WHEN DOES TRANSITIONING FROM FAMILY TO PROFESSIONAL MANAGEMENT IMPROVE FIRM PERFORMANCE?

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Using long-term data on Japanese family firms, this study explores when the transition from family to professional management leads to better performance. In order to avoid endogeneity bias, we employ propensity score matching and difference-in-differences techniques. We find evidence that firms that transition from family to professional CEOs outperform those that maintain family leadership. This performance improvement is more pronounced when (1) families maintain high ownership control but leave no family legacy behind, (2) when the transition moves from non-founder family managers to professionals, and (3) when professional managers graduated from elite universities. Copyright © 2014 John Wiley & Sons, Ltd.

INTRODUCTION

Since Berle and Means's seminal work (1932), the strategy literature has taken for granted the separation of ownership and management. The CEO succession literature, for instance, focuses almost exclusively on the choice and performance implications of insider versus outsider professional managers (Zhang and Rajagopalan, 2003, 2010). Yet, family firms, often headed by family CEOs, remain the dominant firm type around the world, including in the West (La Porta, Lopez-de-Silanes, and Shleifer, 1999). Thus, the strategy literature that developed in the context of a separation between ownership and control may not apply in this more common setting. Furthermore, there is a paucity of research on post-CEO succession firm performance in family firms. Using long-term data on Japanese firms, this study explores when the transition from

family to professional management improves firm performance.

We define family firms as those in which founders or their family members control more than 5 percent ownership and occupy top management positions, consistent with prior works in the family business literature (e.g., Allen and Panian, 1982; Villalonga and Amit, 2006). Controlling families may have a strong desire to keep top management positions within the family in order to maximize their socioemotional wealth, sometimes at the expense of profit (Gomez-Mejia *et al.*, 2011). Once they give up such desires and opt for professional managers, family firms then consider whether they will promote internally or recruit professional managers externally. The transition from family to professional CEO therefore represents a very significant decision for family firms. As such, the relative performance of family versus professional CEOs is of great strategic importance.

Will firms that shift from family to professional management perform better after the transition? Empirical findings regarding performance differences between family firms and professionally

managed firms offer mixed results. Some studies find that family firms outperform professionally managed firms due to low agency and long-term investment horizons (Anderson and Reeb, 2003; Mehrotra *et al.*, 2013). Other studies find the opposite to be true, as attributed to nepotism, conflicting interests, and family legacy issues (Bennedsen *et al.*, 2007; Bertrand *et al.*, 2008; Villalonga and Amit, 2006).

Two important reasons help explain these inconclusive findings. First, since there are both positive and negative consequences of family management (and also of professional management), "the positives neutralize the negatives and vice versa" (Gomez-Mejia *et al.*, 2011: 691). Further, this neutralization of positives and negatives not only happens within a strategic choice but also across several strategic choices. As such, a mere comparison of the average performances of family firms and professionally managed firms is bound to generate confounding results. Second, prior works comparing average performance between groups of firms with family and professional CEOs, mostly based on cross-sectional data, are susceptible to endogeneity biases. For instance, high-performing family firms may choose family heirs, while poor-performing firms may choose professional managers, which could lead to a misleading causal relationship that asserts professionalization results in poor firm performance. Since a myriad of factors can affect firm performance, we are challenged to find a setting, close to a controlled experiment, that allows us to single out the effects of the transition from family to professional management on firm performance.

This study overcomes the above two limitations of previous research on family firm performance. First, we focus on one clearly defined strategic decision of family firms, i.e., the choice to move from family to professional management. Second, we adopt a recent methodological development to control for endogeneity: propensity-score matching and difference-in-differences, enabling us to create a quasi-experimental setting (Imbens and Wooldridge, 2009; Rosenbaum and Rubin, 1983). More specifically, if we create a control group consisting of firms that have nearly the same likelihood of transitioning to professional manager CEOs but instead continue with family management, we can compare their performance with firms in the treatment group, which actually transition to professional manager CEOs. This precisely captures the performance effects attributable to the transition from family to professional management. The difference-in-differences method removes any unobserved firm heterogeneity. In order to rule out the possibility that performance enhancement derives not from the specific professional CEO talent but a more general CEO succession event, we also compare continuing family CEO firms to those that experience family heir succession using the same process, constituting a placebo test.

This study further explores several theoretically driven contingencies concerning *when* firms that transition to professional CEOs are more likely to outperform those that maintain family CEOs. Although families may have intrinsic desires to pursue their own socioemotional wealth, this does not translate to reliance on family heirs at all costs. According to the behavioral agency model (Martin, Gomez-Mejia, and Wiseman, 2013; Wiseman and Gomez-Mejia, 1998), families can be loss averse for their prospective wealth and sacrifice their current socioemotional wealth, in turn choosing professional managers over family heirs. If we extend this logic, we can expect that, even after appointing professional managers, families will continue balancing their current and prospective financial, as well as socioemotional, wealth. That is, despite professional managers being in charge, family firms could protect their prospective wealth by monitoring the agency costs of professional managers, while they also continue to pursue socioemotional wealth by exercising family legacy. This study therefore considers the agency costs of both professional managers and family owners that facilitate or hinder professional managers in realizing their potential.

In addition, we consider the superior managerial talents of professional managers over family managers, since families give up their socioemotional wealth in return for future financial wealth by investing in professional managers. Founders are entrepreneurs, often possessed with extraordinary talents that second or third generation family managers may not inherit (Adams, Almeida, and Ferreira, 2009; Fahlenbrach, 2009). We thus explore whether professional managers outperform not only non-founder family managers but also founders. Additionally, we examine whether professional managers' superior managerial talent, reflected in elite university education, contributes to relative performance (Perez-Gonzalez, 2006; Useem and Karabel, 1986).

With this novel approach to an important issue, this study seeks to contribute to the family business

literature and the CEO succession literature. Specifically, we seek to improve our theoretical understanding of family firms by examining how family firms balance current socioemotional wealth and prospective wealth, even after transitioning to professional management. This study therefore sets the boundary conditions for the socioemotional wealth perspective of family firms (Gomez-Mejia *et al.*, 2011). This study also demonstrates that family firms' CEO succession decisions and subsequent post-succession performance are largely affected by agency cost-related factors like family ownership and family legacy, as well as by available managerial talents. This study therefore sheds new light on the CEO succession literature by demonstrating the different motivations and consequences of CEO succession in family firms.

THEORY AND HYPOTHESES

CEO succession in family firms

CEO succession is one of the most critical events in a firm's evolution. Prior works focus on how top managers fit corporate environments in order to survive and prosper. The empirical evidence suggests that outsiders may outperform insiders when firms face turbulent or competitive environments (Datta and Rajagopalan, 1998; Virany, Tushman, and Romanelli, 1992; Zhang and Rajagopalan, 2003), when internal power structures are simpler (Shen and Cannella, 2002), and when takeover coincides with post-succession senior executive turnover (Karaevli, 2007).

However, the current literature on CEO succession remains limited in the sense that no distinction is made between family firms and nonfamily firms. Given that many firms are still owned and controlled by families (Claessens, Djankov, and Lang, 2000; Faccio and Lang, 2002; La Porta *et al.*, 1999), the traditional distinction between insider and outsider professional CEOs may be of secondary importance to differentiating family firms from nonfamily firms. Of primary concern to family firms is whether the CEO position is taken by controlling family members or by professional managers from outside the family.

Gomez-Mejia and his colleagues recently proposed a theoretical perspective to emphasize the socioemotional wealth preservation motivation of family firms, conducting several empirical studies in various contexts (Berrone *et al.*, 2010; Gomez-Mejia *et al.*, 2007, 2011). Fundamental to this theory is the notion that family owners are likely to see potential gains or losses in socioemotional wealth as their primary frame of reference in the management of family firms. Thus, families will make strategic choices that pursue families' socioemotional wealth (e.g., appointment of family heir CEOs) even at the expense of other principals (e.g., institutional investors and minority shareholders) who do not share the same socioemotional wealth.

However, families' pursuit of their own socioemotional wealth does not necessarily mean that they will always appoint family heirs, as they worry that incapable heirs risk the family fortune. Based on the behavioral agency model, Martin *et al.* (2013) and Wiseman and Gomez-Mejia (1998) argue that both owners and managers are not only risk averse but also loss averse. Further, they must balance prospective wealth and current wealth in taking strategic risks. Therefore, families who are loss averse toward prospective wealth and sacrifice current socioemotional wealth will likely favor professional managers over family heirs, since professional managers are a self-selected group of people who survived a tournament of competition based on managerial talent (Burkart, Panunzi, and Shleifer, 2003).

While the CEO succession decision per se has been studied in a few works in the context of family firms (Allen and Panian, 1982; Salancik and Pfeffer, 1980; Wasserman, 2003), and more extensively without distinguishing between family and nonfamily firms (Dalton and Kesner, 1983; Datta and Rajagopalan, 1998; Zhang and Rajagopalan, 2003), we do not offer formal hypotheses on this first-stage decision concerning whether family firms appoint family heirs or professional managers. Instead, we analyze the first-stage CEO succession decision in order to calculate the propensities of CEO succession, i.e., the family-to-professional management transition (with family heir succession serving as a placebo test) so that we can create comparable treatment and control groups. This allows us to focus on second-stage post-succession performance implications, as detailed in the next section.

Post-CEO succession performance of family firms

Prior empirical findings on the relative performance of family versus professional management

are mixed. While nepotism may have a negative impact on firm performance, decreased agency problems may have a positive impact (Anderson and Reeb, 2003; Villalonga and Amit, 2006). As discussed earlier, these studies compare only the average performances between family and professionally managed firms and do not pick up the performance impact solely attributable to the transition from family to professional manager CEOs. Furthermore, the transition from family to professional management is not a single event but a series of continuing interactions between family owners and professional managers. Even after families appoint professional manager CEOs in order to tap their superior managerial talents, they still try to protect their current and prospective wealth by monitoring and controlling professional managers and pursuing socioemotional wealth (Martin *et al.*, 2013). We therefore expect firms that transition from family to professional management to exhibit divergent performances depending on how families manage this balance, as hypothesized in the next section.

Family ownership, control, and legacy

Although professional managers have strong advantages from superior managerial talents, their weaknesses lie in potential agency cost enacted by the separation of ownership and management (Jensen and Meckling, 1976; Shleifer and Vishny, 1986). Due to information asymmetry and divergent interests, family owners cannot predict whether professional managers will pursue their own interests at the expense of the family.

An interesting insight from behavioral agency theory is that both owners and managers constantly manage their own risk. For example, in the context of stock options, managers not only respond to stock options but also manage the risk contained in their compensation packages by using hedging instruments like put options (Devers *et al.*, 2008; Martin *et al.*, 2013). Similarly, in family firms, families can monitor the actions of professional CEOs by maintaining large equity shares. Several studies find a positive relationship between family ownership and firm performance, implying that agency cost may be reduced by family members' monitoring (Anderson and Reeb, 2003; Maury, 2006). Similarly, Miller, Minichilli, and Corbetta (2013) find the relative performance of family firms to be contingent upon a combination of firm size and concentration of family ownership. Thus, we expect that the larger the

family equity shares, the better families can monitor and control professional manager CEO behavior, thus reducing agency cost and, in turn, improving post-succession firm performance.

On the other hand, family owners can also be entrenched, pursing their own interests against other shareholders, like institutional and minority shareholders. For example, even after appointing professional manager CEOs, families can expropriate minority shareholders, which will be discussed further in the next section. If there exist large blockholders other than families, they may monitor the entrenchment of founding families, as well as professional managers (Bennedsen and Wolfenzon, 2000). Kang and Shivdasani (1995) underscore the monitoring role of institutional investors in Japan. Thus, we expect that the larger the institutional investors' shares, the better institutional investors can monitor and control family owners and professional managers, thus improving post-succession firm performance.

> *Hypothesis 1: Family firms that transition from family to professional CEOs will exhibit higher performance than family firms that continue to be managed by family CEOs, when families maintain a large ownership share.*

> *Hypothesis 2: Family firms that transition from family to professional CEOs will exhibit higher performance than family firms that continue to be managed by family CEOs, when institutional investors maintain a large ownership share.*

Families can pursue nonpecuniary private benefits of control, i.e., utilities to the families from control, at the expense of other minority shareholders, or what Demsetz and Lehn (1985) call "amenity potential." While institutional ownership may be able to monitor and control some extreme cases of expropriation of minority shareholders, the agency problems of family owners can be subtle and difficult to monitor and control. For example, even after families appoint professional manager CEOs, they may derive pleasure from mandating that their firms maintain family values (family legacy). If professional managers become CEOs in firms with strong family legacy, they may feel constrained in executing strategic changes and reorientations due to potential conflicts with stated family values, norms, and strategies (Bertrand and

Schoar, 2006). Professional managers may be more likely to maintain the status quo through strategic continuity, family traditions, and other previously determined practices.

In this study, we explore two types of family legacies, one explicit and one implicit. First, after passing the CEO position to professional managers, ex-family CEOs may continue meddling in management by maintaining official positions, e.g., chairman of the board, honorary chairman, or advisor. For example, although real estate and railway tycoon and owner of Seibu Corporation Yoshitaki Tsutsumi retired in 1989, he remained chairman of the board until 2005, when he was convicted of security fraud. While three professional CEOs came and went between 1989 and 2005, the real power resided with Tsutsumi. Nonetheless, one of the ex-professional manager CEOs took full responsibility on behalf of Tsutsumi by committing suicide—a signal of failed responsibility in Japan—after being grilled by prosecutors regarding the security fraud case (Rowley and Tashiro, 2005). Although not always as dramatic as the Seibu case, if ex-family CEOs stay in firms in a capacity to oversee professional manager CEOs, the latter cannot really initiate new strategies or change the course of action. In reality, in such cases, family CEOs never retire and remain de facto CEOs, with professional manager CEOs functioning more like chief operating officers who manage daily operations under the supervision of the ex-CEOs. Furthermore, the co-habitation of ex-family CEO and professional manager CEO can foster mistrust and conflict between them (Cruz, Becerra, and Gomez-Mejia, 2010). Therefore, we expect that professional manager CEOs can realize their full potential only when given the chance to implement new courses of action.

Second, while often implicit, family legacy can effectively constrain professional managers when there are strong family visions and founding principles that professional managers are forced to uphold. Family legacy can be particularly strong when firms take founding family names. Dyer and Whetten (2006: 797) state: "A family that owns an enterprise with its name on the building may have greater difficulty distancing itself from the firm it controls and hence may feel a greater responsibility to ensure that the firm does nothing to damage the family's reputation. While it is possible that non-family owners and managers could also feel this sense of responsibility, it is less likely than those who have their names and families associated with a firm." In fact, several prior works use family firm name as a proxy for family legacy. For example, Gompers, Ishii, and Metrick (2010) find that family firm name is the most powerful predictor for issuing dual-class shares. Klasa (2007) explores whether families are not likely to sell their stakes when the family name is included in the firm name. Fahlenbrach (2009) uses family firm name as an instrument variable to predict whether founders remain as CEOs.

Family legacy is particularly strong in Japanese firms bearing family names. Toyota, Honda, and Matsushita are all firms named for the founders with especially well articulated and implemented visions and founding principles. Despite this, some firms choose to lose their family moniker. For example, Matsushita Electric changed its company name to Panasonic Corporation in 2008 after experiencing many years of declining performance. Although the official reason was to provide a unified image to customers by using this high profile brand name, insiders and outsiders alike speculate that the real reason was to break away from founder Matsushita Konosuke, who left a strong legacy on the firm after his retirement in 1961 (Arimori, 2008: 109–115). Every morning, employees at Matsushita chanted Konosuke's seven management principles. Konosuke even left a 300-year plan for the company, attempting to ensure his legacy would live on past his death in 1989. By changing the name to Panasonic, professional managers were freed from the founder's vision and management principles to initiate strategic reorientation. We thus expect professional managers to improve performance when firms do not use family names.

Hypothesis 3: Family firms that transition from family to professional CEOs will exhibit higher performance than family firms that continue to be managed by family CEOs, when outgoing family CEOs do not maintain positions that supervise professional CEOs.

Hypothesis 4: Family firms that transition from family to professional CEOs will exhibit higher performance than family firms that continue to be managed by family CEOs, when firms do not use family names.

Managerial talents

The most fundamental reason why families consider transitioning to professional manager CEOs, despite sacrificing their socioemotional wealth, is the professional managers' superior talents. As competition intensifies, demand for CEOs with new sets of skills and capabilities increases. Chandler's (1994) historic account of the emergence of professional managers at the turn of the 20th century illustrates how intensifying competition can create a mismatch by increasing the demand for new skill sets that firms cannot acquire internally, forcing them to rely on professional managers. In order for professional managers to exhibit superior performance, their managerial talents should exceed those of their family counterparts. Although there are no direct measures of this talent, we suggest that managerial talents mainly comprise three components: inheritance, experience, and education.

For inheritance, we need to distinguish founders from non-founder family managers, since these two groups likely have different managerial talents (Wasserman, 2003). Founders craft a vision and develop products based on that vision, perform the management tasks necessary to grow the business, and possess superior entrepreneurial skills (Adams *et al.*, 2009). If managerial talents pass reliably from generation to generation, especially from founders to their family heirs, family firms would logically dominate economic activity. According to Warren Buffet, however, reliance on family heirs is analogous to "choosing the 2020 Olympic team by picking the eldest sons [and daughters] of the gold-medal winners of the 2000 Olympics" (Johnston, 2001). On the other hand, the best professional CEOs selected from the entire population should be more able than even the most talented heirs of founding families (Burkart *et al.*, 2003), mirroring the real 2020 Olympic team, which will not likely be composed of the children of past competitors. Consistent with this imperfect talent inheritance, several studies confirm that the entrepreneurial skills of founders are the real source of the superior performance of their firms (Adams *et al.*, 2009; Fahlenbrach, 2009; Villalonga and Amit, 2006). If outgoing family CEOs are founders, then professional managers who succeed them face higher expectations, and their talents may not necessarily be superior to founders. On the other hand, non-founder family managers may have simply inherited their positions but not necessarily their

superior managerial talents. We thus expect professional managers to outperform non-founder family managers, but not the founders themselves.

> *Hypothesis 5: Professional manager CEOs will outperform non-founder family CEOs, not the founders themselves.*

Regarding past experience, prior works on CEO succession in the strategy literature considered CEOs—implicitly assuming professional managers—recruited inside/outside the firm or inside/outside the industry in order to capture outsiders' ability to bring in new skills or talents necessary to change environments (Datta and Guthrie, 1994; Datta and Rajagopalan, 1998; Virany *et al.*, 1992; Zhang and Rajagopalan, 2003). For example, intensifying competition and rapid industry growth render past experience and knowledge obsolete while simultaneously generating demand for CEOs with new sets of skills and capabilities, traits typically associated with outside firm or outside industry CEOs. In Japan, however, firms prefer on-the-job training and typically promote even top managers internally. Hiring CEOs from outside the firm or outside the industry usually occurs only in the aftermath of dramatic failures, as in Japan Airline or Nissan. Japanese firms typically emphasize general management skills over functional specialization (Yoshimura and Anderson, 1997). Thus, in Japan, past experience is not a key discerning factor used to capture differences in the managerial talents of professional managers versus family managers.

On the other hand, educational background can be the most reliable and most objective measure for intellectual capacity. Several studies investigate the relationship between education level and managerial talent. Useem and Karabel (1986) show that top college graduates, as well as MBA and law graduates, are more likely to reach the top ranks of corporate management. Perez-Gonzalez (2006) investigates whether the undergraduate institution attended by family CEOs predicts subsequent firm performance. He finds that professional managers outperform family heirs, especially when family heirs did not attend selective undergraduate institutions.

In Japan, admission to elite universities, like the University of Tokyo, requires a high level of intellectual capacity and work ethic (Mehrotra *et al.*,

2013). These elite university graduates also enjoy strong social capital thanks to alumni networks that extend into government, politics, and business. Unlike their Western counterparts, Japanese firms typically do not value MBAs; only a handful of schools even offer this degree. We thus examine whether elite undergraduate education impacts the likelihood of professional managers outperforming family managers.

Hypothesis 6: Professional manager CEOs will outperform family CEOs, when professional managers graduated from elite universities.

EMPIRICAL METHODS

Sample

Japan provides an ideal research setting to test our hypotheses. Japan has many family firms, including Hoshi Ryokan, the oldest hotel in the world, founded in 717 AD and run by more than 46 generations of family owners. Many of these family firms are listed in stock exchanges. Because Japan does not allow dual-class shares, there is a one-to-one correspondence between ownership and control, making identification of the relationship between ownership/control and firm performance straightforward. Further, institutional environments in Japan have remained very stable for the last several decades, with no significant changes in corporate governance or tax systems. Most Japanese firms remain based on boards comprised of executives; firms with the Western-style board consisting of external board members are rare. As mentioned before, Japanese firms typically promote CEOs internally, as opposed to recruiting from outside the firm. They also emphasize general management over functional specialization and rely on on-the-job training over MBA education. In other words, Japanese managers, both family and professional, are mostly promoted internally and lack outside-firm/outside-industry experiences and functional specialization, unlike their counterparts in Western countries. These somewhat unique features of Japanese management make it easy to control for the experiences and functional specializations of managers.

Since ownership of listed firms is fairly fragmented in Japan, we define family firms as those in which founders or their family members maintain more than 5 percent ownership, similar to prior works that also use this 5 percent cutoff, e.g., Allen and Panian (1982), and Villalonga and Amit (2006). We also require that founders or their family members hold the top management positions. The average family ownership in our sample is about 17 percent, quite comparable to American family firms in which families own about 18 percent of outstanding stocks in the S&P 500 (Anderson and Reeb, 2003). Based on this definition, we identify public family firms for each year during the observation period. For this purpose, we include all 3,457 nonfinancial firms listed in any Japanese stock market exchange (Tokyo, Nagoya, Fukuoka, Osaka) from 1949 to 2004, using the Development Bank of Japan (DBJ) database. The DBJ database provides balance sheets and income statements for all publicly listed companies in Japan since 1962, and their ownership information since 1981. The Toyo Keizai database provides information on board structures since 1989. For ownership and board information not available in these two commercial databases, we rely on the database created by the Center for Economic Institutions at Hitotsubashi University.[1]

We constructed family trees for founders and their descendants by consulting the following sources: (1) *Nihon kaishashi sôran* (The Company History in Japan, 1995), which provides detailed company history and information, including founding year and company name change for 3,072 Japanese companies, (2) *Zaikai kakeifu daikan* (Family Trees of Big Business, 1971), which provides detailed family trees for more than 1,000 Japanese companies, (3) company annual reports, and (4) company websites. These sources allowed us to identify 2,109 firms that were family firms when they went public and trace their trajectory through 2004. Seeking to measure performance up to three years after CEO succession with ownership and board information for the 1962–2004 time period, we consider only the cases in which the transition from family to professional CEO occurred by 2001.

Classification of succession events

We define a succession event as CEO turnover in family firms. We focus on two types of CEO

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[1] The Center for Economic Institutions at the Hitotsubashi University makes its ownership (covering 1950–1983) and board (covering 1962–1988) databases for all Japanese listed companies available to researchers.

changes: family heir successions (from one family member to another family member) and family to professional manager transitions. In both cases, outgoing CEOs are family members, either the founder or his/her heirs. Among our sample of 2,109 family firms, we identify 1,152 succession events during our sample time period. The 1,152 succession events include 593 cases of professional manager transition and 559 cases of family heir succession. Among the 593 cases of transition to professional CEOs, 110 cases were interim professional manager transitions whereby professional managers temporarily ran the firm until a family heir could take over several years later. Additionally, in 97 cases, controlling families went bankrupt and were forced to exit the surviving firms. We remove both interim and bankruptcy cases from the sample and consider the remaining 386 cases as valid instances of transition to professional CEOs. We also consider the "founder effect" by distinguishing succession events between founders and non-founders. Among the 386 cases of professional management transition, 139 were succession from founder CEOs and 247 were succession from non-founder family CEOs. Similarly, among the 559 cases of family heir successions, 193 were from founders and 366 were from non-founder family CEOs.

Propensity score matching method and difference-in-differences approach

The central question in evaluating the performance impact of the transition from family to professional management is how to construct a reliable comparison group. While it would be ideal to compare the performance of maintaining a family CEO and transitioning to a professional CEO within the *same* firm, it is impossible to observe counterfactual circumstances. We address this issue by using propensity score matching (Imbens and Wooldridge, 2009; Rosenbaum and Rubin, 1983). Propensity score matching provides a way to create a counterfactual performance for the purpose of comparison. According to Rosenbaum and Rubin (1983: 41), "The propensity score is the conditional probability of assignment to a particular treatment given a vector of observed covariates. Both large and small sample theories show that adjustment for the scalar propensity score is sufficient to remove bias due to all observed covariates." In this study, the treatment group consists of family firms that transitioned from family to professional CEOs and the control

group consists of firms that continue to rely on family CEOs, even though their *ex ante* likelihoods of converting to professional CEOs, i.e., propensity scores, are nearly identical to those that transitioned to professional CEOs.

The propensity score is calculated as the predicted probability of treatment, i.e., transitioning from family to professional management, using probit estimation. We calculated the propensity score using variables on past firm performance, firm traits, industry-adjusted firm risk, ownership structure, family legacy, board composition, incumbent CEO characteristics, industry fixed effects, and year fixed effects, as informed by previous work that suggests these factors affect succession. We then match family firms that experience the transition from family to professional management with continuous family management firms within the same two-digit SIC industry and year, using the STATA command psmatch2 (Leuven and Sianesi, 2003). It is critical to assess how well the propensity score matching procedure creates comparable samples between the treatment and control groups (Dehejia and Wahba, 2002; Smith and Todd, 2005). We perform various balancing tests to ensure that firms in the treatment and control groups were not statistically different from each other prior to the treatment. The Appendix S1 provides detailed balancing test results that suggest our matching groups are in fact well balanced.

We then employ the difference-in-differences method to compare the performance difference between the treatment and control groups. This empirical design has an advantage over simple cross-sectional regression because the effects of within-firm unobservable characteristics are neutralized by our estimations. We compare performance changes from one year before through three years after succession between the treatment and control groups. To be more specific, average treatment effect on the treated (ATT) is calculated using the formula below, where subscript k represents one, two, or three years since conversion, similar to Arnold and Javorcik (2009):

$$ATT_k = \frac{1}{n} \sum \left(ROA_{t+k}^{Treated} - ROA_{t+k}^{Control} \right)$$
$$- \frac{1}{n} \sum \left(ROA_{t-1}^{Treated} - ROA_{t-1}^{Control} \right) \quad (1)$$

The corresponding standard errors are calculated using the following method with STATA's

psmatch2 command, where n is the number of matches (Leuven and Sianesi, 2003):

$$SE_k = \sqrt{\begin{array}{l} \dfrac{1}{n} VAR\left(ROA_{t+k} - ROA_{t-1} | Treatment = 1\right) \\ + \dfrac{1}{n} VAR\left(ROA_{t+k} - ROA_{t-1} | Control = 1\right) \end{array}}$$

(2)

A simple t-test is then employed to confirm whether the accumulated difference between these two groups is significant. Because we expect that the gains from transition will be greater (1) when there is a high level of family and institutional ownership but a low level of family legacy, (2) when outgoing family CEOs are not founders, and (3) when professional managers are from elite universities, we examine whether the hypothesized relationships would be stronger in one subgroup than the other, analogous to De Loecker (2007) and Girma and Gorg (2007).

In order to demonstrate that the observed performance differential is not driven by the CEO succession event but by the transition to professional management, we also compare the performance between family heir succession and continuing family CEO management, equivalent to an experimental placebo test. This allows us to disentangle managerial talent effects from the CEO succession effect per se. If family firms that transition from family to professional management outperform continuing family management and if family firms that experienced family heir succession show no difference compared to those with continuing family management, then we can rule out a succession effect as the cause and interpret professionally managed firms' superior performance as attributable to the superior managerial talents of professional CEOs.

Variables

We use the operating return on assets (*OROA*), defined as the operating income divided by the book value of total assets, as our main performance indicator. This measure has an advantage over return on assets (*ROA*), defined as ordinary income divided by the book value of total assets, in that it provides a return metric that is not sensitive to a firm's capital structure. Nonetheless, our results do not vary when we use ROA.

We employ various factors that may prompt a transition from family to professional management

and family heir succession. Previous studies find a negative relationship between past firm performance and CEO succession (Cannella and Lubatkin, 1993). Thus, we expect that poor past firm performance, as reflected in OROA, will increase the probability of CEO turnover. In addition, we examine the effect of *sales growth*, defined as the logarithm of the firm's current year sales less the logarithm of its sales one year earlier, and *employee growth*, defined as the logarithm of the firm's current year employees less the logarithm of its employees one year earlier, as alternative ways to measure performance. These two variables may have some impact on the likelihood of CEO succession, as Japanese firms are known to care for employment and growth in addition to profitability (Aoki, 1990). We use the natural logarithm of sales and employees because the differences in the natural logarithm of these variables can be interpreted as percent changes over time. To control for any size-related factors, we measure *firm size* as the logarithm of the book value of total assets. Following Cannella and Lubatkin (1993), we measure *firm risk* as the fluctuation of a firm's industry-adjusted profitability over the previous three years. This industry-adjusted fluctuation is analogous to unsystematic firm risk since industry-level fluctuation of profitability can be common to all firms in the same industry.

Next, we consider ownership and board. *Family ownership* is measured as the percent of shares held by family members among the top 10 largest shareholders of the total outstanding shares, representing the ownership and control power of the family. We expect that firms with large family ownership will not transition to professional management, opting instead for family heir succession as a way to pursue their own familial socioemotional wealth. *Institutional ownership* is measured as the percent of shares held by banks, insurance companies, corporations (excluding those related to founding families), and foreign investors, among the top 10 largest shareholders of the total outstanding shares. We expect that firms with large institutional ownership will prefer professional managers over family heirs. We define *family firm name* as a dummy variable that takes a value of 1 if a firm bears the name of the founding family and 0 if not, reflecting an implicit form of family legacy. We expect that firms with a family name to be less likely to transition to professional management and more likely to pursue family heir succession. *Number of family*

members on the board indicates the total number of family members on the board and represents the pool of potential family members who could replace the incumbent family CEO. We expect a positive relationship between *number of family members on the board* and the likelihood of family heir succession, but not professional management transition. In addition, we consider the talents of potential family and professional managers represented on the board. *The ratio of elite nonfamily members* on the board and *the ratio of elite family members* on the board represent the talented nonfamily/family member pools on the board who attended elite universities, i.e., seven former imperial universities (Tokyo, Kyoto, Osaka, Nagoya, Tohoku, Hokkaido, and Kyusyu) and two other universities (Hitotsubashi and Kobe), consistent with Mehrotra *et al.*'s classification (2013), which are expected to have a positive relationship with both professional management transition and family heir succession.

We also control for outgoing CEO characteristics. We include a *founder CEO dummy* variable, which takes a value of 1 if the outgoing CEO is a founder and 0 if not, to control for the founder effect. In order to control for age and tenure effects, we include *outgoing CEO age* and *outgoing CEO tenure*. High outgoing CEO age and tenure are expected to increase the probability of CEO turnover. In addition, we include *outgoing CEO duality*, which takes a value of 1 if the outgoing CEO has both a CEO and chairman position and 0 if not, to control for the powerful CEO effect (Zhang and Rajagopalan, 2010).

In order to estimate the likelihood of transitioning to professional management and family heir succession, we lagged all explanatory variables by one year. To address outliers, we Winsorized performance and firm characteristic variables (1% on both tails). To control for industry-wide and year effects, we use two-digit industry dummies and year dummies.

In sum, we include several firm traits, ownership structure type, board composition measures, and outgoing CEO characteristics as explanatory variables in the first-stage CEO succession decision model. In terms of moderating variables for the second-stage post-succession performance model, we use the median values of *family ownership* and *institutional ownership* and divide the samples into high/low subgroups. Specifically, we divide the sample into high/low family legacy subgroups with two variables: *family firm name* and *ex-family*

CEOs status, which is a dichotomous variable that takes a value of 1 when outgoing family CEOs stay in the firm during the three years after CEO succession. In addition, we divide samples into *founders/non-founders* subgroups and *elite/non-elite university graduates* subgroups to test the managerial talents hypotheses.

RESULTS

The determinants of CEO successions

Table 1 provides the descriptive statistics and pairwise correlations of the variables used in the probit analysis of the CEO succession decision. Columns 1–3 of Table 2 display probit regressions for the decision to transition to professional management and Columns 4–6 report probit regressions for the decision to pursue family heir succession, although we do not hypothesize about them explicitly due to our focus on post-succession performance. Column 1 and Column 4 use all cases of professional manager transition and family heir succession, respectively. We then run separate regressions for succession cases from founders (Columns 2 and 5) and from non-founders (Columns 3 and 6). We conduct the matching process separately for other subgroup analyses, according to family and institutional ownership, family legacy, and education background, respectively.

The OROA at time $t-1$ has a negative relationship with the transition to professional management in Column 1 and the same transition from non-founders in Column 3, suggesting that the poorer the performance, the more likely family firms will transition from family CEOs to professional CEOs, especially when outgoing family CEOs are non-founders. Sales growth has a negative relationship with the transition from founder to professional CEO, as in Column 2, indicating that the poorer the sales growth, the more likely the founder chooses a professional manager as successor. Family ownership has a strong negative relationship with the transition from founders to professional management.

The number of family members on the board has no explanatory power regarding the transition to professional CEO. The pool of talented professional managers, as reflected in elite university education, has a positive relationship with the likelihood of professional management transition (Columns 1 and 2), while the pool of talented family

Table 1.   Descriptive statistics

Variables	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) CEO succession dummy (t)	0.01	0.12	1															
(2) OROA (t−1)	0.05	0.05	−0.04*	1														
(3) Sales growth (t−1)	0.08	0.16	−0.04*	0.45*	1													
(4) Employee growth (t−1)	0.01	0.10	−0.02*	0.31*	0.39*	1												
(5) Firm size (t−1)	17.14	1.37	0.01	−0.19*	−0.12*	0.00	1											
(6) Firm risk (t−1)	0.02	0.02	−0.01	0.09*	0.07*	−0.04*	−0.30*	1										
(7) Family ownership (t−1)	17.01	15.56	−0.01	0.14*	0.01	0.04*	−0.27*	0.11*	1									
(8) Institutional ownership (t−1)	26.60	13.77	0.01	−0.11*	−0.05*	−0.03*	0.18*	−0.04*	−0.37*	1								
(9) Family firm name (t−1)	0.32	0.47	−0.01	−0.04*	−0.01	−0.02*	0.01	−0.02*	0.00	−0.10*	1							
(10) Number of family members on the board (t−1)	0.64	0.95	−0.01	0.05*	0.03*	0.02	0.03*	−0.03*	0.11*	−0.19*	0.08*	1						
(11) The ratio of elite nonfamily members (t−1)	0.18	0.16	0.01	0.03*	0.08*	0.01	0.18*	−0.02*	−0.23*	0.17*	0.02*	−0.06*	1					
(12) The ratio of elite family members (t−1)	0.16	0.33	−0.01	0.03*	0.04*	0.01	0.05*	−0.02*	−0.05*	0.01	0.06*	0.03*	0.23*	1				
(13) Founder CEO dummy (t−1)	0.22	0.42	0.03*	0.15*	0.11*	0.12*	−0.13*	0.12*	0.15*	−0.08*	−0.15*	−0.04*	−0.09*	−0.09*	1			
(14) Outgoing CEO age (t−1)	58.94	9.10	0.07*	−0.01	−0.02*	−0.02*	0.05*	−0.03*	−0.11*	0.05*	0.01	0.11*	0.07*	0.08*	0.22*	1		
(15) Outgoing CEO tenure (t−1)	14.49	10.92	0.07*	0.05*	0.02*	0.04*	−0.06*	0.01	0.10*	−0.06*	−0.01	−0.04*	−0.09*	−0.03*	0.53*	0.44*	1	
(16) Outgoing CEO duality (t−1)	0.01	0.10	0.04*	−0.01	−0.02	0.00	0.08*	−0.03*	−0.01	0.03*	−0.01	−0.02*	0.02*	0.01	0.05*	0.06*	0.03*	1

$N = 24,485$
*Correlation coefficient is statistically significant at the 1 percent level.

Table 2. Probit models of CEO succession

Succession type	Professional management transition			Family heir succession		
Dependent variable: CEO succession dummy	(1) Whole sample	(2) Founder	(3) Non-founder	(4) Whole sample	(5) Founder	(6) Non-founder
OROA $(t-1)$	−2.78***	−1.08	−3.83***	−0.34	0.76	−0.86
	(0.63)	(1.04)	(0.84)	(0.58)	(1.04)	(0.73)
Sales growth $(t-1)$	−0.28	−0.78*	−0.09	−0.21	−0.42	−0.12
	(0.19)	(0.35)	(0.25)	(0.19)	(0.34)	(0.23)
Employee growth $(t-1)$	−0.18	−0.59	−0.11	−0.52†	0.28	−0.94**
	(0.28)	(0.49)	(0.36)	(0.27)	(0.49)	(0.34)
Firm size $(t-1)$	−0.01	−0.02	0.08×10^{-2}	0.01	0.01	0.03
	(0.02)	(0.04)	(0.03)	(0.02)	(0.04)	(0.02)
Firm risk $(t-1)$	−1.41	0.34	−2.10	0.12	2.09	−0.35
	(1.75)	(2.81)	(2.35)	(1.59)	(2.78)	(2.01)
Family ownership $(t-1)$	0.03×10^{-2}	−0.01**	0.04×10^{-1}†	0.06×10^{-2}	0.03×10^{-1}	0.01×10^{-1}
	(0.02×10^{-1})	(0.04×10^{-1})	(0.02×10^{-1})	(0.02×10^{-1})	(0.03×10^{-1})	(0.02×10^{-1})
Institutional ownership $(t-1)$	0.08×10^{-2}	-0.02×10^{-2}	0.02×10^{-1}	-0.04×10^{-1}*	-0.05×10^{-1}	-0.04×10^{-1}†
	(0.02×10^{-1})	(0.04×10^{-1})	(0.02×10^{-1})	(0.02×10^{-1})	(0.04×10^{-1})	(0.02×10^{-1})
Family firm name $(t-1)$	−0.06	0.07	−0.09	0.08†	−0.01	0.11*
	(0.05)	(0.12)	(0.06)	(0.05)	(0.10)	(0.05)
Number of family members on the board $(t-1)$	−0.04	−0.03	−0.04	0.11***	0.11**	0.12***
	(0.03)	(0.06)	(0.03)	(0.02)	(0.04)	(0.02)
The ratio of elite nonfamily members $(t-1)$	0.53**	1.32***	0.32	−0.20	−0.56†	−0.06
	(0.16)	(0.33)	(0.20)	(0.15)	(0.32)	(0.18)
The ratio of elite family members $(t-1)$	−0.12	−0.33†	−0.06	0.24***	0.41**	0.20**
	(0.08)	(0.18)	(0.09)	(0.06)	(0.13)	(0.07)
Founder CEO dummy $(t-1)$	−0.03			−0.09		
	(0.06)			(0.06)		
Outgoing CEO age $(t-1)$	0.02***	0.02***	0.02***	0.05***	0.06***	0.05***
	(0.03×10^{-1})	(0.06×10^{-1})	(0.04×10^{-1})	(0.03×10^{-1})	(0.06×10^{-1})	(0.04×10^{-1})
Outgoing CEO tenure $(t-1)$	0.01***	-0.01×10^{-1}	0.02***	0.02***	0.06×10^{-1}	0.02***
	(0.03×10^{-1})	(0.05×10^{-1})	(0.03×10^{-1})	(0.02×10^{-1})	(0.04×10^{-1})	(0.03×10^{-1})
Outgoing CEO duality $(t-1)$	0.44**	0.23	0.49*	0.42**	0.23	0.66***
	(0.15)	(0.23)	(0.21)	(0.14)	(0.22)	(0.20)
Number of observation	23,025	4,516	16,593	23,046	4,771	17,789
Pseudo R^2	0.10	0.13	0.11	0.18	0.20	0.18
Probability $> \chi^2$	0.00	0.00	0.00	0.00	0.00	0.00
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors appear in parentheses.
†, *, **, *** indicates statistical significance at the 10, 5, 1, and 0.1 percent level, respectively.

members has a negative relationship with professional management transition from founders (Column 2). Outgoing CEO age and tenure both have strong positive relationships with the transition to professional CEO, though outgoing CEO tenure is not significant when the outgoing CEO is a founder. CEO duality has a positive relationship with the transition to professional CEO in the whole sample, as well as in the non-founder subsample.

Yet, family heir succession shows no relation with OROA or sales growth. Family heir succession does show a negative relationship with employee

growth rate in the case of the whole sample and non-founder CEO departure (Columns 4 and 6). Firm size, firm risk, and family ownership do not have a significant relationship with family heir succession. Institutional ownership has a negative relationship with family heir succession in the case of the whole sample and the non-founder CEO subsample (Columns 4 and 6), suggesting that institutional shareholders do not favor family heirs. Family firm name has a positive relationship with family heir successions in both the whole sample and the non-founder subsample (Columns 4 and 6),

demonstrating the family legacy effect. The number of family members on the board also shows a strong positive relationship with the likelihood of family heir succession. The pool of talented family members, reflected in elite university education, has a significantly positive impact on the likelihood of family heir succession. Family heir succession is more likely when an outgoing CEO is old and has served a long tenure. CEO duality has a positive relationship with family heir succession in the whole sample, as well as in the non-founder subsample. In sum, family heir succession seems to be conditioned by family legacy and the availability of family member talent, but it is not sensitive to firm performance.

Post-succession performance

Based on the probit models in Table 2, we calculate the propensity scores of professional management transition and family heir succession in order to construct control groups for the post-succession performance comparison. Table 3a shows the operating ROA and ROA for both the treatment (transition from family to professional CEO) and control (continuing family CEO) groups over time, with the matching condition of propensity score radius (0.01) within the two-digit SIC industry and within the same year. This procedure generates matches for 307 of the 386 cases of transition to professional CEO. In the last row of Table 3a and b, we provide the summary results of the hotelling tests for balancing. (See Appendix S1 for more detail on various balancing tests).

The average treatment effect on the treated (ATT) from the difference-in-differences estimation denotes the differences in cumulative change in performance of the treatment group relative to the cumulative change in performance of the control group. We compare the cumulative performance change from the year prior to the transition event. Table 3a shows that the performance gap between the treatment and control groups widens from time $t+1$. The ATT, as defined earlier in Equation 1, of professional manager succession in OROA is 0.94 percentage points, i.e., $(4.19-3.53)-(3.60-3.89)$ at time $t+1$, 1.12 percentage points at time $t+2$, i.e., $(4.40-3.57)-(3.60-3.89)$, and 0.85 percentage points at time $t+3$, i.e., $(4.06-3.49)-(3.60-3.89)$, significant at the 1, 1, and 5 percent levels, respectively. ROA, our alternative measure of firm performance,

shows a very similar trend. In sum, these results imply that family firms that transition to professional CEOs outperform comparable family firms that maintain family management.

Although we find significant performance differences between firms that transition from family to professional CEOs and those that maintain family CEOs, we cannot yet determine whether such differences are attributable to the superior talents of professional managers or from CEO succession effects per se, which enable strategic changes unavailable to incumbent management. Table 3b shows the difference-in-differences of firm profitability between the family heir succession group and the continuing family CEO group, which serves as a placebo test. It appears that there is no significant difference in performance between the two groups for the entire period, thereby suggesting that mere CEO succession effects are not at play. Thus, we find evidence that the performance improvement can be attributed to the superior talents of professional managers.

Family ownership and legacy, and managerial talents

While we find general support that firms that transition from family to professional CEOs improve firm performance, we explore whether or not such performance improvements depend on agency cost-related contingencies like family ownership, institutional ownership, or family legacy, as in Hypotheses 1–4.

For family ownership, we calculate the median value of family ownership at one year prior to the professional management succession event (12.8%) and, based on this, classify firms into high/low family ownership subgroups. Table 4a shows that the ATT of professional CEO succession on high family ownership group in OROA is 1.26 percentage points at time $t+2$ and 0.93 percentage points at time $t+3$, differences that are statistically significant at the 5 and 10 percent levels, respectively. The ATT of the low ownership group is not significant. Thus, we find support for Hypothesis 1, that the performance improvement associated with the transition to professional management is stronger in the high family ownership subgroup compared to the low family ownership subgroup, thereby suggesting that professional managers should be monitored in order to minimize agency costs from separation of ownership and control.

Table 3.   Financial performance of professional management transition and family heir succession

(a) Professional management transition

Variables:	OROA					ROA				
Year	$t-1$	t	$t+1$	$t+2$	$t+3$	$t-1$	t	$t+1$	$t+2$	$t+3$
Professional management transition	3.60	3.94	4.19	4.40	4.06	2.80	3.19	3.58	3.84	3.49
Continuing family management	3.89	3.62	3.53	3.57	3.49	3.15	3.09	3.00	3.14	3.10
ATT			0.94**	1.12**	0.85*			0.94**	1.05**	0.75†
S.E.			0.36	0.41	0.41			0.36	0.41	0.43
# matches	307	307	307	307	307	305	305	305	305	305
Hotelling test for balancing	*F* value = 0.51		Probability > *F* = 0.94			*F* value = 0.51		Probability > *F* = 0.94		

(b) Family heir succession

Variables:	OROA					ROA				
Year	$t-1$	t	$t+1$	$t+2$	$t+3$	$t-1$	t	$t+1$	$t+2$	$t+3$
Family heir succession	4.80	4.52	4.47	4.31	4.10	4.23	3.99	4.01	3.86	3.72
Continuing family management	4.85	4.50	4.42	4.12	3.94	4.28	3.96	3.87	3.62	3.56
ATT			0.11	0.24	0.21			0.19	0.29	0.21
S.E.			0.28	0.31	0.33			0.29	0.33	0.34
# matches	385	385	385	385	385	385	385	385	385	385
Hotelling test for balancing	*F* value = 0.84		Probability > *F* = 0.63			*F* value = 0.84		Probability > *F* = 0.63		

†, *, ** indicates statistical significance at the 10, 5, and 1 percent level, respectively.

Similarly, we divide the sample into high/low institutional ownership subgroups based on the median value of institutional ownership at one year prior to the succession event (26.18%). Table 4b shows that the ATT of professional manager succession in the high institutional ownership group is weakly significant at time $t+2$ but not significant at time $t+3$. The same ATT in the low ownership subgroup is also weakly significant only at time $t+3$. Thus, it appears that the level of institutional ownership is not an important contingency factor for the post-succession performance of professional managers, providing no support for Hypothesis 2.

Next, in order to test the effect of an explicit form of family legacy, we divide our professional manager succession samples into two subgroups: those in which outgoing family CEOs remain in the firms as chairman of the board, advisor, or any other senior position during the three years after succession (high family legacy) and those in which outgoing family CEOs leave the company after succession (low family legacy). Table 4c shows that the ATT of professional manager succession in the low family legacy group in OROA is 1.48 percentage points at time $t+1$, 1.56 percentage points at time $t+2$, and 1.77 percentage points at

time $t+3$, differences that are all significant at the 5 percent level. The ATT of high family legacy groups is not significant. Thus, we find support for Hypothesis 3—that the performance improvement associated with the transition to professional management is stronger when professional managers are not under the supervision of ex-family CEOs.

Table 4d examines the effect of an implicit form of family legacy: that derived from family firm name. We classify our professional manager succession samples into two subgroups: those that bear the family name (high family legacy) and those that do not (low family legacy). We find evidence that performance improvement associated with the transition to professional CEO occurs only in the low family legacy group. The ATT of professional manager succession in the low family legacy group is 0.79 percentage points at time $t+1$, 1.42 percentage points at time $t+2$, and 1.00 percentage points at time $t+3$, differences that are statistically significant at the 10, 1, and 5 percent levels, respectively. Thus, we find support for Hypothesis 4—that the performance improvement associated with the transition to professional management is stronger when firms do not keep family names.

Table 4. Family and institutional ownership and family legacy effects in the performance of professional management transition

(a) Family ownership (Hypothesis 1)

Variables: OROA	Low ownership group					High ownership group				
Year	$t-1$	t	$t+1$	$t+2$	$t+3$	$t-1$	t	$t+1$	$t+2$	$t+3$
Professional management transition	2.96	3.18	3.30	3.84	3.68	4.10	4.56	4.71	4.84	4.23
Continuing family management	3.36	3.07	3.34	3.45	3.39	4.42	4.57	4.48	3.89	3.61
ATT			0.36	0.78	0.69			0.54	1.26*	0.93†
S.E.			0.52	0.54	0.58			0.45	0.58	0.53
# matches	152	152	152	152	152	152	152	152	152	152
Hotelling test for balancing	*F* value = 0.50	Probability > *F* = 0.94				*F* value = 0.74	Probability > *F* = 0.74			

(b) Institutional ownership (Hypothesis 2)

Variables: OROA	Low ownership group					High ownership group				
Year	$t-1$	t	$t+1$	$t+2$	$t+3$	$t-1$	t	$t+1$	$t+2$	$t+3$
Professional management transition	3.91	4.52	4.84	4.91	4.96	3.28	3.52	3.63	4.12	3.41
Continuing family management	4.55	4.56	4.62	4.57	4.23	3.21	3.15	3.01	3.05	3.24
ATT			0.87	0.98	1.37†			0.55	1.00†	0.10
S.E.			0.56	0.63	0.68			0.46	0.57	0.54
# matches	149	149	149	149	149	146	146	146	146	146
Hotelling test for balancing	*F* value = 0.28	Probability > *F* = 0.99				*F* value = 0.72	Probability > *F* = 0.77			

(c) Family legacy: ex-family CEOs stay/leave (Hypothesis 3)

Variables: OROA	High family legacy (ex-family CEOs stay in the firm)					Low family legacy (ex-family CEOs leave the firm)				
Year	$t-1$	t	$t+1$	$t+2$	$t+3$	$t-1$	t	$t+1$	$t+2$	$t+3$
Professional management transition	3.61	3.44	3.59	3.81	3.39	3.56	4.21	4.41	4.63	4.43
Continuing family management	3.66	3.59	3.61	3.65	3.64	3.90	3.37	3.27	3.41	3.00
ATT			0.03	0.20	−0.21			1.48*	1.56*	1.77*
S.E.			0.40	0.45	0.49			0.59	0.69	0.87
# matches	158	158	158	158	158	152	152	152	152	152
Hotelling test for balancing	*F* value = 0.51	Probability > *F* = 0.93				*F* value = 0.22	Probability > *F* = 0.99			

(d) Family legacy: family firm name (Hypothesis 4)

Variables: OROA	High family legacy (family firm name)					Low family legacy (no family firm name)				
Year	$t-1$	t	$t+1$	$t+2$	$t+3$	$t-1$	t	$t+1$	$t+2$	$t+3$
Professional management transition	3.49	3.32	3.63	3.41	3.46	3.52	4.06	4.27	4.78	4.24
Continuing family management	3.68	4.23	4.02	3.62	3.73	3.93	3.95	3.89	3.77	3.64
ATT			−0.20	−0.02	−0.08			0.79†	1.42**	1.00*
S.E.			0.51	0.54	0.59			0.42	0.51	0.47
# matches	93	93	93	93	93	222	222	222	222	222
Hotelling test for balancing	*F* value = 0.47	Probability > *F* = 0.95				*F* value = 0.27	Probability > *F* = 0.99			

†, *, ** indicates statistical significance at the 10, 5, and 1 percent level, respectively.

Table 5.   Founders and education effects in the performance of professional management transition

(a) Founder effects (Hypothesis 5)

Variables: OROA	Professional management transition from founders					Professional management transition from non-founders				
Year	$t-1$	t	$t+1$	$t+2$	$t+3$	$t-1$	t	$t+1$	$t+2$	$t+3$
Professional management transition	5.51	5.98	5.64	6.12	5.73	2.86	3.21	3.65	3.87	3.42
Continuing family management	5.40	4.90	4.81	4.72	4.46	3.51	3.38	3.05	2.77	2.54
ATT			0.72	1.30	1.16			1.25**	1.75***	1.53**
S.E.			0.79	0.87	0.92			0.45	0.51	0.47
# matches	81	81	81	81	81	197	197	197	197	197
Hotelling test for balancing	*F* value = 0.51 Probability > *F* = 0.93					*F* value = 0.94 Probability > *F* = 0.52				

(b) Education backgrounds of professional managers (Hypothesis 6)

Variables: OROA	Non-elite university graduates					Elite university graduates				
Year	$t-1$	t	$t+1$	$t+2$	$t+3$	$t-1$	t	$t+1$	$t+2$	$t+3$
Professional management transition	3.43	3.93	3.94	4.20	3.79	3.95	3.93	4.83	4.86	4.37
Continuing family management	4.03	4.27	4.12	3.92	3.68	4.31	4.01	4.16	3.17	2.98
ATT			0.42	0.88†	0.72			1.04†	2.04**	1.75*
S.E.			0.45	0.51	0.50			0.57	0.63	0.70
# matches	218	218	218	218	218	71	71	71	71	71
Hotelling test for balancing	*F* value = 0.41 Probability > *F* = 0.98					*F* value = 0.41 Probability > *F* = 0.97				

†, *, **, *** indicates statistical significance at the 10, 5, 1, and 0.1 percent level, respectively.

Hypothesis 5 expects that the likelihood of professional managers outperforming continuing family management will be higher when the transition moves from non-founders as opposed to founders. We divide cases of transition to professional CEOs into two subgroups—transition from founders and transition from non-founders—and match each with continuing family firms run by founders and non-founders, respectively. The results in Table 5a indicate that the performance improvements associated with the transition to professional CEO are positive and significant in firms formerly managed by non-founders, i.e., 1.25, 1.75, and 1.53 percentage points at times $t+1$, $t+2$, and $t+3$, respectively. However, professional manager CEOs whose predecessors are founders do not show any significant performance improvement compared to family firms with founders as CEOs. Thus, results suggest that the talents of professional managers may be superior to those of non-founder family CEOs, but not necessarily to founders, supporting Hypothesis 5.

In order to test the impact of human talents, we divide professional manager succession cases into two subgroups based on graduation from elite universities. Table 5b shows that professional managers from elite universities outperform continuing family management by 1.04 percentage points at time $t+1$, 2.04 percentage points at time $t+2$, and 1.75 percentage points at time $t+3$. However, professional managers from non-elite universities turn marginally significant and positive only at time $t+2$ yet do not exhibit any significant improvement at time $t+3$. Since there exists no statistical test to determine whether higher performance improvement in the elite university graduate professional managers subgroup (2.04% points at time $t+2$) is significantly higher than that in the non-elite graduate professional managers (0.88% points at time $t+2$), we offer only weak support for Hypothesis 6. The fact that both elite graduate professional and other professional managers outperform family managers means that professional managers must be hard-working individuals who accede to the CEO position based on managerial talents.[2]

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[2] We perform similar subgroup analyses for family heir succession, as in Tables 4 and 5. There was no significant improvement of performance attributable to family heir transition in all

CONCLUSION AND DISCUSSION

This study finds substantial performance improvement for family firms that convert to professional CEOs, but not for firms that opt for family heir succession. We can interpret this performance improvement as attributable to the superior management talents of professional CEOs, as opposed to simple CEO succession effects. Furthermore, such performance improvement is more pronounced when a family maintains a high level of ownership but does not leave behind a strong family legacy, when the transition begins with non-founders and when professional managers graduated from elite universities.

This study has several important implications in light of earlier works that generated confounding results on the relative performance of family vs. professionally managed firms. First, this study demonstrates that researchers need to capture the performance improvement associated with the transition to professional management more precisely without merely comparing the average performances between these two groups. Since there are many strategic choices associated with family and professional management, and there can be pros and cons for each strategic choice, a mere comparison of the average performances is bound to generate confounding results. By virtue of our empirical research design, focusing on the CEO succession event and employing the recent methodological development using propensity score matching and difference-in-differences, we are able to identify the performance implication of the transition from family to professional manager CEO succession more precisely.

Second, this study suggests that researchers need a more nuanced approach to compare performances between family and professionally managed firms. Prior works in the CEO succession literature focus mostly on the succession decision to the exclusion of post-succession performance.

This study demonstrates that appointing a professional manager CEO is not the end of the family-to-professional management transition. Rather, it marks the beginning of the more complex, on-going interactions between family owners and professional managers. In this study, we extend the logic of the behavioral agency model (Martin *et al.*, 2013; Wiseman and Gomez-Mejia, 1998) by demonstrating that, even after professional managers are in charge, families continue trying to balance their current and prospective wealth. Families try to tap superior managerial talents of professional managers but control their agency costs, while at the same time pursuing their own socioemotional wealth by exercising family legacy. This study demonstrates that the post-succession performance of the family-to-professional management transition depends on how to maximize the managerial talents of professional managers while minimizing the agency costs of both professional managers and family owners.

This study makes several important theoretical contributions to the literature. First, it contributes to the burgeoning literature of family business. While there have been numerous studies of family firms, efforts to identify contingencies for the relative performance of family CEOs vs. professional manager CEOs have been limited. This study combines the recent development of the behavioral agency theory and managerial talents to derive theoretically driven contingencies on the relative performance of family CEOs vs. professional manager CEOs. While the behavioral agency model was previously applied to the managerial risk taking with respect to stock option (Martin *et al.*, 2013; Wiseman and Gomez-Mejia, 1998), this study applies the model to the setting of family owners who need to balance between current and prospective financial and socioemotional wealth. In doing so, this study sets the boundary conditions for the socioemotional wealth perspective of family firms.

Second, this study contributes to the CEO succession literature. Most prior works on CEO succession were conducted in the context of publicly listed firms without distinguishing between family firms and nonfamily firms. While we do not explicitly hypothesize regarding first-stage succession decisions, our results demonstrate core differences between family firms' choice to transition to professional management and continue with family heir succession. When firm performance deteriorates, families may be forced to tap into talent pools

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contingencies, except for institutional ownership and elite university graduation. The high institutional ownership subgroup outperforms continuing family managers by 0.85 percentage points at time $t+2$, significant at the 5 percent level, thus suggesting that monitoring by institutional shareholders can improve the post-succession performance of family heirs. Elite university graduate family heirs also outperform continuing family managers by 2.46 percentage points at time $t+3$, significant at the 5 percent level, providing additional support for the importance of human talent. Results are available upon request.

of professional managers. On the other hand, families may choose their own heirs when those heirs graduate from elite universities.

We also find that professional managers do not perform to potential when outgoing family CEOs stay in firms in a capacity to supervise them, which contrasts with the higher performance of "relay CEO succession" among professional managers (Zhang and Rajagopalan, 2004). Unlike the relay CEO succession in the case of professional managers, co-habitation of ex-family CEOs and professional manager CEOs can foster mistrust and conflict between them (Cruz *et al.*, 2010). As such, this study contributes to the CEO succession literature by underscoring the need to pay attention to the specific contingencies of family firms.

This study sheds lights on areas for future studies. First, researchers may examine complex inside-family dynamics by using full family trees. For example, the CEO succession decision and post-succession performance of family firms may be contingent upon whether a founding family has a son or not or whether an extended family provides a deeper talent pool. Potential competition and conflict among family members offers another related area to explore. Second, given our focus on the transition from family to professional management, we do not fully explore contingencies related to family heir succession. Obviously, some family heirs outperform others. Future studies may explore what contingencies may explain this variance. This study demonstrates that family firms must balance their current and future financial and socioemotional wealth. It would be interesting to see how founding families manage this balancing act after choosing family heirs.

Third, we do not consider cases of interim professional manager transitions where professional managers temporarily run firms until family heirs take over. However, it would be interesting to examine how families groom their heirs, while temporally and partially relying on professional managers. Furthermore, the right mix of family and professional managers in top management would be an interesting topic for future research. Lastly, while Japan provides an ideal research setting to control for managerial experiences due to its on-the-job training and internal promotion practices, future research may want to extend this research in other countries where formal management education and recruitment of external talents are popular in order to gauge how much

outside-firm and outside-industry experiences are important for the performance of professional management transition.

Overall, this study suggests that family firms may have different objectives, constraints, and opportunities than professionally managed firms. Families attempt to strike a balance between their desire to enjoy socioemotional wealth (e.g., maintaining family firm name and appointing family heirs as the next CEO) and navigating constraints (e.g., limitations in human talents within the family and protecting their prospective wealth). Thus, this study calls for more research on how family firms can unleash the power of professional managers or better groom family heirs in order to improve family firm performance, an important area given the global predominance of family firms.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix S1. Balancing tests.