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## Founder Overconfidence and Intergenerational Succession of Family Firms: A Case Study of Fuyao Glass

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# **Founder Overconfidence and Intergenerational Succession of Family Firms: A Case Study of Fuyao Glass**

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## **Abstract**

In the succession of family firms, the choice of successor—between family members with blood ties and professional managers—is a key issue. The characteristic of overconfidence commonly found in entrepreneurs can significantly impact successor decision-making on the intergenerational succession of family firms. This study examined the choice of successors in family firm succession from the perspective of founder overconfidence. The specific case of Fuyao Glass was used to study the relation between founder overconfidence, choice in family firm succession, and succession performance. This case study utilizes a mixed-method approach, incorporating qualitative and quantitative data from Fuyao Glass's financial records and information on senior managers' changes and résumés. Although the implementation of Fuyao Glass's succession plan did not have a significant impact on the company's operational performance, the resignation of the founder of the family firm and, later, of his successor, led to a sudden drop in the firm's Tobin's Q. Thus, market investors recognized the positive impact of the founder, Dewang Cao, and his eldest son, Hui Cao, on the development potential of the firm. The succession of family successors, as in Fuyao Glass, may tend to occur during the stable operation of the firm rather than during a major industrial

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adjustment period. Fuyao Glass's succession plan can be used as reference by other family firms with similar needs for succession during the establishment of succession plans.

**Key words:** Family Firms; Intergenerational Succession; Founder; Overconfidence

## 1. Introduction

The private sector is an important achievement in the development of China's economy. The numbers "5, 6, 7, 8, 9" are broadly used to describe the prominent position of the private sector: the private sector contributes more than 50% of China's tax revenue, more than 60% of the GDP, more than 70% of technological innovation achievements, and more than 80% of urban employment. Moreover, the number of private enterprises accounts for 90% of the total number of enterprises. In the early stage of entrepreneurship, Chinese private enterprises often face the challenges of capital restriction and resource insufficiency in terms of management, information, and technology. Family-run enterprises effectively make up for this deficiency by relying on internal family resources. Family firms are created when entrepreneurs decide to introduce kinship to the management position of successor enterprises and pass the control down through kinship (Mehrotra & Morck, 2013). Our study focused on the Chinese family firm, defined by Zhu (2004) as a business form where the entrepreneurs or successor families jointly hold controlling rights and the family ownership can be legally passed down within the family under normal circumstances.

The intergenerational succession of Chinese family firms needs to be properly examined. Since China's reform and opening-up, entrepreneur-led family firms have become the most dynamic development force in China, greatly contributing to the long-term stable growth of the country's GDP. At present, the first batch of successful Chinese entrepreneurs are reaching the age of 50–70 years, and this generation of founders who have achieved great success are undergoing a critical point of family wealth succession. In the next ten years, more than 3 million "founding-generation" entrepreneurs will reach the retirement age in China (Wang et al., 2021). A key issue in the succession of family firms is in the selection of successors—between family members with blood ties and professional managers. Designing effective succession plans is also a challenge faced by Chinese family firms. Kellermanns and Eddleston (2006) noted that entrepreneurs are motivated by the desire to build their personal empire, and the entrepreneurial spirit is crucial for the success of family firms. The founding-generation entrepreneurs in China have a strong motivation to maintain

their wealth through family firm succession based on successor entrepreneurial achievements. However, family firms would face uncertainties in long-term development, given that intergenerational succession is highly uncertain. Indeed, few family firms survive beyond the second generation, let alone the third generation or beyond (Davis & Harveston, 1998). Although hiring professional managers has its advantages, Chinese family firms tend to choose family members as successors owing to strong traditional concepts (Lu et al., 2021). In addition, given China's social environment, legal environment, and culture, the professionalization of management has been slow (He et al., 2019). Chinese family firms may or may not effectively make succession choices to solidify successor development. Thus, research on the succession plans of Chinese family firms is essential, particularly for the development of China's economy and of Chinese enterprises.

The intergenerational succession of family firms represents an important area in academic research. De Massis and Foss (2018) pointed out that a micro-foundation approach is not only necessary but also potentially the most effective for the analysis of the succession plans of family firms. Intergenerational succession within the family is a continual process, not a simple handover incident (Chen et al., 2017). The first-generation management plays a crucial role in the long-term dynamic processes, and the founders' personal characteristics, including religious beliefs (Shen & Su, 2017), personal cognition (Lu et al., 2021), and age (Hui & Xu, 2016), deeply impact the succession plans and subsequent successor implementation. Lu et al. (2021) found that family members, rather than professional managers, are likely to be chosen as successors in family firms when CEOs are more conservative.

For Chinese family firms, founders have a prominent influence on intergenerational succession plans. The essence of traditional Chinese family culture determines the core of family firms as family-centered and family authority (Wang, 2005). For founders of Chinese family firms, the concepts of "one of us" and "outsider" are deeply differentiated and indelibly etched in successor values. Moreover, the concept of the family may lead founders to prioritize family interests above enterprise interests, which could shape the choices related to intergenerational succession that could

harm the long-term development of family firms. As emphasized by Li (2003), Chinese family firms may realize great development only after eliminating their long-standing practice of favoritism.

Founders of family firms play a central role in making important decisions on the selection of successors (Lu et al., 2021; Hui & Xu, 2016; Zhu, 2004). However, the founders' specific selection involves rational and emotional factors and may even be influenced by psychological biases. For instance, founders often adopt irrational behaviors that harm themselves and the firms owing to psychological biases, such as overconfidence. The study of founder overconfidence is of importance to intergenerational succession and succession performance. However, the literature is limited on the impact of personal characteristics of founders, especially overconfidence commonly seen in entrepreneurs (Moskowitz & Vissing-Jørgensen, 2002), on the choice of intergenerational successor in family firms and succession performance. We intended to fill this gap.

We analyzed founder overconfidence, successor choice in family firm succession, and succession performance with a case study of Fuyao Glass. The founder, Dewang Cao, being deeply influenced by traditional family values, believes that his eldest son, Hui Cao, should take over the family business. Dewang Cao holds a high recognition of his own abilities and high confidence in the abilities of his family members. Notably, Fuyao Glass is not subject to state-owned shareholding. Therefore, the succession plan adopted by Fuyao Glass is representative of the practical succession plan of a traditional Chinese family enterprise that focuses on the cultivation of the eldest son as the core management to be supported by non-family member senior management personnel. In the present composition of the management of Fuyao Glass after succession, Dewang Cao continues to serve as the chairman, whereas Hui Cao serves as the vice chairman and executive director. A manager who has been internally cultivated serves as the general manager. This setup not only satisfies the motivation of achieving the long-term development of the family firm but also fulfills the individual motivation of realizing personal achievements.

The implementation of this succession plan by Fuyao Glass had no significant impact on its operating performance. However, its Tobin's Q recorded a sudden drop with the resignation of

Dewang Cao and, later, Hui Cao, indicating that stock investors recognized the positive impact of both the founder and successor on the future prospects of the firm. With respect to the firm's development path, the needs for innovation did not change significantly from 2000 to 2021. Regarding the needs for industrial expansion, the corporate policies of Fuyao Glass changed and capital investment was made before the takeover of Hui Cao. We demonstrated that succession within the family typically occurs during the stable operation of a firm rather than during a major industrial adjustment period. Our findings coincide with previous empirical results, thereby enriching the current literature on succession in family firms.

## **2. Literature Review**

Research has examined the factors to the successful completion of intergenerational succession and building of competitive advantages (Chen et al., 2017). Intergenerational succession in family firms is not a simple power transition within the management of the family firms but a major decision that relates to the future development and even survival of the firm (Dou & Jia, 2008). Based on relevant theories of organizational behavior and sociology, Song et al. (2008) concluded that the intergenerational succession of family firms is rich in content with a profound impact and encompasses comprehensive succession in terms of capability, capital, power, and culture.

### **2.1 Intergenerational Succession of Family Firms and Determining Factors**

The current literature focuses on the determining factors for the choice of successor in the intergenerational succession of family firms as well as its dynamic realization. The core issue lies in the selection of successors between family members with blood ties and professional managers. The choice of family members with blood ties has rational economic motivations. Chao (2002) asserted that the motivation for succession within the family mainly comes from the emotional cohesion, non-separation of ownership and control, absolute authority and leadership of the founder, as well as other unique operational advantages of family firms. Bjuggren and Sund (2002), based on



transaction costs theory, argued that the knowledge acquired by successors through observation and imitation could reduce the transaction costs during the internal transfer of family firms, and the special competitive advantages of family firms would disappear when the firms go bankrupt or are sold to a third party. Gomez-Mejia et al. (2007) developed the socioemotional wealth theory: family firms, unlike other firms, prioritize non-economic objectives over economic ones; the non-economic utilities include the ability to exercise power, sense of belonging, and satisfaction of emotional and intimacy needs. The reason family firms do not absorb external professional managers is that they are more willing to maintain the control of and succession in the firm. Non-economic motivations are also involved in the completion of intergenerational succession, such as emotional motivation. Xu and Hui (2013) suggested that the business objectives of family firms include the maximization of shareholders' value and pursuit for emotional value, such as the sense of belonging to the family, family's common values, social identity, and the realization of family authority. Emotional motivations also promote the increase of economic interests, and the maintenance and continuity of family emotional values can effectively secure the long-term operation of family firms.

The choice of professional managers over family-member successors also has rational economic motivations. Competent professional managers can facilitate the smooth transition of control from the founders of family firms (Chu, 2002). Based on research on family firms and professional managers, Hiebl and Li (2020) concluded that the professional knowledge and experience of professional managers could improve the management efficiency of family firms and enable the latter to better cope with industrial competition and operational challenges. However, Chinese family firms face high risks when making managers as successors owing to the inadequate efficiency of the managers' labor market and absence of relevant regulations. Chu (2002) reported that the development bottleneck of Chinese family firms is not the availability of financial capital but the failure to effectively absorb and internalize new management as stable human capital resources with the potential to become successors. On the one hand, China lacks a qualified professional manager labor market; on the other hand, China's institutional regulation is inefficient.

The information asymmetry between family firms and managers also negatively affects the performance of professional managers. Moreover, the introduction of professional managers to family firms is likely to fail with the absence of trust between family firms and professional managers (Li, 2003). Particularly, when the cost for the conversion of managers to entrepreneurs is extremely high, the professional manager market will become tremendously unstable, which will bring risks to the decision-making of family firms on external managers. An acceptable alternative is a compromised governance, in which firm control is shared by the external managers and the family to reduce the agency problem between external managers and family firms. Zhang (2001, 2003) discussed the absence and establishment of trust between founder entrepreneurs and external managers, drawing insights from the concepts of the feudal and county systems in ancient China. He et al. (2014) explored the feasibility of integrating external professional managers into the family by means of pan-familism, establishing a certain foundation of trust, and then realizing the sufficient arrangements of succession of professional managers through managers' shareholding.

Thus, succession within the family and succession by professional managers each have their own advantages, and the founders of family firms play a central role in deciding on the choice of successors. Gagne et al. (2021) explored the motivations for intergenerational succession through a 12-year longitudinal study of 89 Canadian family firms. Their successor research indicated that the choice of successor is closely related to the founders' trust in the successors' ability and intentions, and such trust enables the successors to gain more opportunities to work autonomously. Traditional concepts and religious beliefs make founders more inclined to complete intergenerational succession within the family. Lu et al. (2021) stated that traditional concepts of the management of family firms significantly impact the choice of successor, based on upper echelons theory. In other words, founder CEOs with stronger traditional concepts are more inclined to choose family members as successors. Shen and Su (2017) provided empirical evidence that religious beliefs significantly impact the founders' choice of successors. When founders have Eastern religious beliefs, such as Buddhism, family firms tend to adopt succession within the family. Meanwhile, founders' personal cognition

and experience may lead to abandonment of succession within the family. He et al. (2014) found that a considerable proportion of family firms do not want to sustain family control, and they actively give up family succession. This transformation arises from founders' pessimistic perception of the external institutional environment, which can be reduced by founders' political status. Cao et al. (2015) accounted for China's unique one-child policy in their analysis and concluded that this policy has led to a serious shortage of human capital in family firms. When making succession decisions, founders of family firms have few options, which affects the stability of family succession.

In summary, the literature suggests that the founder of a family firm plays a central role in making important decisions on the choice of successors. The founder's decision is influenced by not only judgment based on economic motivations but also behavioral biases, which are in turn informed by the founder's concepts and cognition, and macro factors, including the external institutional environment. Meanwhile, no study has examined the impact of founder overconfidence on the decision-making regarding the intergenerational succession of family firms. We aimed to fill this literature gap and review the impacts of the psychological factor of founder overconfidence on the decision-making related to the intergenerational succession of family firms.

## **2.2 Intergenerational Succession of Family Firms and Corporate Performance**

Corporate performance is the most direct manifestation of the success or failure of the intergenerational succession of family firms. Research suggests that succession within the family is not inherently superior compared with other succession types. In other words, intergenerational succession in the family does not necessarily have a positive impact on the performance of family firms after succession. Based on samples of Italian firms, Cucculelli and Micucci (2008) explored the impact of succession to the current CEOs on the corporate operation of family firms. They concluded that the family firm structure does not have inherent superiority, noting that succession within the family had a negative impact on corporate performance.

Nonetheless, family firms can be successfully passed down and realize long-term sustainable and stable development, as seen in cases of founders of family firms choosing family members with family-specific assets as successors. A prerequisite is that the succession of family authority is effectively implemented. Wang et al. (2021) built a theoretical model of the generation and iteration of entrepreneurial schemata for family firm successors based on imprinting theory. This model helps elucidate the entrepreneurial thinking and actions of family successors. Chen and Ying (2003) highlighted the many factors that complicate the succession of management in intergenerational succession. Family firms are reliant on not only the superiority of the enterprise system but also the recognition of excellent entrepreneurial qualities and abilities, which are irreplaceable. Yu et al. (2013) indicated that the transfer of entrepreneurs' tacit knowledge is crucial for the success of intergenerational succession. This tacit knowledge encompasses management abilities represented by excellent qualities, such as integrity and studiousness, entrepreneurial spirit, and individual social networks. Bennedsen et al. (2015), employing a novel research method called family firm map, studied 217 Chinese family firms and successor decision-making regarding intergenerational succession. According to the family firm map, and confirmed by empirical results, a family firm has development potential and competitiveness if the family can invest unique family assets in the firm. The establishment and development paths of family firms center on the use of unique family assets by family firms to address successor development restraints. After the completion of succession, Chinese family firms tend to suffer a loss of 60% of firm value, and these changes mainly occur with the changes in unique family assets. Thus, the core of the successful completion of intergenerational succession lies in the proper maintenance and use of unique family assets.

Regarding the significant impact of founders' personal characteristics, such as cultural background, on succession performance, Chen et al. (2021) revealed that founders who are deeply influenced by Confucian culture are more inclined to choose family members or non-family members with whom they have a close relationship as successors. They also reported that the impact of successor selection within the family or closely related members on corporate performance is

more significant compared with successor selection outside the family or relationship circle. The reason is that, as influenced by Confucian culture, only successors in the former scenario can acquire the founders' proprietary assets through internal management experience before succession, enabling them to outperform other successors in terms of corporate performance.

Succession performance is also influenced by the cultivation model adopted for family successors and successor ability to establish authority in firms. Zhu and Lyu (2019) used listed family firms from 2003 to 2016 as samples to study the impact of successor cultivation models on succession performance and found that the market and financial performance tended to be worse after succession. Family firms passed down to the second generation who have accumulated overseas training fare even worse in terms of market and financial performance. The main impact path of successor cultivation models is that overseas training is less conducive to the succession of the founders' special assets and core values of family firms. Li et al. (2015) utilized the theory of portfolio entrepreneurship to address the issue of succession within the family resulting in the successors having difficulty gaining acceptance owing to lack of authority, despite the completion of factual succession. They found that the second founding generation who chose to start business in industries other than the successor's father's industry could establish personal authority more effectively when taking over the business. Based on the intergenerational succession case of Shanxi Tianxi No. 1 Noodles Catering Co., Ltd., Li et al. (2021) analyzed the impact of the institutional job in the intergenerational succession of family firms on the transformation of authority. They emphasized that the key to a successful transformation lies in the succession of consistent values, mission, and vision. He and Lian (2009) stated that family authority is not linearly related to the family firms' market value; moderate family authority may promote value creation in family firms.

The choice of successor in the intergenerational succession of family firms significantly influences the investment decision-making of these firms. According to Cao et al. (2015), China's one-child policy has lowered the expectations of founders of family firms for young successors, as well as for firm listing, rate of reinvestment, and R&D investment. Hui and Xu (2016) reported that

intergenerational succession in family firms is regarded as a source of operating risk, and these firms are inclined to reduce investment expenditure during the process of intergenerational succession. In addition, the age of founders reinforces the negative relation between intergenerational succession and long-term investment—the older the founders, the greater the range of reduction in long-term investment during the process of intergenerational succession. Focusing on the impact of succession of family firms by the second founding generation on firm innovation activities, Huang et al. (2018) revealed that the second founding generation may restrict related party transactions and improve the quality of accounting information of the firms to mitigate corporate entrustment and agency problems after succession, thereby increasing firm innovation.

Generally, positive succession performance hinges on the succession of the family-specific assets and the establishment of the successors' authority in family firms, with significant influence from the personal characteristics of the founders and successors. Investment decisions of family firms are affected by the decision regarding intergenerational succession. Currently, no study has examined the effect of founder overconfidence with regard to post-succession performance and investment decisions in family firms. We thus analyzed whether founder overconfidence leads to behavioral biases and the failure of family firm succession. We intended to empirically reveal the actual effects of intergenerational succession decisions under the influence of founder overconfidence, thus making an incremental contribution to the research on family firm succession.

### **3. Case Study of Fuyao Glass**

We used Fuyao Glass as a representative case to analyze the relation of the personality of the founders of family firms with the choice of family firm succession and firm performance after succession. We collected financial data and information regarding the changes and résumés of senior managers from the WIND database, website of Fuyao Glass, and Chinese Research Data Services Platform (CNRDS).

### 3.1 Firm Background

Fuyao Glass Industry Group Co., Ltd. (Fuyao Glass) was registered and incorporated in Fuqing, Fuzhou, Fujian Province, China, in 1987. Mainly engaged in the production of automotive glass products, Fuyao Glass supplies products for well-known Chinese and international automobile makers. It is the leading automotive glass production and supply enterprise in China with industrial classification as non-metallic mineral products. Fuyao Glass was listed in the Shanghai Stock Exchange and Hong Kong Stock Exchange in 1993 and 2015, respectively. By the end of 2022, it had 28,982 employees, an operating revenue of approximately RMB 28 billion, and a net profit of RMB 4 billion. As of June 8, 2023, the total market value of Fuyao Glass reached RMB 82 billion and its Price-to-earnings ratio (PE TTM<sup>3</sup>) was 17.85. According to information released on the company's website, Fuyao Glass has established factories and commercial agencies in 16 provinces and cities in China and 11 countries. It holds a domestic market share of as high as 30%. In 2020, Fuyao Glass ranked 482nd in the list of top 500 Chinese private enterprises released by the All-China Federation of Industry and Commerce<sup>4</sup>.

Fuyao Glass began as a small township water-meter glass factory where founder Dewang Cao served as purchasing officer. Based on the original glass factory, Dewang Cao incorporated more than ten shareholders, including local enterprise, overseas Chinese, and township government representatives, to form a small joint venture with the main business of automotive windshield glass. From its incorporation, Fuyao Glass had 2.47% of state-owned shares in the year 2006. At present, shares are mainly held by investors in Hong Kong, making Fuyao Glass an international enterprise. As of June 8, 2023, Dewang Cao held 14.97% of the shares of Fuyao Glass through Sanyi Development Limited, remaining as the largest controlling shareholder with absolute control over Fuyao Glass. In sum, Fuyao Glass is a private family firm in the Chinese market faced with the

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<sup>3</sup> Trailing twelve months.

<sup>4</sup> [https://www.acfic.org.cn/ztlhz/2022my5bq/2022my5bq\\_4/202208/t20220830\\_111966.html](https://www.acfic.org.cn/ztlhz/2022my5bq/2022my5bq_4/202208/t20220830_111966.html)

problem of intergeneration succession that is typical among Chinese family firms. Therefore, we selected the intergenerational succession of Fuyao Glass as a case study.

### **3.2 Founder's Personality**

Dewang Cao, now a citizen of Hong Kong, was born in Fujian Province in 1946. As the founder of Fuyao Glass and an outstanding founding-generation entrepreneur in China, Dewang Cao, now 77 years old, serves as the chairman of Fuyao Glass Industry Group Co., Ltd. He also holds social positions, including as member of the Consulting Committee of the All-China Federation of Industry and Commerce, honorable president of the China Federation of Overseas Chinese Entrepreneurs, and honorable president of the Fujian Charity Federation. Dewang Cao holds a bachelor's degree as his highest educational qualification, without overseas study and work experience.

Dewang Cao is the soul of Fuyao Glass, and since its incorporation, he has had a significant impact on almost all major decisions made toward the development and growth of the firm. The company website<sup>5</sup> emphasizes his unwavering core position in Fuyao Glass, as well as his personal abilities, internal “leading” role, and external contributions to public social welfare, the Chinese market, and China's participation in international cooperations. In particular, the website proclaims Dewang Cao's remarkable contributions to charitable institutions, totaling up to RMB 16 billion.

Given our focus on founder overconfidence, we measured this indicator in Fuyao Glass from 2000 to 2021 (Table 1). Founder overconfidence with respect to the favorable operating status of Fuyao Glass (Over) was only justifiable in 2007—the only year when the profit forecast of Fuyao Glass exceeded its actual profitability. As for the ratio of the remuneration of the top three managers at the regulatory level to the total remuneration of Fuyao Glass (Over1/Over2), it was higher than the industry median in 2005–2009, 2014–2016, 2020, and 2021, whereas the ratio of the remuneration of the top three senior management personnel to the total remuneration of Fuyao Glass

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<sup>5</sup> <https://www.fuyagroup.com/>. [https://www.fygi.com/about?lang=jp\\_JP](https://www.fygi.com/about?lang=jp_JP)



was higher than the industry median in 2005, 2007–2010, and 2016. Over1/Over2, an indicator of founder overconfidence, supported the overconfidence of Dewang Cao to a certain extent.

**Table 1: Succession of Fuyao Glass and Founder Overconfidence**

This table shows the annual distribution of the succession choice of Fuyao Glass and founder overconfidence indicators (Over and Over1/Over2) from 2000 to 2021. Among them, “Succession” represents whether Hui Cao, son of Dewang Cao, holds the position of general manager of Fuyao Glass in the current year, with 1 = yes and 0 = no. “Over” is an indicator of founder overconfidence based on the difference between profit forecast and actual profitability. When the profit forecast is better than the firm’s actual profitability, Over = 1, and 0 otherwise. Over1 and Over2 represent the ratio of the remuneration of the top three managers at the management level and the ratio of the total remuneration of the top three senior management personnel to the total remuneration of the firm, respectively. When the relative ratios are higher than the medians in the industry, Over1/Over2 = 1, and 0 otherwise.

<b>Year</b>	<b>Succession</b>	<b>Over</b>	<b>Over1</b>	<b>Over2</b>
2000	0	0	0	0
2001	0	0	0	0
2002	0	0	0	0
2003	0	0	0	0
2004	0	0	0	0
2005	0	0	1	1
2006	1	0	1	0
2007	1	1	1	1
2008	1	0	1	1
2009	1	0	1	1
2010	1	0	0	1
2011	1	0	0	0
2012	1	0	0	0
2013	1	0	0	0
2014	1	0	1	0
2015	1	0	1	0
2016	1	0	1	1
2017	1	0	0	0
2018	1	0	0	0
2019	1	0	0	0
2020	1	0	1	0
2021	1	0	1	0

### **3.3 Succession Plan of the Firm**

Dewang Cao has had absolute influence in Fuyao Glass. He concurrently served as chairman and general manager, two key positions in Fuyao Glass, until 2003. Since 2004, Dewang Cao has served as chairman, whereas the position of general manager has been filled by different people.

Dewang Cao served as general manager shortly in 2015 and 2017, marking the arrangement of the succession plan of Fuyao Glass.

The succession plan adopted by Fuyao Glass is not a simple father-to-son handover. In September 2003, Toyohashi Shigeo was appointed as the general manager of Fuyao Glass. Shigeo, a Japanese citizen and only two years younger than Dewang Cao, was a senior executive at Sekisui Chemical Co., Ltd. before assuming the position of general manager at Fuyao Glass in June 2003. He thus had plentiful of executive experience in the same industry as Fuyao Glass. His tenure as the general manager lasted only one year and seven months. Hui Cao, son of Dewang Cao, took over the position, which symbolized the completion of the intergenerational succession of Fuyao Glass by a direct relative of the founder. Hui Cao, born in 1970 and a citizen of Hong Kong, holds a master's degree with occupation as a senior economist. Hui Cao has overseas working experience but no academic research background. From 2005 to 2015, Hui Cao served as the general manager, while Dewang Cao served as the chairman.

After 2015, Fuyao Glass had a new general manager. Hui Cao stepped down in July 2015 and subsequently appointed as the vice chairman of Fuyao Glass in the succeeding month. Zuo Min took over as the general manager, holding the role for 20 months. Zuo Min, born in 1966, is a Chinese national with a PhD in accounting from Fudan University. He joined Fuyao Glass in 1989 as an internally cultivated executive talent, and had previously served as CFO of Fuyao Glass before becoming the general manager. Ye Shu subsequently took this position. Ye Shu, born in 1972 and an Australian citizen, joined the firm in 2003 and had previously served as the general manager of Fujian Yaohua Industrial Village Development Co., Ltd., an affiliate of Fuyao Glass. Ye Shu was also an internally cultivated executive talent at Fuyao Glass.

Regarding the composition of the management of Fuyao Glass after succession, Dewang Cao continues to serve as the chairman, and Hui Cao, as the vice chairman and executive director. The internally cultivated manager serves as the general manager. This is a typical structure of family firms after completion of intergenerational succession within the family.

The succession plan adopted by Dewang Cao involved long-term arrangement and cultivation. Deeply influenced by traditional Chinese family values, Dewang Cao hoped that Hui Cao, his eldest son, could inherit Fuyao Glass. Therefore, Dewang Cao had early on arranged for Hui Cao to participate in corporate management. Hui Cao began to work at the production line of Fuyao Glass after graduation from the high school. In 1992, at only 22 years old, Hui Cao began to serve as the general manager of Sanyi Development Limited, an affiliate of Fuyao Glass. He later served as the general manager of Fuyao (Hong Kong) Limited from March 1994 to June 1996. In August 1998, Hui Cao served as a director of Fuyao Glass and acquired a master's degree in the US. After graduation, he served as the general manager of Fuyao North America Incorporated and then, in 2005, the general manager of Fuyao Glass. After stepping down in 2015, Hui Cao was promoted to the vice chairman position of Fuyao Glass. He also began a business on his own beyond Fuyao Glass, successfully establishing the "Triplex Series" industrial companies, including Fujian Triplex Machinery Technology Co., Ltd. and Fujian Triplex Auto Service Co., Ltd. These pioneering enterprises were later acquired by Fuyao Glass, and Hui Cao helped Fuyao Glass break new ground in the automotive field.

Sui (2021) previously analyzed the succession of authority of family firms based on the case of Fuyao Glass, outlining the path taken by Hui Cao to establish his authority in Fuyao Glass. The legitimate authority of Hui Cao as successor comes from the meticulous arrangements made by Dewang Cao, including the continuity and adjustment of corporate internal governance and arrangement of controlling interests. Dewang Cao has fully supported Hui Cao in handling corporate management issues, thus laying a foundation for the personal authority of Hui Cao in Fuyao Glass based on his qualifications. As mentioned, Hui Cao resigned as the general manager to start his own business in 2015. This path of entrepreneurial combination is consistent with the path through which the second generation establish successor authority (Li et al., 2015). This experience played a decisive role in establishing Hui Cao's absolute authority, especially personal leadership authority, within Fuyao Glass.

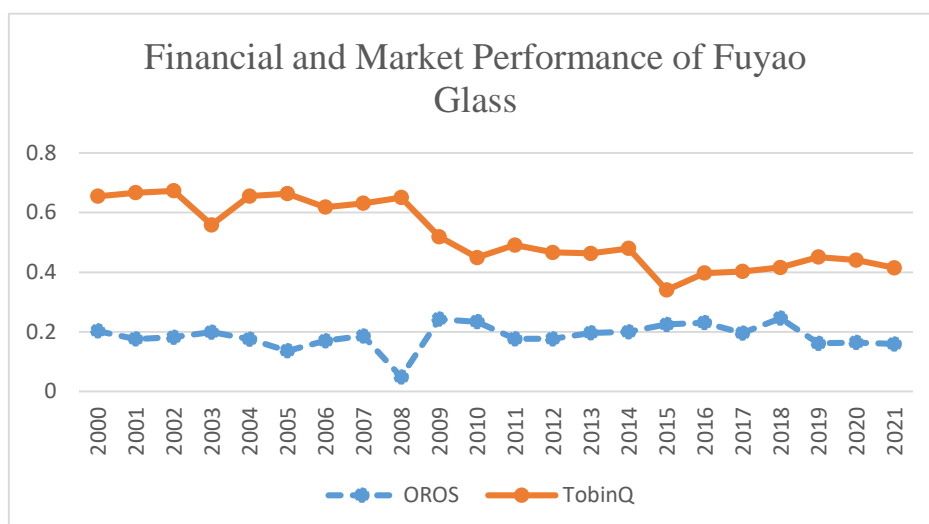
For Dewang Cao, the succession plan of Fuyao Glass was a balanced choice made in consideration of multiple objectives, including traditional concepts, personal preferences, and the firm's long-term development. First, cultivating the eldest son as the successor accorded with the traditional family concept that succession by the eldest son in the family could better ensure the long-term succession of a family firm. Second, the outstanding abilities of Dewang Cao were emphasized in the external publicity of Fuyao Glass. This, along with our indicators of founder overconfidence ( $Over1/Over2$ ) based on the relative ratio of senior managers' remuneration, indicated that Dewang Cao was indeed overconfident to a certain extent. Dewang Cao was inclined to believe that Hui Cao possessed better personal abilities compared with others, including the internally cultivated professional managers, and was more capable of serving as the successor of Fuyao Glass. Hui Cao was always the first choice as the successor of Dewang Cao. Third, Dewang Cao did not simply hand over the firm to Hui Cao. Instead, he arranged for Hui Cao to participate in the operation of the family firm in a very early stage. When Fuyao Glass was facing the anti-dumping investigations in North America, Hui Cao was appointed as the general manager of Fuyao North America Incorporated, which enabled him to gain practical experience and complete his natural transition in the family firm through his growth. Finally, Dewang Cao also considered the eldest son's personal choices and development aspirations and did not simply restrict Hui Cao's personal development within Fuyao Glass. Dewang Cao cultivated senior management personnel outside the family and then selected some of them to hold important executive positions in Fuyao Glass when Hui Cao was starting his own business.

For Hui Cao, Fuyao Glass is not only a family business founded by his father but also an important place for his professional development. During his cultivation and training as successor, Hui Cao acquired not only wealth from his family firm but also valuable practical experience for management, which became a vital cornerstone for his personal development. The excellent personal background of Hui Cao as well as his performance inside and outside Fuyao Glass also contributed to the market image of Fuyao Glass.

The succession plan of Fuyao Glass not only satisfies the common motivation of achieving long-term development of the family firm but also fulfills the individual motivation of realizing personal achievements. This succession plan can be used as reference by other family firms with similar needs for succession during the establishment of succession plans.

### 3.4 Status of Corporate Management

Figures 1 and 2 show the operation status of Fuyao Glass from 2000 to 2021, highlighting the firm’s industrial development path. Figure 1 shows the firm’s operating and market performance, and Figure 2, the capital and R&D expenditure.

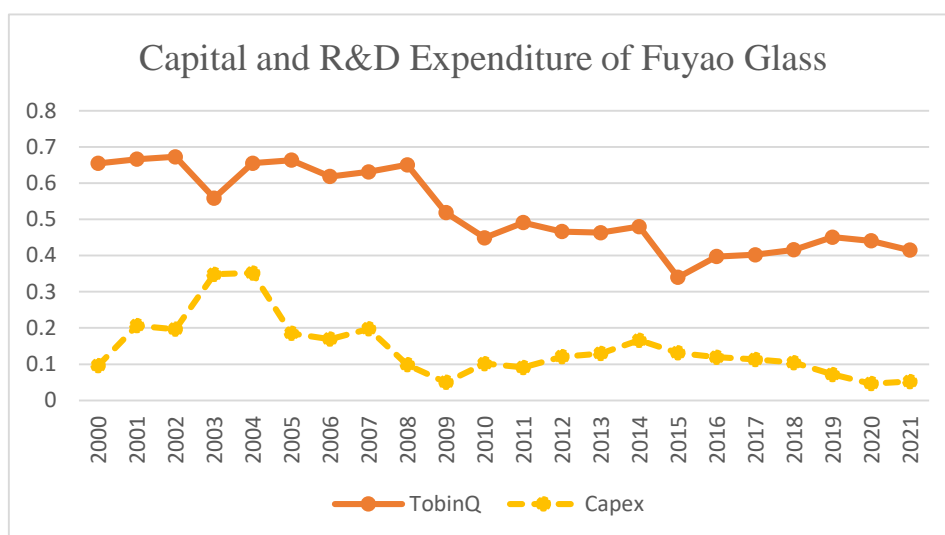


**Figure 1: Annual Operating and Market Performance of Fuyao Glass from 2000 to 2021**  
(OROS represents the annual operating margin of the firm; TobinQ refers to the Tobin’s Q of the firm in the current year.)

Figure 1 indicates the stable operating performance of Fuyao Glass, with its operating margin maintained at approximately 0.2. The operating margin peaked at approximately 0.26 in 2009, 2010, and 2018. During Hui Cao’s tenure as general manager of Fuyao Glass from 2005 to 2015, the firm’s operating margin hit the lowest point (lower than 0.1 in 2008) and then experienced a subsequent increase (2009–2010). The operating profit in 2015, when Hui Cao resigned as general manager, was slightly higher than 0.2. From 2019 to 2021, the operating margin was lower than 0.2, which

may be attributed to the COVID-19 pandemic. The operating performance of the family firm was affected by industry cycles and macroeconomic conditions. Therefore, the data could not confirm whether the succession of Hui Cao had a significant impact on the firms' financial performance.

As for the market performance of Fuyao Glass, it declined from 2000 to 2021. Tobin's Q slightly increased to reach a peak of 0.7 from 2000 to 2003. After Dewang Cao stepped down as general manager in 2003 and Toyohashi Shigeo took over, Tobin's Q dropped to below 0.5 in 2009. In 2015, this ratio further dropped to below 0.4 after Hui Cao resigned as general manager. Tobin's Q later began to increase, albeit insignificantly, maintaining a value between 0.4 and above 0.5. The resignation of the founder and the successor within the family firm may have been a negative piece of information for investors.



**Figure 2: Annual Capital Expenditure and R&D Expenditure of Fuyao Glass from 2000 to 2021**  
(R&D represents the ratio of R&D expenditure of the firm in the current year to the total assets of the firm; Capex represents the ratio of capital expenditure of the firm in the current year to the total assets of the firm.)

Figure 2 shows the development path of Fuyao Glass from 2000 to 2021 based on capital and R&D expenditure. Fuyao Glass began disclosing its R&D expenditure from 2009. The firm's expenditure was stable and accounted for less than 0.05 of the total assets. The capital expenditure peaked from 2003 to 2004, and the ratio of the capital expenditure to the total assets was as high as 0.35. This figure then declined to below 0.2 owing to the reduction in the firm's operating profit;

capital expenditure reached the lowest point in 2009, at 0.05 of the total assets. It then rebounded and peaked again in 2014, when it accounted for 0.16 of the total assets. The capital expenditure of Fuyao Glass has continued to shrink since the resignation of Hui Cao from the post of general manager in 2015. As of 2021, it was at around 0.05 of the total assets. Regarding the needs for industrial expansion, the corporate policies of Fuyao Glass had been changed, and capital investment was made before Hui Cao took over. The succession within the family occurred during the stable operation of the firm rather than during a major industrial adjustment period.

#### **4. Conclusion**

We studied the case of Fuyao Glass case to elucidate the relation among founder overconfidence, choice in family firm succession, and succession performance. Consistent with the findings of Lu et al. (2021), traditional values increased the willingness of Dewang Cao to pick his eldest son as his successor. Moreover, owing to his own high recognition of his abilities and his confidence in the abilities of his eldest son, Dewang Cao believed that Hui Cao was the best choice to be his successor. The practical succession plan adopted by Fuyao Glass is representative of the succession plans of traditional Chinese family enterprises, characterized by a focus on the cultivation of the eldest son as the core decision-maker, assisted by non-family member senior management personnel. The current composition of the management of Fuyao Glass after succession—with Dewang Cao still serving as the chairman, Hui Cao serving as vice chairman and executive director, and an internally cultivated manager serving as the general manager—satisfies the common motivation of achieving the long-term development of the family firm and the individual motivation of realizing personal achievements.

The implementation of Dewang Cao's succession plan for Fuyao Glass showed no significant impact on the firm's operating performance. However, its Tobin's Q dropped after the resignation of Dewang Cao in 2003 and Hui Cao in 2015, indicating that the firm's investors recognized the



positive impacts of the founder and his successor on the development of the firm. Moreover, Fuyao Glass's innovations showed no significant changes from 2000 to 2021. Fuyao Glass only made changes to its corporate policies regarding the needs for industrial expansion. It also made capital investments before Hui Cao took over. Our findings suggest that succession within the family typically occurs during a stable macroeconomic stage rather than during a major industrial adjustment period.

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