

Second generation characteristics and leverage ratio of family business

Yong Xia

School of Business, Nanjing Normal University, Nanjing, China
2411376008@qq.com

Abstract: *In the context of the wave of intergenerational inheritance, this paper studies the influence of the characteristics of the second generation on the leverage ratio of family firms based on the sample of family firms that realized intergenerational inheritance between 2008 and 2021. It is found that the second generation with economic management background is more inclined to equity financing, with lower leverage ratio. The second generation with overseas study background has a stronger preference for equity financing in external financing; The education level of the second generation has no significant influence on the leverage ratio of the family business. It is of great significance to train successors of family enterprises and construct reasonable capital structure.*

Keywords: *second generation characteristics; Economics and management background; Overseas study background; Leverage ratio*

1. Introduction

According to the 2021 statistics of Pricewaterhousecoopers, China's private enterprises are contributing more than 60% to China's GDP, and 85% of them are family enterprises. At present, the first-generation founders are gradually taking a back seat, and family businesses are experiencing the peak of inheritance^[1]. According to 2021 Global Family Business Survey -- China Report released by Pricewaterhousecoopers, 58% of family businesses regard inheritance as an extremely important goal or the most important goal in the next five years or longer. Therefore, the characteristics of the second generation play a significant role in enterprise management and business decisions, and are related to the survival and development of family businesses.

For family businesses, family members' participation in management is a unique way of corporate governance in family businesses. Moreover, the inheritance mode of family business in China is mainly "heirs to the father's business." With the continuous development of theories such as imprinting theory and high-ladder team, the relevant literature on the characteristics of the second generation of family business has gradually increased. After the succession of the second generation, the second generation with heterogeneous social resources is more inclined to integrate its heterogeneous resources with the social capital of the first generation to further promote family entrepreneurship, with stronger entrepreneurial motivation^[2], and with the experience of witnessing their parents' entrepreneurship in childhood, they will also conduct portfolio entrepreneurship^[3]. As an important business decision of an enterprise, innovation will also be affected by the characteristics of the second generation^{[4][5]}. The past experience of the second generation is the embodiment of the successor's thinking concept, logical thinking and cognitive level, and the business decisions made by the second generation heirs with different characteristics in the process of enterprise operation and management are also different. At present, most of the academic research on the characteristics of the second generation focuses on corporate innovation, entrepreneurship, diversification strategy and other fields, and has not yet studied the leverage ratio of family enterprises. This paper mainly analyzes the three characteristics of second-generation discipline background, second-generation overseas experience and second-generation education level, and analyzes the impact on the leverage ratio of family enterprises, and provides certain enlightenment for in-depth exploration of the internal factors affecting the leverage ratio of family enterprises and the succession plan of family enterprises.

2. Theoretical analysis and research hypotheses

According to the higher-order theory and imprinting theory, individuals' early learning, work

experience and life experience will affect their cognitive level and cognitive ideas. Therefore, the branding in different periods will have an impact on the behavior of enterprise managers, and the business decisions of enterprises are affected by the cognition and ideology of strategy makers^[6]. Influenced by China's economic development, there are huge differences between the founding generation and the second generation in terms of education level, growth environment, thinking mode and personal experience, which also makes their cognitive level and thinking concept quite different^[7]. This paper introduces three characteristic variables of the second generation, namely, the academic background of the second generation, the overseas experience of the second generation, the education level of the second generation and the personal characteristics of the second generation, to explore the changes in the capital structure of family firms before and after intergenerational inheritance.

2.1 Moderating effect of the disciplinary background of the second-generation successor

Higher order theory and imprinting theory believe that enterprise decision-making is the reflection of managers' cognitive level and values, and the formation of such managers' own cognitive level and values is affected by their disciplinary background^[8]. First of all, there are some differences in cognitive level, knowledge structure, business philosophy and way of thinking between those with economic and management background and those with science and engineering background^[9]. People with a science and engineering background generally have strong logical thinking ability^[10]. In the era of reform and opening up, which emphasized the rejuvenation of the country through science and technology, most founders started their own businesses by relying on their skills. However, the second-generation successors with liberal arts background in economics and management have stronger divergence in general thinking, deeper cognition of the operation of capital market and related knowledge of corporate financing, and relatively high control of the risk identification of various financing channels, so they are bolder in using external equity financing without changing family attributes. Therefore, compared with the second-generation successors with science and engineering background, the second-generation successors with economic and management background have greater differences in business philosophy and thinking mode from the founding generation who started out based on technology. Their emotional attachment to family businesses and the weakening of their original business philosophy identity are greater, which makes their demand for socioemotional wealth weakened to a greater extent. In addition, when making decisions related to capital structure, they may consider the reference point of socioemotional wealth protection less, which reduces the rejection degree of family firms to equity financing to a greater extent, and is more likely to increase the proportion of equity financing in the capital structure, so that the leverage ratio of family firms decreases. Secondly, the related resources of the economic management industry have certain circle characteristics, and the second-generation successors with the background of economic management can have access to better resources and social capital compared with the second-generation successors with the background of science and engineering, which helps to obtain high-quality resources at lower cost and further improves the willingness of equity financing. Based on the above analysis, this paper proposes the following hypotheses:

H1: Compared with the succession of the second-generation heirs with a science and engineering background, the leverage ratio of the second-generation heirs with a liberal arts background in economics and management is lower.

2.2 The moderating effect of overseas experience of second-generation heirs

According to imprint theory and advanced theory, experiences at different times will have an impact on the behavior of enterprise managers, which in turn affects the business decisions they make^{[11][12]}. In order to better adapt to the trend of economic development, more and more second-generation successors are sent abroad to study or work. These experiences directly affect the shaping of the cognitive basis and business philosophy of the second-generation, and thus affect the business decisions of enterprises^[13]. First of all, domestic training and overseas training are the two main modes of succession training in family enterprises. Domestic training enables second-generation heirs to contact the family business earlier, and it is easier to establish emotional attachment and identity to the family business^[10]. Compared with the domestic training, the second generation of the family with overseas experience is mostly deeply influenced by the social culture, ideological concepts and institutional environment of overseas countries. Through contact and learning of advanced overseas theories and management experience, they form a unique thinking mode. Moreover, there is a big cognitive difference between them and their parents, and it is difficult to understand the entrepreneurial

ideas and corporate culture of their parents. Their emotional attachment and sense of identity to the family business is more weakened, which in turn makes their need for social emotional wealth more diminished, and they are less likely to consider social emotional wealth goals in later economic decisions than second-generation successors without overseas experience. Based on the above analysis, this paper proposes the following hypotheses:

H2: Family firms with second-generation successors with overseas experience have lower leverage than second-generation successors without overseas experience.

2.3 The moderating effect of the education level of the second generation

According to higher-order theory and imprint theory, business decisions are also influenced by the cognition and ideology of their makers^[8]. Education plays a pivotal role in the formation of a person's personality, self-perception and three views, and for the successor of the family business, the higher the level of education, the higher the cognitive level, logical thinking ability and pattern. For family businesses, the more educated the second-generation successor is, the more likely they are to try new things and improve their strategic decision-making.

When family businesses make external financing decisions, the second generation has a lower level of education, may have weaker risk-taking and risk control capabilities, and is more inclined to accept the financing models and financing concepts of their parents, which in turn weakens social-emotional wealth less. Compared with the second generation with a lower education level, the second generation with a higher education level has a more thorough understanding of the capital market and a more open thinking concept. They are often not limited to the existing business operation model and existing financing model of their parents, but are more inclined to make more reasonable capital structure decisions to promote the improvement of the core competitiveness of enterprises. This would make it more socially emotionally weakened and less repulsive to equity financing, resulting in less leverage for more educated heirs to take over the business. Based on the above analysis, this paper proposes the following hypotheses:

H3: Family businesses with higher levels of education and successors have lower leverage than second-generation heirs with low levels of education.

3. Research design

3.1 Sample selection and data sources

This paper selects the annual observation data of the research sample of major holding listed companies used by A-share family enterprises in Shanghai and Shenzhen from 2008 to 2020, and draws on the practices of Anderson et al.^[14]; Liu Bailu et al.^[15] to define family business from the following three aspects: (1) the actual controller of the enterprise can eventually be traced back to a natural person or a family; (2) The founders or family members hold at least 10% of the shares in aggregate, and (3) At least two or more family members with kinship hold shares of the listed company or serve as executives (including chairmen, directors, senior management, etc.) of the listed family enterprise. In addition, the sample data was processed as follows: (1) ST and financial listed companies were excluded; (2) Exclude some data missing samples and outliers; (3) Exclude samples outside the family where actual control was transferred between 2008 and 2020. Considering the influence of outliers on the empirical results, the continuous variables were winsorize by 1% quantile. This article defines the realization of intergenerational inheritance as when the second-generation heirs of the family (including sons, daughters, daughters-in-law and sons-in-law and other relatives) serve as the chairman or general manager of the family business, and the intergenerational inheritance is considered to have been completed. Family businesses that have achieved intergenerational transmission were selected in all family business samples, resulting in the 2026 company-year observations.

The main financial data of the family business in this paper comes from the Guotai An database, and according to the relevant information on the characteristics of the second generation of the family business in the China Research Data Service Platform (CNRDS), the relevant information of the second generation heirs of the family business is manually sorted out and verified by media websites such as the annual reports of listed companies and Sina Finance. In this paper, Stata16 was used for data analysis, and in order to reduce the influence of extreme values, the main continuous variables were Winsorize at the level of 1% and 99%.

3.2 Variable Definition

(1) Main explanatory variables

Overseas means that if the second-generation heir of the family business has overseas study or work experience before taking over as chairman or general manager, this variable is 1, and no is 0; Second-generation academic background (Science) means that if the second-generation heir of the family business has a professional background in management, it is 1, otherwise it is 0; The second-generation education level (Education) indicates the level of second-generation education, the secondary school and below education is assigned to 1, the college degree is assigned to 2, the undergraduate degree is 3, the master's degree is 4, and the doctoral degree is 5.

(2) Control variables

Referring to the relevant existing research^[10], the control variables selected in this paper include company size (SIZE), profitability (ROA), enterprise value (TUOQ), growth (GROWTH), asset collateral ability (TAN), free cash flow (CRASH), board size (DIRNUMBER), proportion of independent directors (IOD), proportion of family members among senior management (FAM), and finally consider the differences between different years and different industries. It is controlled by industry dummy variables and year dummy variables.

3.3 Model settings

In order to examine the influence of second-generation overseas experience and second-generation economics and management background on the leverage ratio of family enterprises, this paper establishes a regression model by referring to the practice of Huang Haijie et al. (2018):

$$lev_{i,t} = \alpha_0 + \alpha_1 overseas_{i,t} / science_{i,t} / educate_{i,t} + \alpha_2 lnsize_{i,t} + \alpha_3 roa_{i,t} + \alpha_4 tuoq_{i,t} + \alpha_5 growth + \alpha_6 tan_{i,t} + \alpha_7 crash_{i,t} + \alpha_8 dirnumber_{i,t} + \alpha_9 iod_{i,t} + \alpha_{10} djgfam_{i,t} + \sum year + \sum industry + \epsilon_{i,t} \quad (1)$$

4. Empirical analysis

4.1 Descriptive statistics

The following table is the result of the statistical description of the main variables, from which it can be seen that the average value of the leverage ratio is 0.355, indicating that the average value of the leverage ratio of listed family enterprises in China is 0.355, the minimum value is 0.051, and the maximum value is 0.899, indicating that there are large differences in the capital structure of listed family enterprises in China, which is in line with the diversified market characteristics of China. In terms of explanatory variables, the mean value of science is 0.52, indicating that about 52% of second-generation heirs have a professional background in management; Overseas's average is 0.267, indicating that approximately 26.7% of second-generation heirs have overseas experience. The average education is 3.80116, indicating that most of the second-generation heirs have a bachelor's degree or above. As shown in Table 1:

Table 1: Descriptive statistics for primary variables (N=2026)

Variable	Quantity	Mean	Standard deviation	Minimum	Maximum
Science	2026	0.52142	0.48586	0	1
oversea	2026	0.26667	0.44233	0	1
Education	2026	3.40116	.903755	1	5

4.2 Analysis of empirical results

The table reports the impact of second-generation academic background, second-generation overseas experience and second-generation succession time on the leverage ratio of family businesses. As can be seen from the table, the coefficient of science is -0.0161, and the second-generation discipline background has a negative effect on the leverage ratio, and it is significantly negative at the significance level of 1%, indicating that the second-generation successor with a professional background in economics and management has a stronger willingness to equity financing than the second-generation successor with a science and engineering background, which promotes the decline

of the leverage ratio of the family business and the establishment of H1. The coefficient of overseas is -0.0171, and the second-generation overseas experience has a negative promotion effect on the leverage ratio of the family business, and it is significantly negative at the significance level of 1%, indicating that the second-generation successor with overseas experience is more likely to allow non-family shareholders to enter than the second-generation successor without overseas experience, which promotes the reduction of the leverage ratio of the family business and the establishment of H2. The coefficient of educate is 0.0014, and the second-generation education level has no inhibitory effect on the leverage ratio of the family business, but it is not significant at the significance level of 10%, mainly because the second-generation heirs of the family can learn certain knowledge and skills with the help of the currently developed information network and rich learning channels even if the education level is not so high, H3 is not established. As shown in Table 2:

Table 2: Reliability and validity test of each variable (N=2026)

	Lev(1)	Lev(2)	Lev(3)
Science	-0.0161***		
Oversea		-0.0171***	
Education			0.0014
Roa	-0.3198***	-0.3494***	-0.3831***
Tuop	-0.0091***	-0.0085***	-0.0088***
Growth	0.0064	0.0077	0.0075*
Lnsiz	0.0413***	0.0412***	0.0493***
Tan	-0.0066	-0.0061	-0.0193
Cash	-0.0246	-0.0129	-0.0220
Iod	0.0177*	0.0131	-0.0267
Dongfam	-0.01580	-0.0218	-0.0779
Dirnumber	-0.0032	-0.0027	-0.0087***
M2	0.4290***	0.4417***	0.3910***
Lnsf	0.0140	0.0141	0.0217
_cons	-0.2221***	-0.2219**	-0.3294***
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
Prob > F	0	0	0
R-squared	0.6580	0.6578	0.6562

***p<0.01, **p<0.05, *p<0.10

4.3 Endogenous test

In order to ensure the accuracy and robustness of the conclusions of this paper, this paper uses lagging first-stage variables to test robustness on the basis of existing research.

The intergenerational inheritance of a family business is essentially a change in the leverage ratio of the family business caused by a corresponding change in the position within the enterprise, and considering that the financing activities of the family business have a certain lag after the change of position. In order to ensure the robustness of the empirical results in this paper, this paper will explain the lag of variables by one period, and the data of the second generation as chairman or general manager lag of one period are used for testing, and the results obtained are still significant, and the conclusion of this paper is robust.

5. Conclusion

This paper sorts out the literature related to the characteristics of the second generation of family enterprises and business decision-making, and on this basis, the samples of listed family enterprises that have achieved intergenerational inheritance in China from 2008 to 2020 are selected to study the relationship between the characteristics of the second generation and the leverage ratio of family enterprises. The study found that second-generation personal characteristics affect the leverage ratio, that is, the financing structure of the family business. Compared with the second-generation heir with a science and engineering background, the leverage ratio of a family business with a second-generation heir with a background in economics, management and liberal arts is lower; Family businesses with second-generation heirs with overseas experience have lower leverage ratios than second-generation heirs with no overseas experience; Family businesses with higher levels of education and successors

with lower levels of education have lower leverage than second-generation heirs with low levels of education.

Based on the research conclusions of this paper, the following enlightenment is obtained: (1) Intergenerational inheritance will reshape the business philosophy and stakeholder relationship of family businesses. This paper shows that the characteristics of the second generation after intergenerational inheritance affect their willingness to raise equity. Under the premise of ensuring family control, the introduction of external resources can not only obtain external funds at a lower cost, but also obtain more external high-quality resources required for enterprise development, which will help enterprises improve their core competitiveness. (2) The successor training model will affect the successor's cognitive level and thinking mode, which is conducive to more reasonable external financing decisions. From the perspective of optimizing the capital structure, the training method with management background and overseas experience is more effective.

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