# Family Control without Ownership: Evidence from Publicly-traded Japanese Firms

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**Abstract**

We document that 50% of public listed Japanese family firms are still under the control of the founding family 50 years after their IPO. The founding family's control of top management persists even after its ownership becomes insignificant and is achieved without the use of dual class shares or pyramids. Examples include eponymous firms such as Casio, Toyota and Suzuki. Such firms differ in accounting performance and market valuation from traditional family firms as well as from non-family firms. While confirming the role of finance in diluting family ownership over time, we document that the longevity of family control is supported by variables that proxy for family assets such as legacy and talent.

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*"Ever since he was a little boy, his mother always told him, 'One day you'll be president.'"* [1]
About Toyota's President, Akio Toyoda

# 1. Introduction

Family control of the modern corporation is ubiquitous even in countries with well-developed capital markets. [2] How founding families keep control over their firms in the face of growth imperatives is a continuing puzzle. Rajan and Zingales (1996) suggest that the ease of external financing for capital investments dictates both the evolution of founding control over time, as well as the realized level of growth. Similarly, Franks et al. (2011) document that family ownership dilution in the UK and continental Europe was largely shaped by external financing needs. These studies focus on control derived from equity ownership and conclude in favour of finance as the biggest, if not the sole, determinant of the loss of founder control over time.

In this study, we extend the literature by documenting family control of top management in publicly traded Japanese firms with little or no family ownership. Anecdotal evidence of control without ownership exists from other advanced economies including the U.S.; however, we show in our literature review that such cases often rely on the use of control enhancing mechanisms, and that control without ownership is not time persistent. Our paper is the first large sample study documenting the prevalence of family control without ownership in an advanced economy without the use of control enhancing mechanisms. Furthermore, we provide novel evidence that such firms differ, in accounting performance and firm value, both from firms with family ownership and control as well as from firms without either.

We employ a unique hand collected dataset of all listed firms in post-war Japan and begin by charting the evolution of family control from the early 1960s through 2010. Japanese

[1] Jason Clenfield and Yuki, Doubting Toyota Prince Defeats Crisis to Prove Self Wrong: Cars, Bloomberg, November 21, 2013, accessed on January 18, 2018, http://www.bloomberg.com/news/2013-11-20/doubting-toyota-prince-defeats-crisis-to-prove-self-wrong-cars.html.

[2] See, for example, La Porta, Lopez-de-Silanes, and Shleifer (1999), Morck, Stangeland, and Yeung (2000), Anderson and Reeb (2003), Morck, Wolfenzon, and Yeung (2005), and Villanlonga and Amit (2006).

governance system is ideal for studying family control without ownership: unlike the U.S., Japan does not permit dual class voting shares, so the one-share-one-vote rule applies. Unlike other Asian countries, pyramidal family group ownership, as a rule, is absent in Japan.[3] Thus voting control and ownership go hand in hand in Japan, and a loss in ownership is numerically identical to a loss in voting control.

In our extended literature review (Internet Appendix) we document that it is common to define family firms using a binary definition based on ownership (25%, 20%, 10% or even 5% of outstanding share), sometimes supplemented by board presence.[4] We find that such binary cut-offs are *ad hoc* by necessity and end up as being excessively restrictive in describing family control. To illustrate we highlight three eponymous family firms in Japan: Casio, Toyota and Suzuki. Family members have taken turns to hold top leadership positions in these firms as President or Chairman for generations even when the founding family's ownership stake was diluted to insignificant levels. We document that between 10% and 30% of listed Japanese firms are managed by heirs of the founding family who have little reported ownership in the firm.

In the empirical literature, firms controlled by families with little ownership are categorized most often as non-family firm and sometimes grouped with family-firms, but are seldom accorded their own category. Studies of Japanese family firms defined on the basis of ownership thresholds have generally found a low fraction of family firms among publicly traded Japanese firms (see, e.g., Claessens, Djankov, and Lang, 2000; Masulis, Pham, and Zein, 2011). However, including firms with family control without ownership, we find that the share of family firms in Japan more than doubles. Equally interestingly, we document the longevity of family control following the firm's IPO – almost 50% of firms listed by families or individuals are family controlled (managed and/or owned) for at least 50 years following their IPO. Furthermore, looking at accounting performance and firm value, we provide novel

[3] The famous cross-shareholding *keiretsu* groups are not family groups (Nakatani, 1984; Morck and Nakamura, 1999, 2000). The founding families have lost control of their groups (*zaibatsu*) after being nationalized by the Allied Occupation right after WWII.

[4] See, for e.g., La Porta, Lopez-de-Silanes, and Shleifer (1999), Faccio and Lang (2002), Anderson and Reeb (2003), Villalonga and Amit (2006), Franks, Mayer, and Rossi (2009), and Foley and Greenwood (2009).

evidence that firms where families control without significant ownership are different from both traditional family firms as well as from non-family firms. We are not aware of corresponding statistics from other countries.

We also contribute to the literature by providing insights into the important issue of why families *exit* the firms their ancestors have founded. Existing empirical studies focus on the dynamics of family ownership and show that finance plays an important role in the dilution of ownership. Typically this happens when growth imperatives require external equity infusions, and when equity markets provide a ready source of capital.[5] Well-functioning equity markets step in to finance growth, and this process is generally responsible for the decline of founders' ownership after she lists her firm.

As contended by Bennedsen and Fan (2014) and Bennedsen et al. (2015), we show that an important and hitherto overseen determinant of future family ownership and control is the strength of intangible "family assets". Family assets are the relationship specific (Williamson, 1985), and often intangible, investments made by the founding families that add to firm value, much as organizational capital does.[6] Key examples of family assets include the legacy of the family business as embodied in the family name and reputation, family networks in business and politics, and the family talent pool.

We document how variation in family assets correlate with variation in time persistence of family ownership and family control. We include an array of proxies for family assets and finance variables in exploring the determinants of the decay in the founding family's control over time. Our main results are that more profitable firms, and those managed by younger CEOs, are less likely to transition to lower levels of family control, whereas firms that need external capital are more likely to do so. We show that family control

[5] For example, Franks, Mayer, and Rossi (2009) show that founding family equity stakes got diluted in the U.K. largely as a result of capital investments via M&A activity. Helwege, Pirinsky, and Stulz (2007) show that the ownership by blockholders declines rapidly after the IPO, and that this happens faster for firms with more liquid stocks. Franks et al. (2011) confirm these findings in a larger international setting, linking the ease of equity dilution specifically to investor protection, again underscoring the importance of finance in determining post-IPO ownership decline in the United States. Finally, Klasa (2007) documents that the founding family's sale of their controlling interest is correlated to poor performance and firm age among the U.S. firms.

[6] See, for e.g., Lev and Radhakrishnan (2003) and Eisfeldt and Papanikolaou (2013, 2014).

is more likely to be maintained in firms that bear the founding family name and have capable heirs.[7] Families also sustain control through establishing a close partnership with investors. In short, our evidence underscores the *joint* importance of financial and family factors in the evolution of ownership and management control.

The rest of the paper is organized as follows. We begin Section 2 with a short summary of the Internet Appendix review of the literature, describing how firms with family control but little ownership have been categorized in previous studies. In section 3, we provide case studies of Casio, Toyota and Suzuki to illustrate how families retain control of their companies when ownership is significantly and materially diluted. Section 4 describes our data on publicly traded firms in Japan. Section 5 explores the evolution of ownership and control in both IPO- and calendar time. In section 6, we explore the correlation between ownership, control and performance. Section 7 analyses factors that impact the transition of firms into and out of family ownership and control. We conclude in Section 8.

## 2. Literature Survey: Categorization of family control in the absence of material ownership.

In this section we provide a short extract of our summary of 100 empirical studies of family firms (see Internet Appendix for the full survey). The purpose is to identify how empirical research has defined and categorized family firms and to document how existing studies have treated firms where the family control without holding any material ownership.

The literature has highlighted five dimensions in the definition of family firms:

(1) ***Ownership*****:** Share of family ownership, defined as nominal shares or cash flow rights.

**(2)** ***Control*****:** Share of voting rights including those derived from additional control enhancing mechanisms, namely dual class shares and pyramidal ownership.

**(3)** ***Management:*** Representation of family in top-management positions.

[7] Mehrotra et al. (2013) describes how the practice of adult adoptions, where founders, faced with either non-existent or inadequate blood heirs, frequently adopt outsiders into the family and appoint him as a successor, has been a common governance feature in Japanese business families.

**(4)** ***Engagement:*** The number of family members engaged in the firm through employment, management and/or board representation.

**(5)** ***Succession*****.** The realization of family succession or express intent for the same from the current family leader(s).

Empirical research on family firms based on a large dataset requires that definitions are quantified in a consistent manner. This is challenging for at least five reasons: First, it requires aggregation of the multiple dimensions described above. Second, many dimensions are not binary. For instance, ownership is a continuum and control is often a non-linear function of ownership. Third, a researcher will find it challenging to define intent in family successions. Fourth, the ability to observe ownership is limited by national corporate laws. Fifth, the ability to observe management and employee involvement varies across countries and across data registers.

In this study, we use the following categorization in order to analyse the firms where the founding family has control but little or no ownership: ***Type 1*** firms are classic family firms – the family owns a significant stake in the firm and a family member is the CEO or president of the company; ***Type 2*** firms are characterized by family management but little ownership in the firm. The family does not own a significant stake in the firm but a family member is CEO or president. ***Type 3*** represents professionalized family firms where the family owns a significant stake in the firm, but the CEO and president are not family members. ***Type 4*** firms represent former family firms where the family has exited on both ownership and management dimensions*.* ***NFF*** *represents n*on Family Firms, that is, firms that have never been family firms.

Given the multidimensional definition of family ownership, involvement and control a natural approach is to start from all firms and then analyse how family structures impact governance structure (see, e.g., Bennedsen et al., 2007; Bertrand and Schoar, 2006). However, most papers in the literature take a binary approach and categorize firms into family or non-family firms. Ownership is a key factor in the binary categorization: Ang, Cole, and Lin (2000), Barontini and Bozzi (2018), Barth et al. (2005), Franks et al. (2005), Franks et al. (2011), Klasa (2007), Kraus et al. (2016); and Maury (2006) define family firms based only on the

ownership stake a family possesses. Ownership threshold requirements to qualify as family firms vary between 5% and 50%. Using ownership alone to classify family firms, these studies classify firms where the CEO and/or board chairman is from the founding family but has little ownership as non-family firms. Using the above categorization, family firms are Type 1 and Type 3, non-family firms include Type 2, Type 4 and *NFF.*

Similarly, studies that define family firms based on both family ownership thresholds *as well as* family members being active in management or having a board seat (e.g., Barontini and Bozzi, 2018; Barontini and Caprio, 2006; De Massis et al., 2016; Klasa, 2007) will mis-categorize Type 2 firms as non-family. By construction, these studies assign Type 2 firms in the same category as Type 4 firms. Thus family firms include only Type 1 firms and non-family firms include Type 2, Type 3 and Type 4 and *NFF.*

In a majority of studies, family firms are defined broadly using family ownership above a certain threshold and/or family members serving as top-management or on the board (e.g., Anderson and Reeb, 2003; Anderson, Mansi, and Reeb, 2003; Chen et al., 2010; Cheng, 2014; Cronqvist and Nilsson, 2003; Deephouse and Jaskiewicz, 2013; Denis and Denis, 1994; Masulis, Pham, and Zein, 2011; Mehrotra et al., 2013; Miller et al., 2007; Perez Gonzalez, 2006; Smith and Amoako-Adu, 1999; Villalonga and Amit, 2006). Under this broad definition, family firms, therefore, include Type 2 firms as well as Type 1 and Type 3 firms. Non family firms are Type 4 and *NFF*.

Only a small number of studies acknowledge the existence of Type 2 firms as isolated cases. In these studies the authors provide an example and then proceed to amalgamate such firms into the broader group of family firms that contain Type 1 and Type 3 firms as well. Furthermore, in the handful of cases mentioned in the literature, family control has not been time persistent: they were eventually sold to other companies, many via unsolicited takeovers that ended family control. [8]

[8] Six cases have been proposed as examples of control with little ownership in the literature: the Ablon family controlling the Ogden company (Anderson and Reeb, 2003); the Cadbury and Schweppes families controlling their namesake companies, and the three GKN families controlling the GKN company (all in Franks et al, 2011); family control of Tektronik during 1994–1996 (Villalonga and Amitt, 2006); and, finally, the family control of the beer company Anheuser-Busch (the referee). Ogden was acquired by Danielson Holding Company in 2004 and is called Covanta Energy today. Franks et al. highlight the Cadbury family's control over the management of

To summarize, our extensive survey of the literature shows that there is no single study that analyses Type 2 firms as a separate category identified as founding families occupying top management positions without possessing material ownership. Where Type 2 firms have been discussed, they have been grouped with a broader general group of family firms and the highlighted cases have not been time persistent. In this paper we show that Type 2 firms differ in important ways from other types of family and non-family firms. We begin by highlighting 3 cases from Casio, Toyota Motor and Suzuki Motor and mention briefly the non-Japanese case of Banco Santander.

## 3. Case studies: Casio, Toyota Motor, and Suzuki Motor

The three well known Japanese companies, Casio, Toyota Motor, and Suzuki Motor illustrate how the founding family maintains management control through active governance in situations where they have very little ownership. The cases motivate our focus on separating ownership and control. They highlight how family talent, board control and advanced governance mechanisms keep families in control when their ownership is insignificant.

We describe the evolution of family ownership over a forty-year period spanning 1960-2000 in Figure 1. In all cases, ownership stakes of the founding families are reduced to insignificant levels by the end of the sampling period (and in one case were never significant).

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the eponymous company ever since its establishment in 1824, even when the family's beneficial ownership stake fell to negligible levels, first upon the firm's IPO in 1962 and then via mergers with J. S. Fry & Sons in 1919 and with Schweppes in 1969. Eventually, with little material ownership, the family lost a bitter battle for control against an unsolicited takeover by Kraft Foods in 2010 (see Bennedsen and Cadbury, 2013). GKN were family controlled since 1758 but were acquired by Melrose Industries in a controversial hostile takeover in 2018. Tektronix was acquired by Danaher Corporation in 2007 in an unsolicited takeover. Anheuser-Busch was served briefly by a fourth-generation Busch family scion until the firm was acquired by Inbev in a hostile takeover in 2008.

*3.1. Casio Computer Co.: Ownership dilution through global expansion.*

We start with Casio, the iconic calculator and electronic watch company, and show how equity financed growth dilutes founding family ownership over time. We submit that family talent nevertheless has kept the founding family in control to this day.

Casio was founded in 1946 as *Kashio Seisakujo* by a team of founders, father and four sons from the Kashio family. The Kashio men worked together to develop the world's first electronic calculator which was launched in 1957. To finance expansion, Casio went public in 1970 on the Tokyo Stock Exchange, with the family retaining 61% of shares. Three years later, Casio also listed on the Amsterdam Stock Exchange, and on the Frankfurt Stock Exchange in 1979. The net impact of these public offerings as well as inheritance due to the death of two co-founders[9] was a steep decline in the founding family's relative share ownership. Indeed, the family's direct shareholdings in Casio declined dramatically to 8% in 1990, below 6% in 2000 and below 4% in 2014 (see Figure 1). The largest shareholder group in Casio is represented today by financial institutions, followed by foreign investors.

In reality, however, the Kashio family has always been running Casio. The Kashio brothers took turns to hold the top management positions, namely the President and the Chairman, as well as to serve on its board[10]. Casio's first president was the father, and then his first son, Tadao, who succeeded him. Tadao with a reputation as a financial wizard served as president for 28 years, during which period his three younger brothers served on Casio's board. Tadao finally retired as president at the age of 71 in 1988 and remained as Casio's adviser until his death in 1993. The second brother, Toshio (born in 1925), who was the inventor of many of Casio's hit products, became Casio's Chairman from 1988 until 2011, and stayed on as a honorary chairman until passing away in 2012 at the age of 87. The third brother, Kazuo (born in 1929), with an expertise in sales and marketing, led Casio as its third President from 1988 and assumed dual positions as both President and Chairman in 2011.

[9] As of 2000, Japanese inheritance tax rate for the highest tax bracket was 70% for a taxable amount more than two billion yen.

[10] See Casio history at the company website, accessed on January 18, 2018, https://www.casio.co.jp/company/history/.

The fourth brother, Yuiko (born in 1930), was the production chief and served as vice president from 1991 until his retirement in 2014 at the age of 84.

Kazuo worked with the company well into his 80s to groom his successors who were his eldest son and three nephews. In June 2015 when Casio's profit hit an all-time high, Kazuo promoted his 49-year-old son, Kazuhiro, as the President, while he remained as the executive Chairman.[11] Even at 86 and leading Casio for 30 years Kazuo had shown no sign of disengagement from Casio's management. His departure came suddenly, however, due to his death in June 2018. Kazuhiro took the leadership baton holding the top dual positions as President and Chairman. Casio's board at this time included his cousin (Yukio's son). Another younger cousin (Tadao's son) served in the executive team.

The presence of the Kashio founders and heirs in the top management cadre of Casio has not been challenged by the continued erosion of their equity ownership in the company, and points to family resources playing an important role in maintaining control in the hands of the founding family.

*3.2. Toyota Motor Corporation: Control through group ownership and strong family assets*

Toyota Motor is one of the world's largest automobile manufacturers, with a market capitalization at its peak of USD 220 billion in fiscal year 2015. The Toyota case illustrates how complex ownership and management structures over a group of firms can empower the family, even when direct family ownership stakes are insignificant. Specifically, Toyota Motor Company sat at the apex of the Toyota Group which comprised a network of companies connected to each other via cross-shareholdings and shared top executives from the extended Toyoda clan. Table 1 shows Toyota's ten largest shareholders at six points in time in the last 50 years. Almost none of its 10 largest shareholders held more than 5% of outstanding shares from 1950 to 2000. Toyota's large shareholders were mostly financial institutions that held their shares for several decades. Among the top shareholders is Toyota Industries Corporation, which held a stake of 5.3% in 2000 and 6.6% in 2015. Setting aside

[11] Changing of the Guard: Casio president set to hand reins to son, Nikkei Asian Review, May 12, 2015, accessed on January 19, 2018, https://asia.nikkei.com/Business/Companies/Casio-president-set-to-hand-reins-to-son.

the ownership in Toyota Motor by Toyota Industries, the family's direct ownership stake in Toyota Motors was and remains insignificant.

Sakichi Toyoda (1867 – 1930) founded Toyota Industries as a successful loom maker. The second-generation patriarchy was handed to his adopted son-in-law, Risaburo (born 1884), while Sakichi´s biological son, Kiichiro (born 1894), went on to start Toyota Motor Company in 1937. Toyota Motor went through financial difficulty in the 1940s and eventually was on the brink of bankruptcy in 1949. The apex firm in the Toyota group, Toyota Industries, sent its president, Taizo Ishida, to rescue Toyota Motor and act as the family's caretaker (Hino, 2005). Following the death of the two Toyoda brothers in 1952, Ishida continued running Toyota until 1961, while grooming young Eiji Toyoda as the next successor (Bennedsen et al., 2016). Eiji was named as Toyota's 5th President in 1967. He led Toyota as the chairman and honorary advisor until his death in 2013 at the age of 100. During his helm, Eiji was instrumental in transforming Toyota into the world's top automobile company and developed what became known as the "Toyota Production System".

Toyota's 6th president was Shoichiro Toyoda, who was the first son of Kiichiro and therefore a designated heir by birth. As the clan's patriarch, he groomed his younger brother, Tatsuro, for succession. Tatsuro was promoted to Toyota's presidency in 1991. Shoichiro remained as Toyota's executive chairman during 1991-1999, and then as honorary chairman and a board member until 2009. Shoichiro also supervised other Toyota group firms, serving as Aisin's auditor and on Denso's board until 2015 when he turned 90 years old.

Tatsuro, however, ended his term shortly in 1995 for health reasons. Toyota's next three presidents were career employees (or *sararimen*) namely Hiroshi Okuda (1995-1999), Katsuaki Watanabe (1999-2005), and Fujio Cho (2005-2009). During this high growth decade, Toyota looked as if it had absolutely transformed itself to become a non-family firm run by professional managers. The two Toyoda seniors (Eiji and Shoichiro), however,

continued providing advice on corporate policies, in particular installing Toyoda scions in senior management and board positions. [12]

Akio Toyoda, the only son of Shoichiro, was told by his mother since he was little that *"One day you'll be president."*[13] The family dream came true in June 2009 when 49-years old Akio was named as Toyota Motor's 11th President. His appointment came on the heels of the company's largest recall scandal, Toyota's worst crisis in a century. The company needed the Toyoda name to signal that it was returning to its roots and would restore the values, quality and reputation upon which the business was founded. The stock price of Toyota increased 3% when Akio's promotion were announced.

Top executives bearing the extended Toyoda name – uncles, nephews, and cousins from the three family branches Risaburo, Eiji, and Kiichiro have also served at key Toyota group companies. Three sons from the Eiji branch have run other group firms as president and chairman for decades. Kanshiro headed Aisin, while Tetsuro has been in charge of Toyota Industries since 2005. The youngest brother, Shuhei, took the leadership at automotive component manufacturer and group member firm Toyota Boshoku Corporation serving as its Chairman since 2015.

The Toyoda family's control over corporate boards in the Toyoda group has allowed the family to control the cross shareholdings between the group companies. Thus board control has allowed the Toyoda clan to continue its control over the Toyota companies unimpeded to the present day. Furthermore, the case also illustrates that time gaps between capable family leaders are often filled out by employees (*sarariman*) that are loyal to the family.

*3.3. Suzuki Motor Corporation: Control through adult adoptions*

Ever since it went public in in 1949, the founding Suzuki family has *never been* listed among

[12] Family tensions and succession manoeuvring darken Toyota's top ranks, *Sentaku,* December 2016, accessed on January 18, 2018, https://www.sentaku.co.jp/articles/view/16445.

[13] Jason Clenfield and Yuki, Doubting Toyota Prince Defeats Crisis to Prove Self Wrong: Cars, Bloomberg, November 21, 2013, accessed on January 18, 2018, http://www.bloomberg.com/news/2013-11-20/doubting-toyota-prince-defeats-crisis-to-prove-self-wrong-cars.html.

the top ten shareholders of their iconic namesake company (see Figure 1). Suzuki's largest shareholders have been banks and insurance companies that have held its shares for decades.

Suzuki Motor, a major global manufacturer of small cars, was established by Michio Suzuki in 1909. Osamu Suzuki, the current patriarch of the Suzuki family, assumed the leadership position in 1978. Osamu's entry into the Suzuki family came about courtesy of his marriage to the eldest daughter of Suzuki's 2nd President, Shunzo Suzuki. Osamu adopted the Suzuki surname and began working at Suzuki in 1958 and rose through the ranks to senior management positions. In 1978 when Chairman Shunzo passed away and Suzuki's 3rd President, Jitsujiro Suzuki, had health problems, Osamu was promoted as the President at the age of 48. Like Osamu, his two predecessors, Shunzo and Jitsujiro, were also the founder's adopted sons-in-law who took on the Suzuki name after arranged marriages.

Osamu followed his family tradition when planning for succession by grooming his son-in-law (Hirotaka Ono) for President but unfortunately, Ono died of cancer in 2007 at the young age of 52.[14] In 2008, partly to cope with the financial crisis, Osamu, aged 78 at the time, resumed the firm's all top positions as combined President/CEO/Chairman. In 2015, his 55-years old eldest son, Toshihiro Suzuki, was appointed as the President, while Osamu continued serving as the Chairman who has shown no signs of retiring even as he turned 90 years old in 2020.

Casio, Toyota and Suzuki reflect different ways that families retain management control when rapid growth has diluted family ownership to insignificant levels: The Casio family has kept control through a line of very talented family managers. The Toyoda family has retained control via complex cross ownership and board control of companies within the Toyota group. [15] Furthermore, Toyota has employed career professional managers (Sarariman) during periods where family heirs were not ready to take the helm. The Suzuki

[14] Reuters, "Suzuki Motor Exec, CEO's son-in-law Dies at 52," December 13, 2007, accessed on January 29, 2018, https://www.reuters.com/article/suzuki-obit/suzuki-motor-exec-ceos-son-in-law-dies-at-52-idUST4050820071213.

[15] We note that such a structure of inter-corporate control by the extended Toyoda clan is distinct from the well-known *keiretsu* structure, which represents a group of firms tied by cross-shareholdings but no common ultimate shareholder and loosely linked in terms of management. See, among others, Nakatani (1984), Prowse (1992), Flath (1993), and Weinstein and Yafeh (1995).

family broadens its talent pool for succession through the use of arranged marriages and adult adoptions.

An interesting question is if these cases are unique to Japan or control without ownership exists in other countries. We documented in Section 2 that the handful of Type 2 cases mentioned in the literature are not time persistent – eventually, the family CEO was replaced by an outsider, and the firm itself acquired by another firm. Second, many of the time persistent cases are supported by control-enhancing mechanisms such as dual class shares.[16]

We did come across a bona fide example of Type 2 firm outside Japan, Banco Santander from Spain, with a market capitalization of around 75 billion euros in 2019. Santander is listed on five global stock exchanges and all shares carry equal votes. The Botín family has run Banco Santander since 1857 for four generations. Like his father, Emilio Botín was groomed to be the successor, entering the bank at the age of 24 and rising quickly through the executive ranks. Emilio took over the leadership role from his father in 1986 when he was 52 years old, and steered Banco Santander from a minnow to become not only the largest bank in Spain but also the Eurozone's largest bank. Due to rapid expansion, the family ownership fell to around 2% by the time of his sudden death in 2014. Following his death, Ana Botín, his 53 years old daughter, was nominated as the Chairperson to run the banking empire. When Ana Bótin was appointed to the top position it was highlighted that she possessed strong family assets associated with the family's legacy, continuity and network. During Ana's tenure running Banco Santander, the family's ownership declined to less than 0.15% by 2019. Currently, asset management companies and investment banks count among the bank's top 10 shareholders (Santander Annual Report 2019).

[16] Examples include many European-listed family controlled companies and the J. M. Smuckers Company in the U.S. It has been run by the eponymous family for four generations, even though the Smuckers' family equity stake in the firm is now less than 6%. A unique aspect of their share structure is Time Phased Voting. Under this set-up, 1 share in Smuckers equals 1 vote if held for less than 4 years and equals 10 votes if held for more than 4 years. A few other well-established companies such as Ford Motor Company and the New York Times also have control in the hands of the founding family with very little equity ownership, albeit in both cases, dual voting shares empower the founding family to control the firm.

## 4. Data Sources and Descriptive Statistics

We start our dataset construction by including all companies that went public in the 1949-2000 period. We exclude a small number of the firms where financial or ownership data are missing. The final sample covers almost the entire universe of public listed firms in post-war Japan.

To identify family firms, we follow the procedure and the dataset used by Mehrotra et al. (2013). We extend their sample as theirs only includes firms that went IPO prior to 1970. Our extension covers IPOs through 2000. Ownership data are from the Development Bank of Japan database for 1981 through 2000, as are our accounting data from 1962 through 2000. The Toyo Keizai database provides information on stock prices and board composition from 1989 through 2000. For prior years and missing data, Mehrotra et al. (2013) constructed the data by hand-collecting ownership, board structure and financial data from hardcopy annual reports available at the Institute of Innovation Research of Hitotsubashi University.

Ownership data disclosed in annual reports include: (1) the stake of each of the top ten shareholders, (2) the combined stake of all banks and other financial sector firms, and (3) the combined stake of all other firms. Board data include detailed information on each director's education (alma mater, major and graduation year), birth date, year initially hired, year appointed to the board, year made president (*shacho*) or Chairman (*kaicho*), and prior work experience.

We identify each firm's founder by consulting the following sources: (1) commemorative volumes (*shashi*) celebrating company anniversaries, (2) Toyokeizai Shimposha (1995), (3) Nihon Keizai Shimbun (2004) and (4) company websites. To identify relationships within the founding family, we use various Japanese language sources: (1) Tokiwa Shoin (1977) provides the family trees of 1002 business leaders, (2) a series of books published by Zaikai Kenkyusho (1979, 1981, 1982, 1983, 1985) provides the names of family members of the boards of listed firms, and (3) a set of thirty-eight Nihon Keizai Shimbun (2004) volumes provides the biographies of 243 prominent post-war business leaders.

Additional information on family relationships is obtained from the following sources: Japanese equivalents of Who's Who published by Jinjikoshinjo, the Nikkei Telecom 21 database of corporate news items published from 1975 onwards in the Nikkei group of newspapers (Nihon Keizai Shimbun, the Nikkei Business Daily, the Nikkei Financial Daily and the Nikkei Marketing Journal), company archives, Koyano (2007) and website searches. Using all this information, we annotate family trees with the names and business roles of all members of each firm's founding family. This information lets us identify each firm's founder(s) and ultimate owners, and ascertain each CEO/Chairman's relationship, if any, to the founding family by blood, marriage, or adoption.

We define family firms using both ownership and management information. On the ownership side we will in most of our analyses define a family firm as one where the aggregated family ownership is at least 5%. Family ownership is measured as both direct ownership by family members and indirect ownership through family foundations and companies controlled by the family.[17]

Figure 2 shows the listing of new firms on all four major Japanese exchanges (the Tokyo, Nagoya, Fukuoka and Osaka stock exchanges) in the post-war period, spanning 1949-2000. We notice a spike in 1949 when the Tokyo Stock Exchange (TSE) and the Osaka Stock Exchange (OSE) reopened after the war, and then again in 1961-62, when the second tier of the TSE was opened. We also see a spate of new family firm listings in the late 1990s, coinciding with signs of renewed, though ultimately brief, life in the Nikkei Index. We divide the firms into those that were listed by individuals or families (family firms) and those that were listed by other entities such as corporations (non-family firms). In most of the following analysis we will focus on the former group and examine how ownership and management evolve over time.

[17] Our ownership data contains the largest ten shareholders for each firm in each year. It is therefore theoretically possible that we underestimate family ownership in situation where there are family owners that are not among the largest ten shareholders. In almost all cases, the 10th largest shareholder owns less than 2% of the shares, well below our threshold of 5%. Thus we believe that the potential error in our categorization is small.

Table 2 provides descriptive statistic for the firms in our sample. It reports the mean, standard deviation, minimum and maximum for all 30,138 firm-year observations. We have grouped the variables into the three categories that we focus on in the following analysis: Finance Variables, Family Variables and Control Variables. Finance variables include those that are related to the need for capital and thus provide tests of the extent to which finance can explain the evolution of ownership and control. We find that average ROA is 4.75%, similar to the value of 4.64% documented in Mehrotra et al. (2013) and comparable to the figure of 3.1% documented for a more recent period (1986-2000) in Delios and Beamish (2005) based on Japanese multinational firms. The mean Tobin's Q ratio is 1.5, similar to the value documented in Mehrotra et al. (2013) – the corresponding Q-ratio for the 1986-2000 is 1.30 in Delios and Beamish (2005). The mean volatility of industry sales is 20.7. The mean firm size in natural log is 17.345 and equals ¥ 34 billion. The mean leverage (based on the long-term debt to assets ratio) is 0.20. Equity issuance happens on average in 17.4% of the firm years, corresponding to a frequency of approximately once every six years. The mean foreign ownership is 1.02% of outstanding shares, lower than the more recent figure of 11.8% by Foreign Institutional Investors reported in Miyajima and Hoda (2015).

The family variables are used to measure intangible family assets. First, family legacy is an indicator variable that captures if the firm name is related to the family name, which occurs in roughly one-third of the sample (see US evidence in Belenzon, Chatterji, and Daley, 2017). Second, family resources are defined as the presence of family members on the board of the company, as well as the presence of family members with elite education on the board[18]. A little more than 28% of firms have a family member on their board, while 24% of firms have a member with elite education on the board, indicating that most family members that serve on the firm's boards have elite education. Third, stable ownership is defined as the percentage of shareholdings by the top 10 shareholders who have held the firm's shares for at least five consecutive years. We submit that stable ownership indicates the presence of

[18] We follow Mehrotra et al. (2013) in defining elite education as a degree from one of Top 8 national universities in Japan.

friendly block-holders. The average share of stable ownership is 24%, which is around 10% more than the average family ownership.

Finally, we have a group of control variables that are hypothesized to influence ownership and control but do not identify clearly as Finance or Family Assets – these are left as Control variables. The mean CEO age is close to 60 years. On average CEOs have been in their position for 12 years and 23% of them have an education from an elite Japanese university. We find that the mean family ownership is 14%. When there are many elite non-family members on the board, we conjecture that there is an impending transition away from the family. The average number of elite non-family members on the board of directors is 0.8.

## 5. Evolution of family control and family ownership

In this section we categorize family firms based on ownership thresholds and management control and describe the evolution of each over time. We categorize firms into Type 1 to Type 4 and NFF (Non Family Firms) as described in Section 2. We use a 5% cut-off level of ownership, which corresponds exactly with voting rights since dual voting shares are not permitted in Japan, and vertical pyramidal ownership structures are rare. We repeat all our tests with higher threshold values as robustness tests.[19] With respect to management we define family control based on whether the CEO position (the President position in most Japanese firms in our sample) is occupied by a member of the founding family.

### *5.1. Evolution of family ownership and family control*

Panel A in Figure 3 describes the distribution of firms across the four types of firms that were incorporated by a family or an individual in IPO time. At the end of the IPO year, more than 85% of the newly listed firms are categorized as Type 1 where the family controls top management and has significant ownership. About 50% of these firms remain as Type 1 twenty years after the IPO. The share of listings represented by Type 2 firms with family management and no significant ownership increases in IPO time. At the IPO time Type 2 firms

[19] Since the results do not change qualitatively we only present tables using the 5% threshold. Results using higher ownership thresholds are available from the authors upon request.

are rare, but 10 years later, Type 2 firms account for more than 10% of the cohort, and after 20 years they represent almost one in five listed firms – this fraction is maintained for the remainder of the 50-year post-IPO period. Type 3 firms (significant family ownership with non-family CEO) show the most stability following IPO, varying between 10% and 15% of all firms over the 50 years following the firm's IPO. It takes more than 10 years for Type 4 firms (ex-family firms) to reach a level of 10% of all listings. Twenty-five years after the IPO, almost one in four listed firms is classified as Type 4 firms.

As we argued earlier, when family firms are defined based on ownership alone, all Type 2 firms risk being mis-categorised as non-family firms. Panel A showed that Type 2 represents a large group of firms even when we use an ownership threshold of 5%. The mis-categorization is obviously larger when a higher ownership cut-off is applied. We show this in Panel B where we apply a 20% ownership cut-off. Not surprisingly, the share of Type 1 firms declines relatively faster vis-à-vis Panel A. After 10 years, Type 1 firms represent 33% of all listings, almost half as big as their share under the 5% ownership threshold. After 25 years Type 1 firms represent only 1 in 10 of the sample, vs. 40% in Panel A. On the other hand, as expected with the higher threshold, Type 2 firms are more common in all years following the IPO. After 12 years the share of Type 2 firms among listed firms is close to 50%.

In figure 3 we focus on the evolution of ownership and control after IPOs. To get a complete picture of family control among all listed firms we also include firms that were never family firms (NFF firms using the terminology defined in Section 2). In figure 4, we re-plot figure 3 in calendar time with the new data, first using a 5% ownership cut-off level.

We find that the share of never-family firms among listed firms declines over time. In the 1950s, it was more than 70%, in the 60s and 70s it was more than 50% and in the late 90s it fell to less than 40%. A significant jump in the fraction of family firms occurs in the early 1960s, with the opening of the second tier of the Tokyo Stock Exchange when the share of Type 1 firms almost doubles to 30% of all listed firms (and stays at this level through the end of 2000). The share of Type 2 firms has been stable around 10% over most of the last 50 years with a slight decline in the late 90s. By comparison, the share of family owned, but professionally managed, firms (Type 3 firms) has been increasing over time and represents

around 15% of all listed firms in the year 2000 – this marks the extent of the Chandlerian transformation among Japanese listed firms. Finally, and not surprisingly, the share of former family firms (Type 4 firms) has also increased over time as firms age, as also documented in Franks et al. (2011).

In Figure 4 Panel B we repeat the exercise using a 20% ownership cut-off. Whereas the share of firms that were *never* family firms is by definition unchanged, we see a few interesting variations across the other types: The share of Type 1 firms drops to 20% in the late 90s while the share of Type 2 firms is much larger. Not surprisingly, there are also fewer Type 3 firms and more Type 4 firms. This exercise shows the twin dangers of using higher ownership cut-offs as well as ignoring family management when defining family firms. The resulting mis-categorization is material. If a 20% ownership cut-off level is used, more than one-fifth of all listed firms in the last fifty years are categorized as non-family firms even when a family member serves as the CEO. Counting Type 1, 2 and 3 firms as family firms, we find that approximately four out of ten listed firms in Japan qualify as family firms. This number has been relative stable since the 1960s. We conclude that families control a significant fraction of public traded Japanese firms, either through ownership, and/or via top management. We have documented that Type 2 firms are common and persistent over time. Our evidence also supports the notion that the literature has underestimated the number of family firms in Japan.[20]

### *5.2. Transition across family firm types*

As we have seen in Figure 3, in the years after their IPO, a large share of family firms either loosen their control over ownership, or their control over management. Whereas the figure provides a general picture of transition, it is not a complete picture of the path towards exit. To complement the figure, Table 3 provides the transition matrix of how family firms move between different categories. We define such events as transition from the traditional family firms (Type 1) when they are associated with either a loss of executive position by a family member with the incoming CEO being unrelated to the founding family, or involve the

[20] For instance, both Claessens et al. (2000) and Masulis et al. (2011) use a strict ownership threshold definition for family firms and thus categorize Type 2 firms as non-family firms.

family ownership declining to insignificant levels, or both. For example, when a family relinquishes ownership, but retains control in an executive office, a transition is recorded as the firm is moving from Type 1 to Type 2. Retaining ownership but hiring a professional CEO results in a transition from Type 1 to Type 3 firm. A transition to Type 4 status occurs when the founding family's ownership becomes insignificant and it is no longer represented in senior management positions.[21]

Panel A of Table 3 describes firms originating as Type 1 firms, and shows that the most common form of exit for Type 1 family firms is abdicating management; this marks a transition where a family CEO is replaced by a professional non-family CEO. These transitions account for a little over six out of ten exits for Type 1 firms. More than three out of ten exits (36%) involve the family's ownership shrinking below the 5% threshold while retaining management (exit from Type 1 to Type 2 firms). Interestingly only 3% of exits from Type 1 firms are to Type 4 firms, underscoring that most exit are graduate through diluting ownership and/or leaving top management.

Panel B describes firms originating as Type 2 firms and their transition path. Not surprisingly, 100% of transitions are to Type 4 firm, essentially noting that for family managed (without ownership) firms, exit involves the complete loss of family control over the firm. It seems that once the family no longer holds a significant ownership in the firm, management succession to outsiders becomes inevitable.

In panel C we keep the final form as Type 2 firms, and note instead where they originated. When ownership threshold is 5%, about 65% of Type 2 firms originated form Type 1 firms, meaning that almost 2 out 3 Type 2 firms transitioned from Type 1 firms when the founding family's ownership level was diluted to insignificant levels but top management

[21] It is possible that non-family firms are pulled into the orbit of family control via mergers and acquisitions. We suspect these events are present in our sample – for instance, an acquisition of a non-family by a Type 1 firm that results in a reverse transition of Type 4 or non-family firm into family status. We do not examine such cases as a separate category because this paper concerns chiefly with loss of ownership and control by founding families, and second, because mergers and acquisitions in Japan in our sample period were not an important source of asset growth or restructuring. See for e.g., Komoto (2002), Mehrotra et al (2006) and Yeh and Hoshino (2002) – these studies span the 1980s and 1990s and have sample sizes of less than 90 mergers over this time period.

position was retained by heirs of the founding family. A smaller fraction, 22%, of Type 2 firms originated from Type 3 firms, where the founding family had ownership but were not in the top management cadre. Finally, about 13% of Type 2 firms were identified as such at the time of the IPO, meaning that the founding family ownership was already insignificant at the end of the IPO year. When ownership threshold is defined as 20%, meaning that the founding family needed to own more than 20% of the shares to be classified as family owned, the fraction of Type 2 firms originating as such at the time of the IPO is obviously higher, and Type 2 originating from Type 3 firms is lower.

## 6. Type 2 firms are different: performance and family firm type

In this section we provide descriptive statistics on firm characteristics, including absolute and relative performance of the four firm types identified in the study. We begin by providing univariate statistics, and then follow through with multivariate regressions to tease out performance differences across the firm types.

### *6.1. Univariate differences across family firm types*

Table 4 provides firm year mean statistic for the four types of firms prior to IPO.[22] We have 30,138 firm years which include 14,697 Type 1 firm years, 4,606 Type 2 firm years, 3,821 Type 3 firm years and 5,393 Type 4 firm years. We group our variables into three categories: financial, family and control. The table begins by providing the means of all variables for the various firm types and follows this by providing mean differences across pair types. For e.g., the column titled Type 3-4 (read as *Type 3 minus 4*) is the mean difference for the variable between Type 3 and Type 4 firms.

We begin by comparing mean statistics for the financial variables. Looking at the relationship between family control and operating performance we find that family ownership on average is correlated with higher accounting performance measured as

[22] To focus on Type 2 being different from Type 1 and Type 3 and to save space we exclude the firms that never where family firms in the univariate analysis in Table 4. However, they are included in the multivariate analysis in Table 5.

operating return over assets (ROA). ROA for Type 1 firms is the highest at 5.3%, vs. 3.4% for Type 4 firms. Type 2 and Type 3 firms are in the middle with ROAs of 4.2% and 4.7%. The pairwise differences across each category are statistically significant. This provide the first evidence of Type 2 firms are different in accounting performance vis-à-vis Type 1 and Type 4 firms, the two categories the literature has merged Type 2 firms with.

In Table 2 Row 2 we study mean differences in valuation based on Tobin's Q. We notice that Type 1 and Type 2 firms have the highest valuation and that Type 4 firms have the lowest. Mean Q-ratios for Type 2 firms are not statistically different from Type 1 firms but statistically higher than those for Type 3 and Type 4 firms. Thus, family control without ownership (Type 2) fares no worse than traditional family firms (Type 1). However, both Type 1 and Type 2 firms are valued higher than family owned firms with professional management (Type 3) as well as ex-family firms (Type 4).

There is a smaller variation among the four groups when we look at the volatility of industry sales. In general, family owned firms (Type 1 and Type 3) are smaller than Type 2 and Type 4 firms. That is only natural since family ownership dilution is correlated with asset growth. Leverage is lowest for Type 3 firms and highest for Type 2 firms with Type 1 and Type 4 firms in between. The differences in leverage are statistically significant and economically important. The difference between the most leveraged and least leverage group is on average almost 4%. Lower family ownership is correlated positively with firm age – Type 4 and Type 2 firms tend to be older than Type 1 and Type 3 firms. Foreign ownership tends to be low across all types of firms. Shares held by foreigners are the highest for Type 4 firms, but even there mean ownership by foreign institutional investors is only 2.1%. Comparisons with other studies are muddied by the fact that we do not look at non-family firms in our study, which may attract disproportionate investment from foreign investors.

Next, we focus on proxies for family assets. By construction, the percentage of family ownership is significantly higher for Type 1 and Type 3 firms than for the other two types. More interestingly, Type 1 firms are more likely to be Legacy firms compared to Type 2 and Type 4 firms, indicating a reluctance of legacy heirs to disengage from their firms. For the same reason, both Type 2 and Type 3 firms are more likely to be Legacy firms compared to

Type 4 firms. Type 2 and Type 3 firms are more likely to have a family member on their board vis-à-vis Type 4 firms; they are also more likely to be graduates of Elite universities in Japan. These two results point to the unique resources families bring to the board – when these are not in evidence, the family's departure is hastened. It is worth noticing that Type 2 firms are more likely to have elite family members on their boards than Type 1 and Type 3 firms. This is consistent with the idea that stronger family assets empower families to control firms even when their ownership stakes are small.

Finally, we focus on the set of control variables. Type 1 firms have the youngest albeit longest-serving CEOs, while CEOs of Type 4 firms have the shortest tenures and tend to be the oldest. Type 2 and Type 3 firms are situated in the middle. We note that ownership bestows executive roles at an early age and tends to be associated with long tenures when the CEO is an heir of the founding family. Where the CEO is a *sarariman*, tenures are shorter, and such a position comes at a more advanced age. It is also clear that family CEOs (Type 1 and 2) are less likely to have education from elite universities relative to non-family CEOs (Type 3 and 4).

Our univariate mean analysis provides support for the claim that Type 2 firms are different from the two categories of firms they have been merged with in the existing literature. Compared to traditional family firms (Type 1) they are larger, have weaker accounting performance but similar firm value, and even though they are less likely to have family members on the board, both family and non-family board members are more likely to come from an elite university. Compared to firms where the family has exited (Type 4) they are better performing and have a marginally higher firm value, similar size but higher leverage, more likely to be eponymous, more family board members with and without elite education, but fewer outside board members who are educated from elite universities. These results point to biases that can result from including Type 2 firms blended in with other types of family firms.

*6.2. Multivariate performance differences across firm types*

In Table 5 we compare three aspects of performance for Type 2 firms vis-à-vis Type 1, Type 3 and Type 4 firms. Specifically we want to know if family control without ownership is associated with higher ROA, Q-ratios and Sales Growth. We do this by estimating panel regressions with Type 2 as the omitted variable.

Our findings are as follows. First, looking at ROA, we find that Type 1 firms, those with family ownership and control, have significantly higher ROA compared to Type 2 firms, as do Type 3 firms (those with family ownership but not family management), though the latter result is significant only at the 10% level. By contrast, both Type 4 firms (ex-family firms) as well as non-family firms (never family firms) are associated with significantly lower ROA relative to Type 2 firms. Note that in both Type 2 and Type 4 firms, the ownership by the founding family is insignificant. The difference is that in Type 2 firms heirs of the founding family are in control, whereas Type 4 firms have severed such links with the founding family.

We find no statistically significant difference in Q-ratios between Type 1 and Type 2 firms, indicating that market valuations are similar for firms with family control regardless of ownership. Interestingly, Type 2 firms are valued higher than Type 4 and non-family firms – the coefficients for Type 4 and non-family firms are both statistically significantly negative.

Sales growth provides a similar picture as ROA for Type 1 firms that are associated with a higher sales growth vis-à-vis Type 2 firms. Type 4 and non-family firms again lag behind Type 2 firms in sales growth.

Overall these results paint the following picture. Type 2 firms, with family control without ownership, appear to out-perform non-family firms (Type 4 and Non-family Firms) in all three of the performance dimensions we examine. Type 1 firms, where the founding family retains both control and ownership, has an edge over Type 2 firms when we focus on accounting performance and sales growth but their values are not statistically different. The multivariate analysis confirms the insight from the univariate analysis above, specifically that firms where families control management with little ownership are different from traditional family firms and non-family firms.

It is important to remark that our findings are mainly based on correlations supported by mean comparison and multivariate regression analysis. We do not claim the findings are causal. It is possible that family heirs are invited to serve as CEOs in many more cases than we observe, but they choose only the higher performing ones. Similarly, transitions to Type 4 firms may well be motivated by declining performance, and not be attributable to a loss of family control. Finally, it may be that both ownership structure and performance is determined by third factors we do not control for.

## 7. Transition into and out of Type 2 firms

We have documented that there is a large fraction of firms where families retain the top management job even when their ownership stake becomes insignificant (Type 2). In this section we investigate the determinants of firms' transition into and out of Type 2. We hypothesize the finance variables to be important for transitions from Type 1 to Type 2, where families dilute ownership but retain control. Second, we explore the factors make families without ownership lose control (Type 2 becomes Type 4 firms). Our hypothesis is that family assets are important factors in explaining the loss of family control. We find that not only financial constraints are important determinants of ownership dilution but also relationship-specific family assets are important factors in explaining the evolution of family control.

### *7.1. Determinants of control without ownership (Type 1 to Type 2 transitions)*

In Table 6 we explore the determinants of Type 1 to Type 2 transitions. By definition, this transition is about loss of ownership. As we saw in our three case studies, the dilution of ownership has much to do with the imperative of financing growth. Thus, a priori, we expect the finance variables to be important for this transition.

We present three partial analyses. In Model (1) the regression results include only the finance variables. In Model (2) as well as the one that combines both financial and family variables. The results support our hypothesis. As Model 1 shows, several finance variables

are significantly related to the probability of transition from Type 1 to Type 2 status. We find a positive correlation between firm size and the odds of transitioning from Type 1 to Type 2. This is consistent with larger firms needing more capital for their investments. Leverage is also positively correlated with these transitions, underscoring a rising need for external capital for firms with tighter balance sheets. Finally, equity issuance is also seen as hastening the exit from Type 1 to Type 2 firms. This is expected due to the dilutive effects of new share issuance. So long as family heirs do not participate in the new equity offerings, their fractional ownership in the firm declines. If this decline is sufficiently large, firms transition from Type 1 to Type 2.

Our hypothesis is that family assets are especially important in explaining changes in family control. Since Type 1 to Type 2 transitions preserve family management, we do not expect family asset variables to be directly relevant in these transitions. Nevertheless, family resources may be important in allowing families to retain control without ownership and stay as Type 2 firms. We, therefore, test this hypothesis by running regressions of Model (2) and Model (3). We note that the transition from Type 1 to Type 2 firms is more likely when family ownership is small, because a given reduction in ownership is more likely to result in a stake below 5%. Indeed, Model 2 in Table 6 shows that when family ownership is small, a transition to Type 2 is more likely.

Stable ownership tends to retard transition from Type 1 to Type 2 status – it appears that having a network of stable owners allows the family to maintain its Type 1 status. These results are consistent with the premise that family networks matter as well. When the family has a strong network as measured by the stability of ownership, they are also less likely to dilute their ownership.

In Model 3 we add both financial and family variables in the same Model. The results are robust. One exception is firm age -- now firm age is negatively correlated to transition into Type 2.

We next turn to the control variables related to CEO characteristics in Model 3. First, we find that transition from Type 1 to Type 2 is more likely when the CEO is younger. This is

consistent with younger CEOs being more risk taking and thus accept ownership dilution as part of a growth process and that they are more likely to stay on as CEOs even as ownership declines into insignificance. Second, for a given CEO age, tenure on the job correlates positively with a transition from Type 1 to Type 2. Again this is consistent with that more experienced CEOs are less dispensable when ownership is diluted and that they had a longer time to secure alternative channels of control beyond direct ownership. Finally, CEOs from elite universities may be more likely to be retained as ownership levels became insignificant; however, talented CEOs are also less dependent on diluting ownership in the first place. The negative correlation between elite CEOs and transition from Type 1 to Type 2 indicates the latter effect dominates the former.

To highlight the importance of family assets in the transitions of ownership and control, we look as a comparison transitions from Type 1 to Type 3 firms in Model 4. This is professionalization in which the family CEO is replaced by a non-family CEO, while the family maintains the ownership. We expect that finance assets to be less important in explaining the transitions than family assets, as the case of Model 3. The results in Model 4 confirm our hypothesis. Indeed, financial leverage, equity issuance and firm size are no longer significant. Interestingly, most of the estimated coefficients of family asset variables are statistically significant. The coefficient on family ownership is positive, indicating the importance of control when professionalizing the firm. The coefficient on the variable showing family presence on the board of the company is also positive, further supporting the idea that control and monitoring are important in passing on the CEO's job to a non-family professional manager. The coefficient on stable ownership remains negative, as in other regressions. Finally, on the CEO characteristics, the positive coefficient on CEO tenure indicates that longer tenure family CEOs are more likely to promote professionalization. Along with this interpretation, the positive coefficient on CEO age indicates that a professional CEO is more likely to come in when the incumbent family CEO is older, perhaps approaching retirement. Again, this result is opposite to transitions from Type 1 to Type 2.

Table 6 has supported the notion that finance variables are important factors in determining the path of ownership dilution and that family assets are important factors in deciding how to allocate managerial control.

*7.2. Determinants of exit paths* (Transition from Type 2 to Type 4 firms)

Table 7 explores why there is a transition from family control without ownership to full exit of both ownership and family, that is, we identify determinants of the transfer from Type 2 to Type 4 firms. We begin by analysing the effect of finance. Consistent with the existing literature, profitable firms are less likely to transition from Type 2 to Type 4 status, indicating that strong performance helps retain family control in the absence of direct ownership. It may be that profitable firms are able to both raise outside capital for investments, as well as finance investments via retained earnings. Larger firms are more likely to transition to Type 4 status. This is consistent with the notion that the relation-specific capital of family CEOs are more important for smaller firms. Foreign ownership appears to expedite exits as well – we cannot distinguish if this is because of a selection bias where foreign investors shun firms with family ownership, or if foreign owners somehow actively advocate for a transition from Type 2 to Type 4 status. All of these effects are both economically relevant and statistically significant at a one percent level. As expected, the equity issuance dummy is not significant given that this transition involves control, and not a decline in ownership.

Turning to family assets, we find that the proxy for family legacy significantly lowers the odds of exit to Type 4 status. Firms with the same name as the founding family are more likely to retain family heirs in management control. This is consistent with the view that the presence and visibility of the family creates value in firms where family legacy is an active part of the business history and the business branding (see, e.g., Belenzon, Chatterji, and Daley, 2017). Furthermore, it could be also true that founders who name the firm after themselves place a higher value on control because there is private utility attached to manage the namesake company. This could delay the shift in top management even in situations where founders have limited ownership.

Not surprisingly, having a family member on board retards the exit to Type 4 status. Furthermore, having an elite family member on board further lowers the odds of transition to Type 4 status, underscoring the role of talent in helping family heirs retain control over firms where they have little ownership left. The Elite Education variable has been used as a

proxy for talent in Perez-Gonzales (2006) and Mehrotra et al. (2013), and our results indicate that both monitoring and talent are important family resources that have the effect of delaying exits. We believe that while monitoring considerations have been addressed in the literature, the role of family talent in preserving family control has not been documented before.

Finally, we investigate whether stable ownership retards the likelihood of exits. We base this on the assertion that strong family networks engender stable block holders that can preserve the status quo for a longer time. The results in Table 7 do not support such an assertion.

In all regression specifications, we notice that succession concerns loom large – the presence of older CEOs (as well those with a longer service record) increases the odds of an exit. This has been noted in the literature (see Klasa, 2007) and indeed, succession is often seen as the Achilles' heel of family firm longevity. The last of the control variables is the educational attainment of the outgoing CEO. We find that CEOs with elite university pedigrees seems to face higher odds of exits. It is consistent with the argument that when very talented family CEOs are replaced, the likelihood of finding a similar quality CEO within the family's pool is smaller.

It is interesting to notice that when we compare the Finance and Family models, they have very similar R-squares – this is noteworthy since the literature has largely focused on Finance as a propeller of exits. Our results show that Family is equally important (indeed, Model 1 has a marginally higher pseudo R2 than Model 2) in explaining exit.[23] The literature's focus on Finance has the effect of missing out on a set of family factors that are statistically similar in their ability to jointly explain the exit probabilities. In principle, omitting the family variables could also bias the observed coefficients on the Finance variables. We include both

[23] We notice an even larger difference in the R-squares for Model 1 and Model 2 in Table 6. However, this is partly explained by that the family variable, Family Ownership, is a key determinant in explaining the transfer from Type 1 to Type 2.

sets of variables in the third specification presented in Model 3. Barring a few differences, the results are very similar to the partial analysis in Model 1 and 2.

The results in Table 7 help us understand what factors allow family control in the absence of direct share ownership. Legacy firms are more likely to allow families to retain control, as are active family involvement in the board, especially if the board member(s) attended an elite post-secondary institution. Larger and older firms are seen as less likely to keep founder family control.

In summary, the transitions analysed in Table 6 and Table 7 paint the following picture. Finance appears to drive transitions involving a dilution of ownership – equity issuance and higher leverage expedite transitions from Type 1 to Type 2 firms. By contrast, where family ownership is held constant and transitions involve a transfer of control to outsiders, and the importance of finance diminishes, while the importance of family increases.

## 8. Conclusion

Using a novel dataset for the evolution of ownership and control of publicly traded firms in Japan we find that families exercise control over corporate assets even in the absence of material share ownership. We find that this new class of family firms are different – measured in accounting performance, valuation and sales growth – from both traditional family firms and non-family firms, the two groups that the existing literature has traditionally merged them into. This implies that family control in Japan is more persistent than the very low equity ownership by founding families would indicate, and hence, family firms are more ubiquitous among publicly traded Japanese firms than the literature has hitherto documented.

We conclude that family and financial factors jointly determine the dilution of family ownership and loss of management control. We find suggestive evidence that financial variables are more important in explaining the dilution of ownership, whereas family assets are relatively more important in explaining the decision to delegate the top management job

to outsiders. We suggest this to be a guideline for future research on the evolution of family ownership and control of the corporation.

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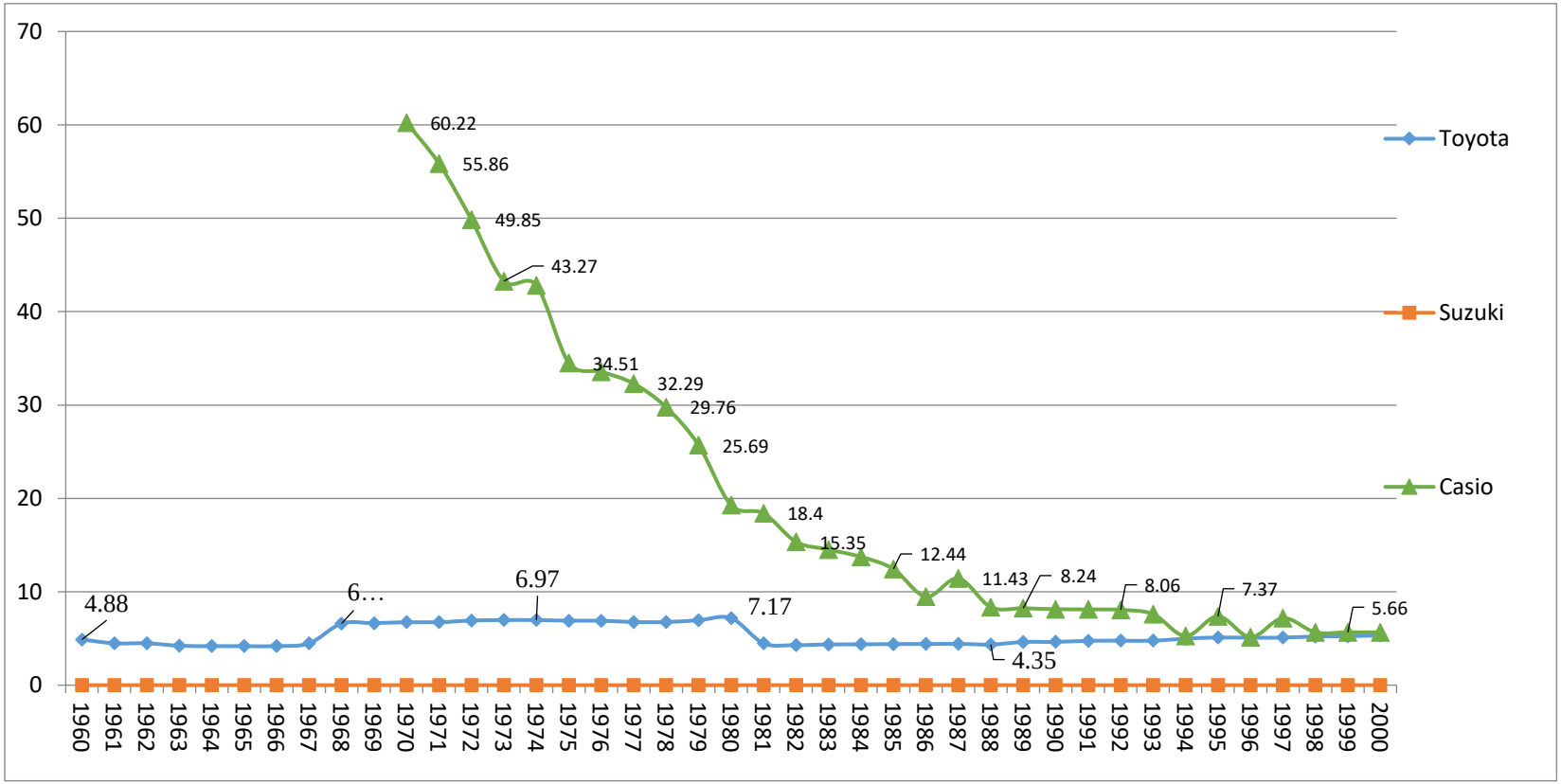
# Figure 1

## Family Ownership of Casio, Toyota Motor, Suzuki Motor (1960-2000)

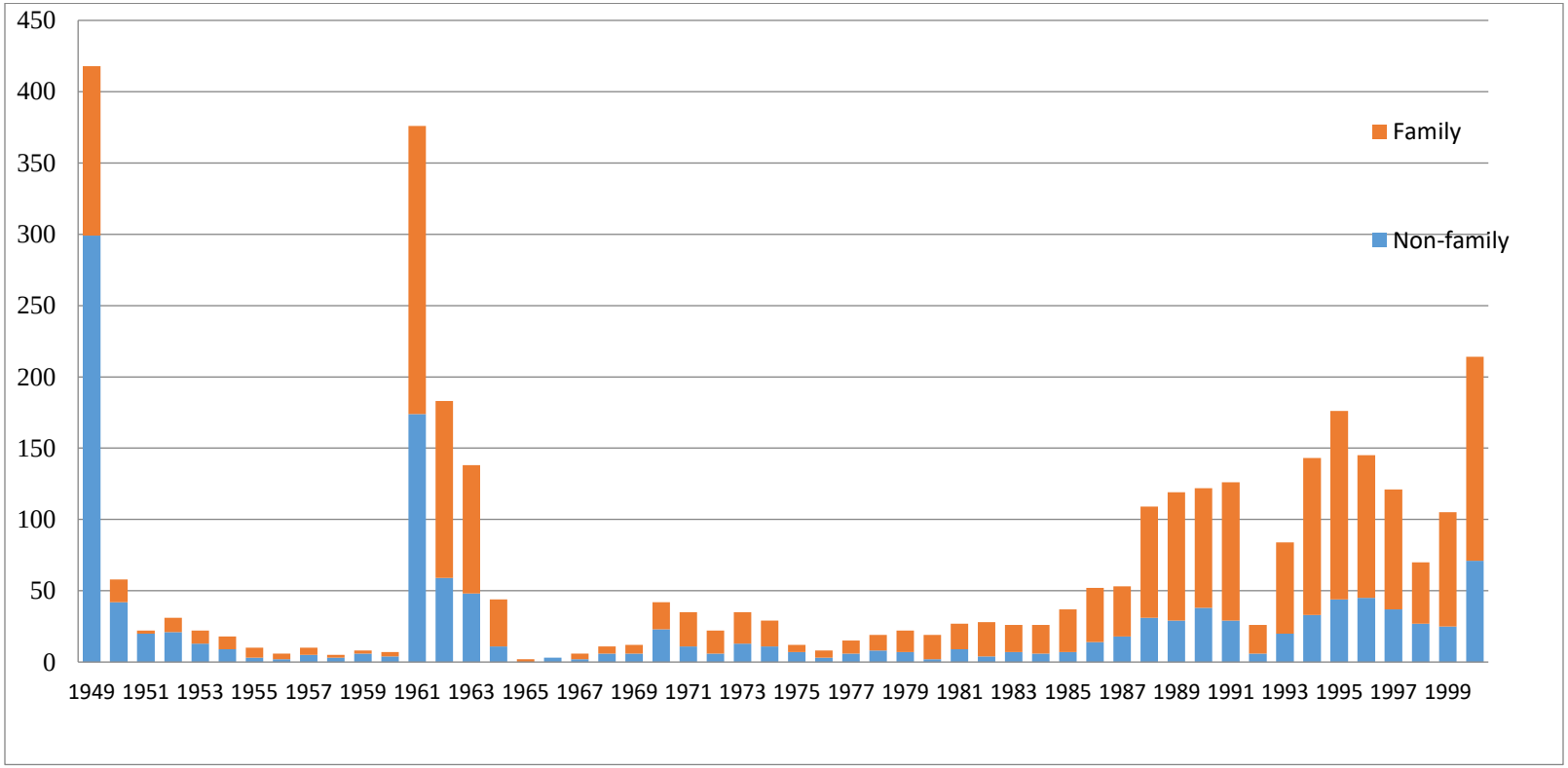
This figure presents the founding family ownership of Casio, Toyota Motor and Suzuki Motor. The percentage of family shareholdings includes the ownership by the members of the founding family as well as by group companies. Vertical axis numbers are in percent.



# Figure 2

## New listings on the Japanese Stock Exchanges (1949-2000)

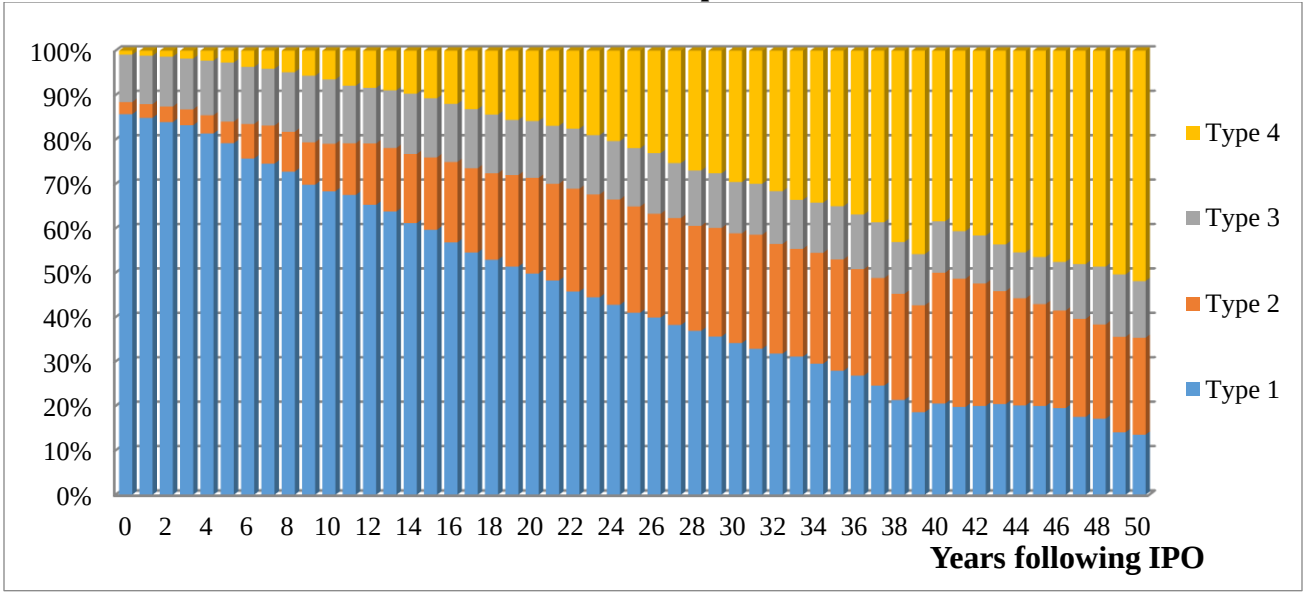
This figure presents IPOs on all stock exchanges in Japan during the 1949-2000 period. 1949 marks the re-opening of the Tokyo Stock Exchange after the war. 1961 marks the spurt of new listings when the second tier of the Tokyo Stock Exchange was opened. Family firms are firms that are listed by a family or an individual. Non-family firms are the remaining ones, e.g. firms that are listed by corporations.



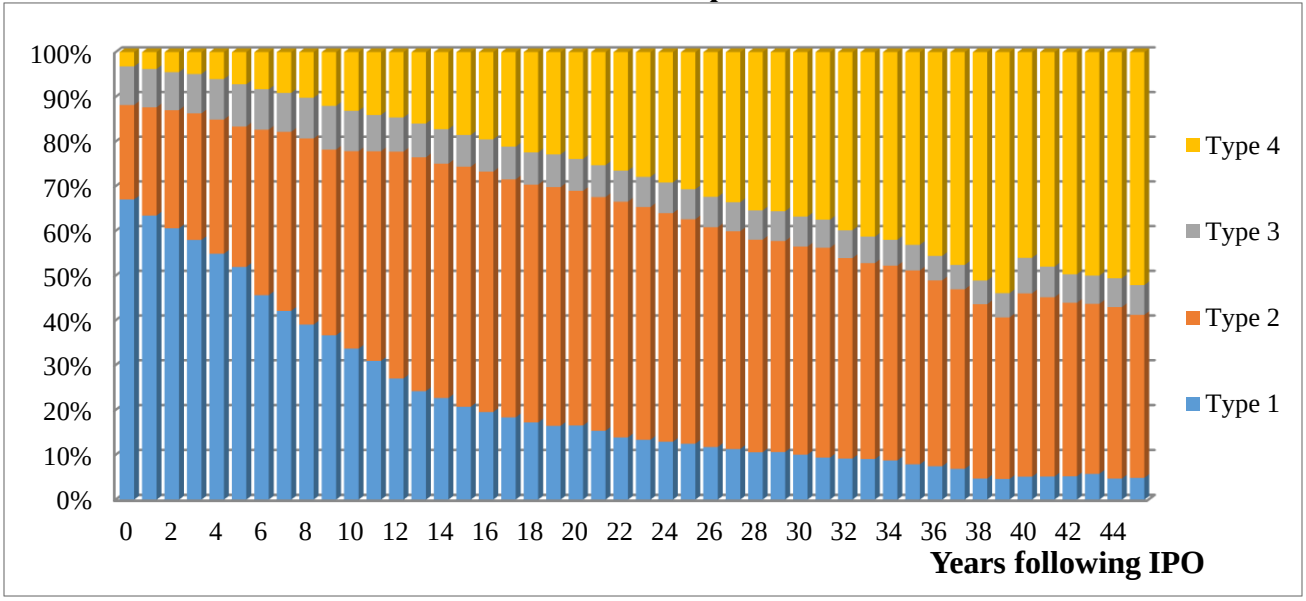
# Figure 3
## Family's ownership & management in IPO Time

Let X be given by the ownership definition in Panel A (X=5%) and Panel B (X=20%). *Type 1* are firms where the founding family has at least X ownership and the top management position. *Type 2* are firms where the family has less than X ownership but a family member serves as the top management position. *Type 3* are firms where the family has more than X of the shares but the top management position is not a family member. *Type 4* are ex-family firms, where the family ownership is less than X and the founding family does not hold the top management position. IPO time is measured in years past the IPO year. The sample includes all publicly traded firms listed by individuals and families (but not corporations) covering the period of 1955-2000.

**Panel A: 5% ownership definition.**




**Panel B: 20% ownership definition.**

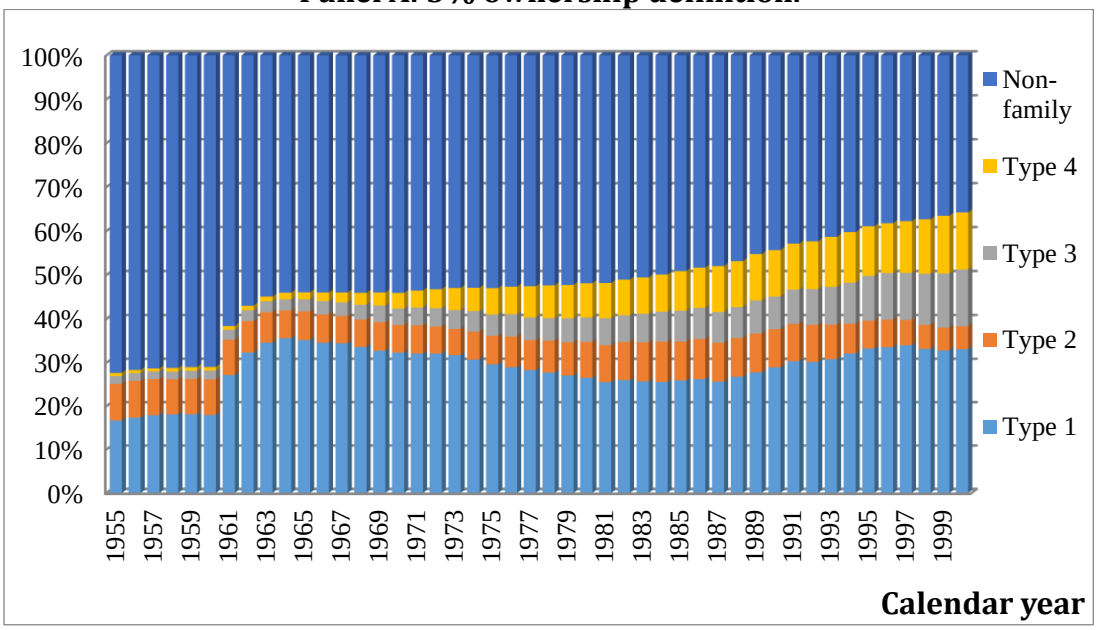


# Figure 4

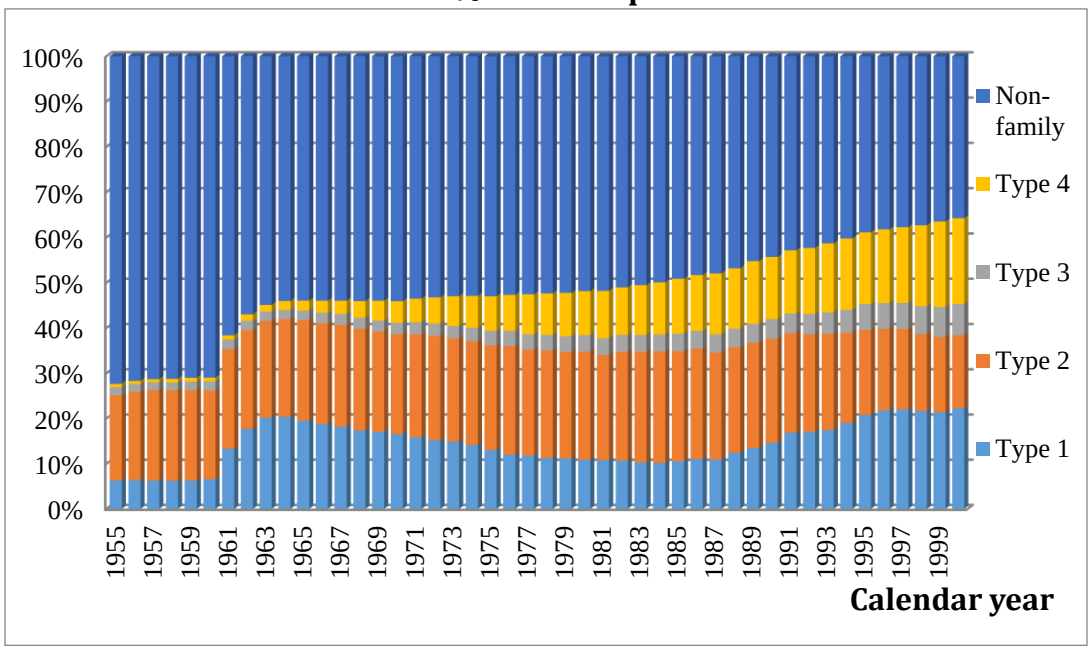
## Family's ownership & management in calendar years (1955-2000) including firms that were never family firms.

Let X be given by the ownership definition in Panel A (X=5%) and Panel B (X=20%). *Type 1* are firms where the founding family has at least X ownership and the top management position. *Type 2* are firms where the family has less than X ownership but a family member serves as the top management position. *Type 3* are firms where the family has more than X of the shares but the top management position is not a family member. *Type 4* are ex-family firms, where the family ownership is less than X and the founding family does not hold the top management position. *Non-family* are firms that were listed by corporations. Time is measured in calendar years and thus include entry and exit to the stock exchanges. The sample includes all publicly traded firms covering the period of 1955-2000.

**Panel A: 5% ownership definition.**




**Panel B: 20% ownership definition.**



# Table 1
## Toyota Motor's Top 10 Shareholders

This table presents the top 10 shareholders of Toyota Motors at a fiscal year ending on March 31.

| Fiscal year | Top 1 | % | Top 2 | % | Top 3 | % | Top 4 | % | Top 5 | % | Top 6 | % | Top 7 | % | Top 8 | % | Top 9 | % | Top 10 | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1962 | Toyo Trust | 7.86 | Toyota Industries | 4.48 | Mitsubishi Trust | 3.82 | Mitsui Bank | 3.04 | Tokai Bank | 2.94 | Daiwa Bank | 2.86 | Nippon Life | 1.79 | Sumitomo Trust | 1.50 | Sanwa Bank | 1.45 | Kyowa Bank | 1.43 |
| 1970 | Toyota Industries | 4.48 | Mitsui Bank | 4.46 | Tokai Bank | 4.40 | Sanwa Bank | 4.02 | Nippon Life | 3.48 | LTCB | 3.35 | Daiwa Bank | 2.80 | Toyo Trust | 2.56 | Kyowa Bank | 2.28 | Toyota Tsusho | 2.16 |
| 1980 | Mitsui Bank | 4.98 | Tokai Bank | 4.94 | Sanwa Bank | 4.79 | Toyota Industries | 4.56 | Nippon Life | 3.90 | LTCB | 3.47 | Toyota Tsusho | 2.61 | Daiwa Bank | 2.56 | Dai-ichi Life | 2.46 | Taisho Marine & Fire | 2.26 |
| 1990 | Sanwa Bank | 4.96 | Mitsui Bank | 4.96 | Tokai Bank | 4.96 | Toyota Industries | 4.63 | Nippon Life | 3.75 | LTCB | 3.11 | Mitsui Marine | 2.46 | Daiwa Bank | 2.29 | Mitsui Life | 2.23 | Dai-ichi Life | 2.23 |
| 2000 | Toyota Industries | 5.34 | Sanwa Bank | 4.75 | Mitsui Bank | 4.33 | Nippon Life | 4.32 | Tokai Bank | 3.92 | Chuo Trust | 3.87 | Japan Trustee Srvcs Bank | 3.83 | Chiyoda Bank | 3.05 | Mizuho Trust Bank | 2.96 | LTCB | 2.73 |
| 2010 | Japan Trustee Srvs Bank | #### | Toyota Industries | 5.83 | Master Trust Bank | 5.55 | Nippon Life | 3.78 | State Street Bank & Trust | 2.54 | Trust & Custody Srvcs Bank | 2.51 | Bank of New York Mellon | 2.31 | Tokio Mar. & Nichido Fire | 2.24 | Mitsui Sumitomo Insurance | 1.88 | Denso | 1.70 |
| 2015 | Japan Trustee Srvs Bank | 9.99 | Toyota Industries | 6.57 | Master Trust Bank | 5.29 | State Street Bank and Trust | 3.73 | Nippon Life | 3.39 | Bank of New York Mellon | 2.51 | Trust & Custody Srvcs Bank | 2.05 | Denso | 2.03 | Mitsui Sumitomo Insurance | 1.93 | Capital Group | 1.75 |

# Table 2
## Descriptive Statistics

Summary statistics for the variables used in the remaining tables. All variables are described in Appendix 1. ***, **, and * denote significance at the 1%, 5% and 10% levels.

| Factors | Variables | | Mean | S.D. | Min | Max |
|---|---|---|---|---|---|---|
| **Finance factors** | ROA | (1) | 4.750 | 4.572 | -21.983 | 32.654 |
| | Tobin Q | (2) | 1.497 | 0.521 | 0.289 | 5.478 |
| | Volatility of industry sales | (3) | 20.710 | 1.413 | 14.331 | 23.995 |
| | Firm size | (4) | 17.345 | 1.409 | 12.782 | 23.226 |
| | Leverage | (5) | 19.960 | 14.124 | 0 | 91.963 |
| | Equity issuance dummy | (6) | 0.174 | 0.379 | 0 | 1 |
| | Firm age | (7) | 42.766 | 15.524 | 7 | 107 |
| | Foreign ownership | (8) | 1.026 | 4.687 | 0 | 89.8 |
| | Time value for Cox regression | (9) | 12.770 | 9.419 | 1 | 46 |
| **Family factors** | Family ownership | (10) | 14.633 | 15.789 | 0 | 95.79 |
| | Family legacy | (11) | 0.319 | 0.466 | 0 | 1 |
| | Family on the board | (12) | 0.284 | 0.451 | 0 | 1 |
| | ELITE family on the board | (13) | 0.240 | 0.427 | 0 | 1 |
| | Elite non-family on the board | (14) | 0.804 | 0.397 | 0 | 1 |
| | Stable ownership | (15) | 23.688 | 18.077 | 0 | 95.79 |
| **Control factors** | CEO age | (16) | 59.577 | 8.572 | 26 | 95 |
| | CEO tenure | (17) | 11.958 | 10.577 | 1 | 53 |
| | CEO eliteness | (18) | 0.228 | 0.420 | 0 | 1 |

# Table 3
## Succession Transition Matrix

Panel A describes the transitions from Type 1 to Type 2, Type 3 and Type 4. Panel B describes the transitions from Type 2 to Type 1, Type 3 and Type 4. Panel A and B use a 5% cutoff level for ownership. Panel C describes the origins of Type 2 firms. Panel C uses a 5% cutoff level for ownership in first column and a 20% cutoff level in second column. . IPO means family firms that were Type 2 firms right after being listed. The statistics refer to the fraction of firms ending up in that Type. All variables are defined in Appendix 1.

| Panel A: Transition from Type 1 | | |
|---|---|---|
| | Family ownership | No family ownership |
| Family CEO | TYPE 1<br>Start stage | TYPE 2<br>0.36 |
| Non-family CEO | TYPE 3<br>0.62 | TYPE 4<br>0.03 |

| Panel B: Transition from Type 2 | | |
|---|---|---|
| | Family ownership | No family ownership |
| Family CEO | TYPE 1<br>0 | TYPE 2<br>Start stage |
| Non-family CEO | TYPE 3<br>0 | TYPE 4<br>1 |

| Panel C: Transition to Type 2 | | |
|---|---|---|
| *From* | 5% ownership | 20% ownership |
| Type 1 | 0.65 | 0.60 |
| Type 3 | 0.22 | 0.02 |
| IPO | 0.13 | 0.37 |

# Table 4
## Univariate Differences across Firm Types

*Type 1* are firms where the founding family has at least 5% ownership and retains the top management position. *Type 2* are firms where the family has less than 5% ownership but a family member serves in the top management position. *Type 3* are firms where the family has more than 5% of the shares but the top manager is not a family member. *Type 4* firms are ex-family firms, where the family ownership is less than 5% and the founding family does not hold the top management position. All variables are defined in Appendix 1. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

| Family firm classification | Type 1 | Type 2 | Type 3 | Type 4 | Type 1-2 | Type 1-3 | Type 1-4 | Type 2-3 | Type 2-4 | Type 3-4 |
|---|---|---|---|---|---|---|---|---|---|---|
| ROA | 5.292 | 4.225 | 4.740 | 3.432 | 1.0663*** | 0.5518*** | 1.8595*** | -0.5145*** | 0.7932*** | 1.3077*** |
| Tobin Q | 1.490 | 1.493 | 1.575 | 1.454 | -0.0059 | -0.0953*** | 0.0261** | -0.0894*** | 0.0320*** | 0.1214*** |
| Volatility of industry sales | 20.68 | 20.59 | 21.049 | 20.71 | 0.0920*** | -0.3681*** | -0.0179 | -0.4600*** | -0.1099*** | 0.3501*** |
| Firm size | 16.96 | 17.84 | 17.578 | 17.84 | -0.886*** | -0.6219*** | -0.8793*** | 0.2637*** | 0.0064 | -0.2574*** |
| Leverage | 20.45 | 21.30 | 17.647 | 19.66 | -0.857*** | 2.7979*** | 0.7901*** | 3.6548*** | 1.6470*** | -2.0078*** |
| Equity issuance dummy | 0.195 | 0.165 | 0.162 | 0.12 | 0.0308*** | 0.0337*** | 0.0754*** | 0.0028 | 0.0446*** | 0.0418*** |
| Firm age | 38.61 | 48.55 | 41.908 | 50.03 | -9.941*** | -3.3005*** | -11.4244*** | 6.6413*** | -1.4825*** | -8.1239*** |
| Foreign ownership | 0.668 | 1.137 | 0.894 | 2.133 | -0.469*** | -0.2262*** | -1.4648*** | 0.2434* | -0.9953*** | -1.2387*** |
| Family ownership | 21.26 | 0.00 | 26.404 | 0.00 | 21.2555*** | -5.1483*** | 21.2555*** | -26.4038*** | 0.00 | 26.404*** |
| Family legacy | 0.349 | 0.288 | 0.354 | 0.238 | 0.0605*** | -0.0058 | 0.1103*** | -0.0663*** | 0.0498*** | 0.1161*** |
| Family on the board | 0.316 | 0.251 | 0.316 | 0.141 | 0.0646*** | -0.0001 | 0.1753*** | -0.0647*** | 0.1107*** | 0.1754*** |
| ELITE family on the board | 0.262 | 0.295 | 0.254 | 0.106 | -0.0336*** | 0.008 | 0.1561*** | 0.0417*** | 0.1898*** | 0.1481*** |
| Elite non-family on the board | 0.738 | 0.865 | 0.825 | 0.907 | -0.1267*** | -0.0866*** | -0.1692*** | 0.0401*** | -0.0425*** | -0.0826*** |
| Stable ownership | 22.25 | 15.83 | 30.059 | 31.84 | 6.4220*** | -7.8071*** | -9.5899*** | -14.2291*** | -16.011*** | -1.7828*** |
| CEO age | 57.95 | 59.34 | 61.110 | 62.17 | -1.3920*** | -3.1636*** | -4.2248*** | -1.7715*** | -2.8328*** | -1.0613*** |
| CEO tenure | 16.57 | 14.03 | 5.009 | 4.569 | 2.5389*** | 11.5611*** | 12.0012*** | 9.0222*** | 9.4623*** | 0.4401*** |
| CEO eliteness | 0.145 | 0.219 | 0.287 | 0.387 | -0.0742*** | -0.1417*** | -0.2419*** | -0.0675*** | -0.1677*** | -0.1002*** |
| Number of observations | 14,697 | 4,606 | 3,821 | 5,393 | | | | | | |

# Table 5

## Performance Comparisons: Type2 Firms vs the Rest

The dependent variables in these regressions are ROA, Tobin's Q and Sales Growth, measured at the firm level. Non-family Firms are those that were never owned by families. *Type 1* are firms where the founding family has at least 5% ownership and retains the top management position. *Type 2* are firms where the family has less than 5% ownership but a family member serves in the top management position. *Type 3* are firms where the family has more than 5% of the shares but the top manager is not a family member. *Type 4* firms are ex-family firms, where the family ownership is less than 5% and the founding family does not hold the top management position. *Non*-family are firms that were not listed by individuals or families. The default firm type in each regression is *Type 2*. ROA is measured as operating income scaled by book assets. Tobin's Q is measured as the market value of the firm scaled by book assets. Sales Growth refers to year-on-year growth in total revenues. *t*-statistics are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

| | ROA | Q | Sales Growth |
|---|---|---|---|
| Type 1 Firms | 0.5760*** | 0.0369 | 0.7637** |
| | (2.6301) | (1.4766) | (2.1455) |
| Type 3 Firms | 0.4511* | 0.0106 | 0.1253 |
| | (1.9449) | (0.3919) | (0.3370) |
| Type 4 Firms | -0.5555** | -0.0811*** | -0.8610** |
| | (2.3172) | (3.0009) | (2.1438) |
| Non-family Firms | -0.6598*** | -0.0821*** | -1.2850*** |
| | (2.6818) | (3.0503) | (3.2958) |
| Family Controls | YES | YES | YES |
| Finance Controls | YES | YES | YES |
| Constants | 15.3445*** | 1.4093*** | 25.7180*** |
| | (17.1886) | (18.0771) | (7.1476) |
| Number of observation | 63272 | 63272 | 63272 |
| Prob > F | 0.0000 | 0.0000 | 0.0000 |
| R-squared | 0.3454 | 0.3591 | 0.3003 |
| Number of clusters | 3222 | 3222 | 3222 |
| Industry dummy | Yes | Yes | Yes |
| Year dummy | Yes | Yes | Yes |

# Table 6

## Determinants of Control without Ownership.

The dependent variable in the logistic regressions model 1, 2, and 3 is defined as an event when a Type 1 firm transforms to become a Type 2 firm. The dependent variable in model 4 is defined as an event when a Type 1 firm transforms to become a Type 3 firm. All variables are defined in Appendix 1. *t*-statistics are reported in parentheses. ***, **, and * denote significance at the 1%, 5%.

| | | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|---|
| **Finance factors** | ROA | -0.0239 | | -0.0091 | -0.0817*** |
| | | (1.33) | | (0.44) | (4.62) |
| | Tobin Q | 0.0603 | | 0.1364 | 0.3047** |
| | | (0.38) | | (0.90) | (2.22) |
| | Volatility of industry sales | 0.3332 | | 0.2796 | 0.0731 |
| | | (1.79) | | (1.46) | (0.58) |
| | Firm size | 0.1544*** | | -0.0339 | -0.0012 |
| | | (2.65) | | (0.49) | (0.02) |
| | Leverage | 0.0207*** | | 0.0220*** | 0.0000 |
| | | (3.70) | | (3.82) | (0.01) |
| | Equity issuance dummy | 0.5114*** | | 0.5206*** | 0.2132 |
| | | (3.31) | | (3.31) | (1.19) |
| | Firm age | 0.0025 | | -0.0134** | -0.0084 |
| | | (0.52) | | (2.34) | (1.52) |
| | Foreign ownership | 0.0253 | | 0.0007 | 0.0087 |
| | | (1.32) | | (0.03) | (0.52) |
| **Family factors** | Family ownership | | -0.1002*** | -0.1109*** | 0.0117** |
| | | | (7.78) | (7.72) | (2.32) |
| | Family legacy | | -0.2146 | -0.0782 | -0.0788 |
| | | | (1.42) | (0.50) | (0.54) |
| | Family on the board | | -0.1281 | -0.1635 | 0.6101*** |
| | | | (0.80) | (1.01) | (4.55) |
| | ELITE family on the board | | 0.2033 | 0.3007* | -0.2049 |
| | | | (1.15) | (1.65) | (1.15) |
| | Elite non-family on the board | | 0.1823 | 0.1944 | 0.2964* |
| | | | (0.96) | (1.00) | (1.81) |
| | Stable ownership | | -0.0402*** | -0.0398*** | -0.0099** |
| | | | (4.80) | (4.73) | (2.19) |
| **Control factors** | CEO age | -0.0174** | -0.0290** | -0.0245*** | 0.0604*** |
| | | (2.08) | (3.13) | (2.61) | (6.70) |
| | CEO tenure | 0.0154** | 0.0268*** | 0.0208*** | 0.0253*** |
| | | (2.49) | (3.84) | (2.98) | (4.32) |
| | CEO eliteness | -0.2406 | -0.4639** | -0.4517** | 0.1569 |
| | | (1.28) | (2.36) | (2.26) | (0.79) |
| | Number of observations | 19626 | 19626 | 19626 | 21110 |
| | Number of transitions | 233 | 233 | 233 | 299 |
| | Pseudo R2 | 0.0574 | 0.1414 | 0.1566 | 0.1205 |

# Table 7

## Determinants of Type 2 loss of control.

The dependent variable in the logistic regressions is defined as an event when a *Type 2* firm transforms to become a *Type 4* firm. All variables are defined in Appendix 1. *t*-statistics are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels.

| | | Model 1 | Model 2 | Model 3 |
|---|---|---|---|---|
| **Finance factors** | ROA | -0.1294**** | | -0.1267**** |
| | | (5.91) | | (5.83) |
| | Tobin Q | -0.2113 | | -0.2120 |
| | | (0.86) | | (0.85) |
| | Volatility of industry sales | -0.1165 | | -0.1186 |
| | | (0.69) | | (0.70) |
| | Firm size | 0.3234**** | | 0.3276**** |
| | | (5.13) | | (4.89) |
| | Leverage | 0.0089 | | 0.0078 |
| | | (1.50) | | (1.32) |
| | Equity issuance dummy | -0.3650 | | -0.3534 |
| | | (1.48) | | (1.43) |
| | Firm age | 0.0152*** | | 0.0166*** |
| | | (3.00) | | (3.26) |
| | Foreign ownership | 0.0434*** | | 0.0449**** |
| | | (3.25) | | (3.43) |
| **Family factors** | Family ownership | | | |
| | Family legacy | | -0.2847* | -0.3769** |
| | | | (1.68) | (2.10) |
| | Family on the board | | -0.3705** | -0.3561** |
| | | | (2.15) | (1.99) |
| | ELITE family on the board | | -0.3481** | -0.4631*** |
| | | | (2.07) | (2.62) |
| | Elite non-family on the board | | 0.5914*** | 0.3021 |
| | | | (2.59) | (1.25) |
| | Stable ownership | | -0.0027 | 0.0006 |
| | | | (0.50) | (0.11) |
| **Control factors** | CEO age | 0.0571**** | 0.0515**** | 0.0527**** |
| | | (5.89) | (5.09) | (5.14) |
| | CEO tenure | 0.0074 | 0.0150*** | 0.0155*** |
| | | (1.29) | (2.73) | (2.62) |
| | CEO eliteness | 0.5395*** | 0.1469 | 0.4059** |
| | | (3.28) | (0.82) | (2.30) |
| | Number of observations | 20524 | 20524 | 20524 |
| | Number of transitions | 204 | 204 | 204 |
| | Pseudo R2 | 0.0678 | 0.1092 | 0.1176 |

# Appendix A.1.
## Variable Definitions

| Variable | Variable Definition |
|---|---|
| **Ownership & control variables** | |
| Family shareholdings | Fraction of total shares controlled by the founding family |
| Half-life Ownership | Family half-life ownership |
| Type 1 firms | Firms where the founding family retains both significant ownership (at least 5% of the shares) and top management position as the CEO. |
| Type 2 firms | Firm where the founding family's ownership is insignificant but one of its members is the CEO |
| Type 3 firms | Firm where founding family retains significant ownership but none of its members is the CEO |
| Type 4 firms | Firm where founding family neither retains significant ownership nor as the CEO |
| Non-Family firms | Firms that where never family firms, defined as firms that were not listed by a family or an individual. These firms are typically listed by other corporations. |
| **Family factor variables** | |
| Family legacy | Dummy variable set to 1 when the founding family name and firm name are the same; set to 0 otherwise |
| ELITE family on the board | Dummy variable set to 1 when there is at least one ELITE family on the board; set to 0 otherwise |
| ELITE non family on the board | Dummy variable set to 1 when there is at least one ELITE non-family on the board; set to 0 otherwise |
| Elite Education | Dummy variable set to 1 if an executive has a bachelor degree from a top national university, defined as former Imperial universities (Tokyo, Kyoto, Osaka, Nagoya, Kyushu, and Hokkaido University) as well as Kobe and Hitotsubashi University; set equal to 0 otherwise |
| Stable ownership | The percentage of shareholdings by the shareholders who were listed in the top 10 shareholders for at least 5 consecutive years |
| **Financial factor variables** | |
| ROA | Return on Assets defined as operating income scaled by total assets |
| Tobin Q | The market value of equity plus the book value of debt scaled by total assets |
| Volatility of industry sales | Standard deviation of sales of the industry where the firm operates in the past 5 years. The industry is measured at the 2-digit SIC code. |
| Firm size | The natural log of total assets |
| Leverage | Total outstanding debt scaled by total assets |
| Equity issuance dummy | Dummy variable set equal to 1 if firms experience the change of share outstanding from previous year more than 10%; set 0 otherwise |
| Firm age | The number of years since incorporation |
| Foreign ownership | Fraction of shares held by foreign investors who are listed in the top ten shareholders |

| Variable | Variable Definition |
|---|---|
| **Control variables** | |
| CEO age | Age of the CEO |
| CEO tenure | Number of years as the CEO |
| ELITE CEO | Dummy variable indicating whether the CEO has a bachelor degree from an elite university |