

The Impact of Intergenerational Succession on the Overseas Business Performance of Family Firms

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Abstract: With the first batch of Chinese family entrepreneurs ages, family businesses are at the peak of intergenerational succession. As a significant event leading to the adjustment of firm governance structure, intergenerational succession has an impact on overseas business performance. To explore this impact, this paper takes family firms listed in China from 2009 to 2020 as the observation objects and establishes a multi-period difference-in-difference (DID) model. Regression result indicates that intergenerational succession has a negative impact on overseas business performance. This paper further discusses the influencing mechanism by exploring the moderating effect of the education level and the mediating effect of innovation investment. The results confirm that the educational attainment of successors plays a negative moderating role, and the mediating effect of innovation investment exists.

1. Introduction

With the increasing integration of the global economy, plenty of family firms from China have entered the global market to seek more development opportunities. Meanwhile, family firms have entered a high occurrence period of intergenerational inheritance as the first batch of Chinese family entrepreneurs grow old^[1]. Compared with their parents, the successors who grew up in the context of China's in-depth participation in globalization have a broader international vision and multicultural identity. However, the socioemotional wealth theory indicates that economic benefits are not the only goal pursued by family firms. Managers are willing to sacrifice partial economic benefits to protect socioemotional wealth within the family^[2].

Recently, due to the frequent occurrence of intergenerational succession, research related to intergenerational succession has increased significantly. However, there are few scholars exploring the impact of intergenerational succession on overseas business performance. As an inevitable problem in the growth and development of family firms, intergenerational inheritance plays a vital role in the future development strategy. Systematic research on the impact of intergenerational succession on the performance of family business overseas has become a topic worthy of attention.

In order to analyze the effect of intergenerational inheritance on overseas business performance of family firms, this paper constructs a multi-period DID model. In the exploration of the influencing mechanism, the moderating effect of the successors' education level and the mediating effect of innovation investment are further tested. Lastly, robustness test and heterogeneity analysis are carried out.

2. Literature review

2.1 The impact of intergenerational inheritance on family business overseas performance

Past research related to intergenerational inheritance mainly focuses on innovation decisions of

family firms^{[3][4]}, strategic change^[5], training model for successors^[6], and identification of inheritance elements^{[7][8]}. Literatures related to the impact on overseas performance are limited.

As the cornerstone of theoretical development in the field of family business research, socioemotional wealth theory indicates that the unique goal of family business is to protect socioemotional wealth^[2]. On the one hand, intergenerational inheritance as a key link in the sustainable development of family firms reflects the desire of sustainable development of family firms. It guides family firms to protect extended socioemotional wealth^[9]. To maintain extended socioemotional wealth, family firms prefer long-term oriented strategies^[10]. In the context of the increasingly integrated world economy, the implementation of internationalization is inevitable for family firms expecting long-term development. On the other hand, economic benefits are not the primary goals family firms pursue due to the strong desire to retain socioemotional wealth. They are willing to sacrifice some economic benefits to protect the emotional wealth^[2].

In addition, China implemented the one-child policy in 1980. In this context, the successors who grow up are mostly the only son or daughter in the family, and the expectations of the parents for the successors have declined. This may lead to a decline in the ability of successors compared to their parents. Previous studies have shown that intergenerational inheritance has a negative impact on firm value^[11]. Caselli and Gennaioli points out that the decline of family firm value comes from the lack of management experience of successors and the ineffective selection process of successors^[12]. Therefore, this paper proposes the following assumption:

H1: Intergenerational succession of family firms has a significant negative influence on their short-term and long-term overseas business performance.

2.2 Moderating effects of educational attainment

A large number of previous studies have shown that the educational level of managers plays a positive role in promoting enterprise performance. Sun et al. found that managers with higher education have strong resilience and learning ability, and the performance of firms is more excellent. For overseas business after succession, the successor of learning ability and risk response ability also plays a vital role^[13]. Referring to previous research, this paper proposes the following assumption:

H2: Successors who receive a higher level of education have a weaker negative effect on overseas business performance.

2.3 Mediating effect of innovation investment

Intergenerational inheritance reflects the vision for the sustained development and manifests retention of extended socioemotional wealth. Combined with the myopic loss aversion and socioemotional wealth theory, Zhu et al. confirmed the role of extended social wealth in promoting enterprise innovation investment^[3]. Huang et al. confirmed the positive role of successors' participation in enterprise innovation^[14].

Meanwhile, Connolly pointed out that there was a significant positive correlation between the intensity of R&D investment and the productivity of firms^[15]. The improvement of enterprise productivity can effectively promote the growth of income. Therefore, this paper proposes the following assumption:

H3: By increasing innovation investment, intergenerational inheritance can effectively reduce the negative impact of intergenerational inheritance on overseas business performance.

3. Design of measurement models

3.1 Data source

This paper selects A-share listed family firms from 2009 to 2020 as the research object. Data derived from CSMAR, CNRDS, and Wind databases. The definition of family firms refers to the research of Zhu et al. and the definition in CNRDS database^[4]. The Chinese listed family firms that have undergone intergenerational succession before 2020 are regarded as the experimental group, while others are classified as the control group. Finally, 1072 research objects and 7279 observations

were obtained, including 4591 observations in the control group and 2688 observations in the experimental group.

3.2 Measurement model design

The premise of multi-period DID is that the control group and the experimental group meet the common trend before inheritance. In order to verify this hypothesis, the following econometric model is designed according to Beck et al. ^[16]:

$$\ln OBP_{it} = a + \sum_{j=-6}^{10} b_j inherit_{i,t+j} + \beta \Sigma Z_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (1)$$

$inherit_{i,t+j}$ represents the event of intergenerational inheritance. If the firm i occurred intergenerational inheritance in the year $t+j$, $inherit_{i,t+j}$ is equal to 1, otherwise 0. In order to impair multicollinearity, $j=-10,-9,-8,-7$ is merged into $j=-6$.

To explore the influence of intergenerational inheritance on the overseas business performance, this paper adopts multi-period DID model. Referring to the measurement model of Beck et al., the following multi-period DID model is constructed^[16]:

$$\ln OBP_{it} = \alpha_0 + \alpha_1 inherit_{it} + \beta \Sigma Z_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (2)$$

In model (2), i represents the firm, t represents the year. $\ln OBP_{it}$ is the natural logarithm of the overseas business performance of firm i in year t . $inherit_{it}$ represents a dummy variable of intergenerational inheritance. ΣZ_{it} represents control variables varying with individuals and time. μ_i and δ_t represent individual and time fixed effect, respectively. ε_{it} is random error term.

However, model (2) can only reflect the variations in the current overseas performance. Model (3) is established to explore whether the impact is lagging:

$$\ln OBP_{i,t+2} = \alpha_0 + \alpha_1 inherit_{it} + \beta \Sigma Z_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (3)$$

To further explain the moderating effect of successors' education level, this paper constructs the model (4):

$$\ln OBP_{it} = \alpha_0 + \alpha_1 inherit_{it} + \alpha_2 inherit_{it} * edu_i + \beta \Sigma Z_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (4)$$

The variable $inherit_{it} * edu_i$ is the interaction between intergenerational inheritance and successors' education level. Its coefficient α_2 reflects the direction and intensity of the moderating effect.

This paper uses hierarchical regression to test the mediating effect of innovation investment. The first step regression is realized by model (2). The second and third step regression models are designed as follows:

$$\ln RD_{it} = \vartheta_0 + \vartheta_1 inherit_{it} + \vartheta \Sigma Z_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (5)$$

$$\ln OBP_{it} = \gamma_0 + \gamma_1 inherit_{it} + \varphi \ln RD_{it} + \gamma \Sigma Z_{it} + \mu_i + \delta_t + \varepsilon_{it} \quad (6)$$

In Model (2), α_1 measures the impact of intergenerational succession on overseas business performance without considering R&D investment. In model (5), ϑ_1 measures the impact of inheritance on R&D investment. In model (6), γ_1 measures the impact of inheritance on overseas performance when considering R&D investment, and φ measures the influence of R&D investment on overseas performance when intergenerational inheritance is considered.

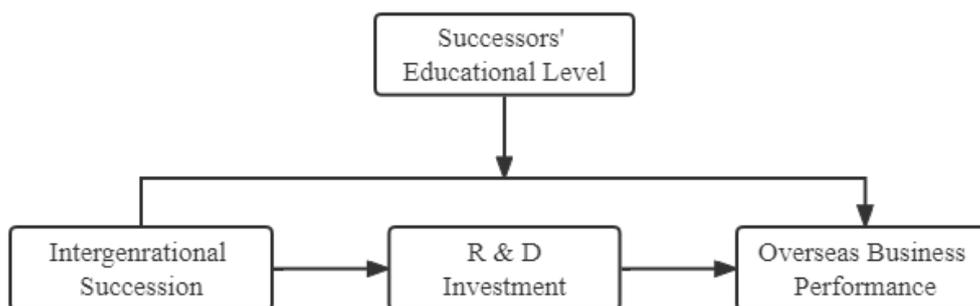


Fig. 1 Theoretical frame diagram

3.3 Variable selection

Dependent variable:

Referring to the setting of Dau, this paper selects the natural logarithm of firm overseas business income as an indicator to measure firm overseas business performance^[17].

Independent variables:

A dummy variable is set to indicate whether the successors will succeed the chairman, CEO or general manager of the family firms.

Moderator variables:

This paper selects the education attainment of the successors as the moderator variable. The education attainment of the successors not only determines the executives' personal vision, but also affects the future development strategy of firms.

Mediator variable:

Some scholars revealed that intergenerational inheritance will affect enterprise innovation decisions^[3-4] [18]. Therefore, this paper takes R&D investment as an intermediary variable, which is measured by the natural logarithm of the amount of R&D investment.

Control variables:

This paper selects operation period, scale, asset-liability ratio, return on assets, firm growth, duality, and board size as control variables.

The definitions and measurements of major variables are shown in table 1:

Table 1 Variables and Measurement

Variables	Label	Measurement
Overseas Business Performance	ln OBP	Natural logarithm of family business income abroad
Intergenerational Succession	inherit	0 before the completion of intergenerational succession, 1 in the current and subsequent years
Education Level of Successors	edu	Technical secondary school = 1, junior college = 2, high school = 3, undergraduate = 4, master = 5, doctor = 6
R & D Investment	ln RD	The natural logarithm of R & D investment amount
Age	ComYear	ln (current year - established year)
Size	Size	ln (total assets)
Asset-liability Ratio	LEV	LEV = total liabilities / total assets
Return on Assets	ROA	ROA = net profit / total assets
Growth	growth	Operating income growth rate
Dual Role of the Board Chairman	Dual	Dual = 1 when CEO and chairman is the same person, otherwise 0
Board Size	BoardSize	Number of Board members

Table 2 is the descriptive statistical results of the main variables. This paper also carried on the correlation test. The results show that the variance expansion factor is less than 10, indicating that the regression model does not exist severe multi-collinearity.

Table 2 Descriptive Statistic

VARIABLES	N	MEAN	SD	MIN	MAX
inherit	7,279	0.313	0.464	0	1
LEV	7,279	0.370	0.186	0.0508	0.906
ROA	7,279	0.0398	0.0749	-0.356	0.211
growth	7,279	0.221	0.538	-0.660	4.108
Dual	7,279	0.415	0.493	0	1
BoardSize	7,279	9.017	2.505	4	17
ComYear	7,279	2.706	0.409	0	3.689
Size	7,279	21.82	1.043	19.37	25.01
ln OBP	7,279	18.81	2.132	12.36	22.91
edu	2,569	4.282	1.028	1	6
ln RD	7,279	17.82	1.219	14.59	21.24

4. Empirical results and analysis

4.1 Parallel trend test

Figure 2 shows the result of the parallel trend test, indicating that there is no significant difference between the experimental group and the control group before intergenerational inheritance occurs. The parallel trend assumption is satisfied.

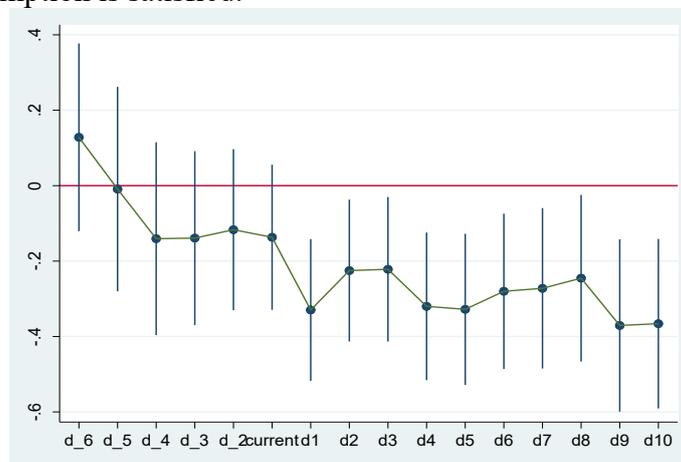


Fig. 2 Parallel trend test

4.2 Fundamental regression results

On the basis of the above analysis, this paper selects the two-way fixed effect model to analyze the impact of intergenerational succession on the overseas business performance. Table 3 shows regression results of model 1. Column 1 and column 2 are the results of the multi-period DID model without and with considering control variables, respectively. The results show that intergenerational inheritance has a negative impact on overseas business income.

Table 3 Fundamental Regression Results

VARIABLES	ln OBP	ln OBP
inherit	-0.256*** (0.073)	-0.173** (0.069)
Size		0.698*** (0.031)
LEV		0.420*** (0.120)
ROA		0.786*** (0.189)
growth		-0.080** (0.025)
Dual		-0.049 (0.036)
BoardSize		-0.011** (0.006)
ComYear		0.440*** (0.122)
Constant	18.89*** (0.0251)	2.391*** (0.713)
Year	YES	YES
Firm	YES	YES
Observations	7,279	7,279
R-squared	0.849	0.865

Note. N = 7,279. *p < .10. **p < .05. ***p < .01.

To confirm whether the influence of intergenerational inheritance on firms is lagging, model 2 is adopted. The absolute value of regression coefficient of two lag periods is less than that of current period. It seems that the negative impact decreased in the second period after inheritance. Hypothesis 1 is verified.

Table 4 Regression Results of two lag periods

VARIABLES	ln OBP2	ln OBP2
inherit	-0.205** (0.086)	-0.153* (0.084)
Size		0.308*** (0.035)
LEV		0.204 (0.137)
ROA		-0.527*** (0.194)
growth		-0.164*** (0.028)
Dual		-0.104** (0.041)
BoardSize		-0.001 (0.006)
ComYear		1.024*** (0.214)
Constant	18.89*** (0.030)	9.287*** (0.929)
Control		YES
Year	YES	YES
Firm	YES	YES
Observations	4,972	4,972
R-squared	0.875	0.880

Note. N = 7,279. *p < .10. **p < .05. ***p < .01.

4.3 Influencing Mechanism Analysis

4.3.1 The moderating effect of educational level of successors

In order to explore whether hypothesis 2 is valid, this study introduces the intersection of the successors' education level and intergenerational inheritance on the basis of model 1. The results reported in table 5 show that inheritance coefficient is negative and the coefficient of interaction term is positive. It points out that educational attainment has a reverse adjustment effect. In other words, the occurrence of intergenerational succession reduces the overseas business performance of firms. Remaining other conditions fixed, the higher the education level of the successors is, the smaller the performance decline. Hypothesis 2 holds.

Table 5 Moderating Effect of Educational Attainment

VARIABLES	ln OBP	ln OBP
inherit	-1.073*** (0.414)	-1.164*** (0.390)
inherit *edu	0.209** (0.092)	0.245*** (0.087)
Constant	18.95*** (0.069)	0.768 (1.228)
Control		YES
Year	YES	YES
Firm	YES	YES
Observations	2,569	2,569
R-squared	0.858	0.875

Note. N = 7,279. *p < .10. **p < .05. ***p < .01.

4.3.2 The mediating effect of innovation investment

Table 6 reports the results of hierarchical regression. Column 1 reports the direct effect of intergenerational inheritance on overseas business performance without considering the innovation investment. Column 2 reports the impact of intergenerational inheritance on innovation investment. Column 3 reports the impact of intergenerational inheritance on overseas performance when considering innovation investment. According to table 6, ϑ_1 and φ were positive, γ_1 was negative. These coefficients show that the succession is beneficial to improving the R&D investment intensity of family firms. Meanwhile, the intensity of innovation investment can promote the growth of overseas business income, which means that inheritance can indirectly improve the overseas performance through innovation investment, and offset partial direct negative effects of intergenerational inheritance. Hypothesis 3 holds.

Table 6 The mediating effect of innovation investment

VARIABLES	ln OBP	ln RD	ln OBP
inherit	-0.173** (0.069)	0.068** (0.034)	-0.190*** (0.069)
ln RD			0.254*** (0.025)
Constant	2.391*** (0.713)	0.712** (0.355)	2.210*** (0.707)
Control	YES	YES	YES
Year	YES	YES	YES
Firm	YES	YES	YES
Observations	7279	7279	7279
R-squared	0.865	0.897	0.867

Note. N = 7,279. *p < .10. **p < .05. ***p < .01.

4.4 Robustness test and heterogeneity analysis

4.4.1 Placebo test

In order to enhance the credibility of the empirical results, this paper conducted a placebo test. Figure 3 shows the test results. The regression coefficient of random sampling basically obeys normal distribution, and the fundamental regression coefficient is located on the left side of the distribution of the regression coefficient of the 'pseudo' experimental group. The results confirm the uniqueness of the impact of real intergenerational inheritance time point on overseas market revenue, and also prove the robustness of the conclusions.

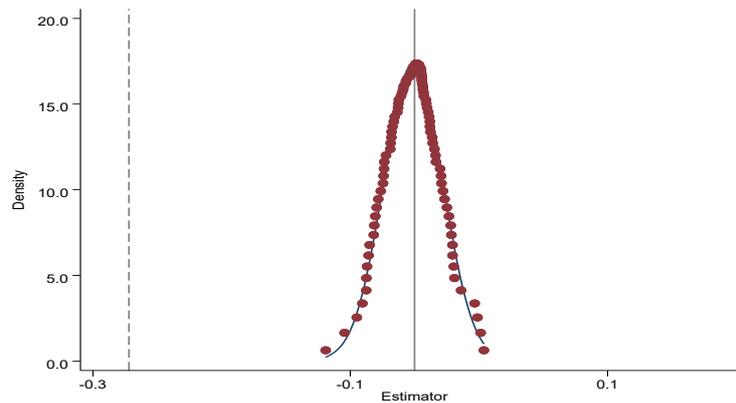


Fig. 3 Placebo test

4.4.2 Heterogeneity analysis

Table 7 reports the results of firms with different operation periods. Column 1, 2 and 3 represent the youth, the prime age and the elderly groups respectively. The succession in the firms of the prime age group and the elderly group have a negative impact as the fundamental regression results. However, inheritance in youth firms has no significant impact on overseas business performance.

Table 7 Heterogeneity Analysis

VARIABLES	lnOBP	lnOBP	lnOBP
inherit	0.00463 (0.128)	-0.325*** (0.105)	-0.210** (0.0850)
Size	0.773*** (0.0675)	0.652*** (0.0771)	0.661*** (0.0824)
LEV	0.266 (0.292)	0.812*** (0.252)	0.269 (0.239)
ROA	0.668 (0.407)	1.092** (0.469)	0.599 (0.367)
growth	-0.0392 (0.0580)	-0.132* (0.0792)	-0.0680 (0.0619)
Dual	-0.0549 (0.0693)	-0.0977 (0.0658)	-0.0520 (0.0669)
BoardSize	0.0102 (0.0108)	-0.0156 (0.0102)	-0.0269*** (0.01000)
Constant	1.798 (1.425)	4.569*** (1.677)	4.556** (1.772)
Year	YES	YES	YES
Firm	YES	YES	YES
Observations	2,425	2,404	2,425
R-squared	0.840	0.868	0.888

Note. N = 7,279. *p < .10. **p < .05. ***p < .01.

5. Summary

This study takes the A-listed family firms in China from 2009 to 2020 as the observation object to explore the impact of intergenerational succession on overseas business performance. Through the construction of multi-period DID model and empirical analysis, the following conclusions are drawn:

Firstly, intergenerational succession of family firms has a negative impact on short-term and long-term overseas business performance. After the succession is completed, the overseas business performance will decline significantly, and this change will last for a period of time.

Secondly, successors with higher education have a weaker negative impact on overseas business performance. The education attainment of the successors plays a negative moderating role.

Finally, firms can effectively reduce the negative impact of intergenerational inheritance on overseas business performance by increasing innovation investment. The regression results confirm the mediating effect of innovation investment. Intergenerational succession can indirectly promote the increase of overseas business income by affecting the intensity of R&D investment, and offset some of the negative impacts of succession on overseas business performance.

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