodwill, risk-taking level and innovation investment--a study based on signaling theory [J/OL]. Nankai Management Review:1-25 [2021-11-25]. http://kns.cnki.net/kcms/detail/12.1288.f.20210331.1731.013.html.
[24] Li XC, Han J, Li WW. Inheritance or creating a new territory? --Constructing the legitimacy of authority in the second generation of family business succession[J]. Management World, 2015(06): 110-124+187-188.
[25] Li XC, He SG, Zou LK. Family business research: theoretical progress and future prospects[J]. Management World, 2020, 36(11): 207-229.
[26] Li, Wei-Ning, Zhang, Yan-Yan, Lu, Yuan. Is longer involvement of second generation detrimental to innovation investment in family firms? [J]. Foreign Economics and Management, 2021, 43(08): 51-72.
[27] Liu X, Su CH, Shao HH. Do family director seat allocation preferences affect corporate investment efficiency [J]. Nankai Management Review, 2020, 23(04): 131-141.
[28] Lubatkin M, Schulze W S, Dino R N. Exploring the agency consequences of ownership dispersion among the directors of private family firms [J]. Post-Print, 2003.
[29] Luis, R, Gomez-Mejia, et al. Socioemotional Wealth as a Mixed Gamble: Revisiting Family Firm R&D Investments With the Behavioral Agency Model [J]. Entrepreneurship Theory & Practice, 2014.
[30] Morck R, Yeung B. Agency Problems in Large Family Business Groups [J]. Entrepreneurship

ISSN 2616-5902 Vol. 5, Issue 3: 78-92, DOI: 10.25236/AJBM.2023.050313

Theory and Practice, 2003.
[31] Ni T T, Wang Y T. Does VAT transformation promote corporate R&D investment? [J]. Scientology Research, 2018, 36(10): 1848-1856.
[32] Powell D, M W. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields [J]. American Sociological Review, 1983, 48(2): 147-160.
[33] Shan Mengmeng,Song Yunze. A study on the weakening mechanism of institutional environment on family business kinship governance - empirical evidence based on CEO change [J]. East China Economic Management, 2019, 33(12): 136-144.
[34] Sun Xiufeng,Zhang Wenlong,Feng Baojun. How "de-familization" affects corporate financing constraints--a study based on GEM family firm data [J]. Economic Management, 2021, 43(03): 145-160.
[35] Tan, Q. M., Liu, Z. X., Sun, Y. N. Does an increase in kinship altruism improve the governance efficiency of family firms? --Based on a firm life cycle perspective [J]. Forecasting, 2021, 40(03): 1-8.
[36] Wang M.L., Xu M.N., Wang H.S. Can altruistic behavior reduce agency costs? --An empirical study based on kinship altruism in family firms [J]. Economic Research, 2014, 49(03): 144-157.
[37] Wang Xiaolu, Fan Gang, Yu Jingwen. China marketization index report by provinces [M], Beijing: Social Science Literature Press, 2017.
[38] Wang, M.L., He, Q.Q. Are insiders more conservative in their innovation activities? --Empirical evidence from R&D investment of Chinese listed family firms [J]. Foreign Economics and Management, 2020, 42(12): 104-118.
[39] Wang, Teng-Yan, Jin-Yuan. Can de-familialization alleviate corporate financing constraints? [J]. Foreign Economics and Management, 2020, 42(06): 139-152.
[40] Wei, Chunyan, Chen, Lei. Altruistic behavior in the process of CEO replacement in family firms--a study based on asset impairment [J]. Management World, 2015(03): 137-150.
[41] Wu B.D., Chen L. Socio-emotional wealth and R&D portfolio:The impact of family governance[J]. Scientology Research, 2014, 32(08): 1233-1241.
[42] Wu, Chaopeng, Xue, Nanzhi, Zhang, Qi, and Wu, Sinong. Familyist culture, "de-familization" governance reform and firm performance [J]. Economic Research, 2019, 54(02): 182-198.
[43] Xu F. Bank credit and corporate innovation dilemma [J]. China Industrial Economy, 2019(01): 119-136.
[44] Xu Jin, Zheng Han, Zhao Tingting. Can "de-familization" of private enterprises promote corporate innovation [J]. Finance and Economics Science, 2019(09): 63-72.
[45] Xu Mengna, Zhou Shengchun. Research on agency problems and intergenerational transmission of family firms based on altruism perspective [J]. Foreign Economics and Management, 2008(07): 52-57.
[46] Xu Yupeng, Cheng Bo, Pan Fei. Does "male farming and female farming" affect corporate innovation: empirical evidence from Chinese family-listed companies [J]. Nankai Management Review, 2021, 24(01): 169-180+219-220.
[47] Yijie Min, Zhijun Chen, Rong Li. Family involvement and corporate technological innovation[J]. Foreign Economics and Management, 2016, 38(03): 86-98+112.
[48] Yu, X., Li, Y. P., Liu, G. How does "de-familization" affect family business strategies? --A dynamic analysis based on the perspective of cross-border mergers and acquisitions [J]. Management Review, 2020, 32(03): 238-251.
[49] Zhu Heng, Eric Kushins, Zhou Yinghui. Does socio-emotional wealth inhibit innovation investment in Chinese family firms? [J]. Management World, 2016(03): 99-114.
[50] Zhu Hongjun, Yu Liyong, Wang Hui. "Pan-family" or "paternalism"? --An analysis of the management model choice and economic consequences of Chinese private enterprises based on the case of Yagor and Malware [J]. Management World, 2007(02): 107-119.
[51] Zhu Jian'an, Chen Ling, Wu Bingde. Hiring relatives or hiring experts:A study of CEO hiring based on heterogeneity of holding family goals[J]. Foreign Economics and Management, 2016, 38(12): 3-18.