Adoptive expectations: Rising sons in Japanese family firms ☆

Vikas Mehrotra [a,*], Randall Morck [a,b], Jungwook Shim [c], Yupana Wiwattanakantang [d]

[a] University of Alberta School of Business, Edmonton, Canada T6G2R6
[b] National Bureau of Economic Research, Cambridge, MA 02138, USA
[c] Faculty of Economics, Kyoto Sangyo University, Kyoto 603-8555, Japan
[d] National University of Singapore Business School, Singapore 119245, Singapore

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ABSTRACT

We find inherited family firms more important in postwar Japan than generally realized, and also performing well on average. Non-consanguineous heir-run firms outperform blood heirs' firms, and roughly match founder-run listed firms, while blood heirs surpass professional managers at running family firms. Further, succession events suggest that adopted heirs "cause" elevated performance. We suggest that heir-run firms do well because non-consanguineous heirs displace the least talented blood heirs, the non-consanguineous heir "job" motivates professional managers, and the threat of displacement encourages blood heirs' effort and human capital accumulation, mitigating the "Carnegie conjecture" that inherited wealth deadens talent.

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You can't choose your sons, but you can choose your sons-in-law.

Adage explaining Japanese business families joy at the birth of a girl.[1]

1. Introduction

In developed economies, inherited control is linked to poor firm performance (Morck, Stangeland, and Yeung, 2000; Smith and Amoako-Adu, 2005; Bertrand and Schoar

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2006; Perez-Gonzalez, 2006; Bennedsen, Perez-Gonzalez, and Wolfenzon, 2007). Our panel of nearly all Japanese firms listed from 1949 (when markets reopened after World War II) to 1970, and followed until 2000, reveals inherited control more common than generally thought (Chandler, 1977; Porter, 1990) and heir-run firms performing well. These results are robust, and analysis of succession events shows heir control "causing" good performance.

To explain this exceptionalism, we explore two unique practices of Japanese business families: marriages arranged to inject talent into business families and adoptions of promising adults as principal heirs. Indeed, many families employ both simultaneously. These practices motivate the introductory adage, for business families celebrate a daughter's birth, a new space for an adopted son-in-law, with red rice (Morikawa, 1992). Star managers and elite university graduates are prime candidates; daughters' love interests are secondary, or irrelevant (Hamabata, 1991; Chen, 2004). These practices remain common in business families in postwar Japan–roughly 10% of our successions transfer control to a son-in-law, adopted son, or adopted son-in-law–for brevity we refer to all as *non-blood heirs*.

Non-blood heirs might explain Japan's exceptionalism in various ways. First, non-blood heirs might indeed be very talented, and Chief Executive Officer (CEO) talent might matter greatly to firm performance (e.g., Bertrand and Schoar, 2003; Bennedsen, Perez-Gonzalez, and Wolfenzon, 2010). If this were the only driver of high heir-run firm performance, blood heirs, whose families valued blood over yen, might generate poor firm performance, as in other developed countries, while the larger group of all heir-run firms on average might still display superior performance vis-à-vis professionally run firms.

Second, the mere existence of a non-blood heir option might alter the characteristics of observed blood heirs. Non-blood heirs might displace the least talented blood heirs, elevating the mean performance of observed blood-heir-run firms by clipping off the lower tail. Or, fearing displacement by a "better" son, blood heirs might not dare slack, allaying Carnegie's (1899) conjecture that inherited wealth "deadens the talents and energies." As with hostile takeovers, the threat may eclipse the incidence, elevating blood-heir firms' performance vis-à-vis professionally managed firms.

Third, the existence of a non-blood heir option might also alter the characteristics of professional managers in family firms. The possibility of such a "job" might attract higher quality managers to family businesses in Japan than elsewhere. Or, competition for the merit-based "non-blood heir job" might incentivize professional managers, raising performance in family firms that might consider a non-blood heir.

We find non-blood heirs' firms to be star performers, consistent with their being selected for talent. Reinforcing this, non-blood heirs are disproportionately alumni of elite merit-based admissions universities. We also find blood-heir firms performing better than non-family firms and professionally run family firms, in line with the selection and incentive effects discussed above.

The paper is organized thus. Section 2 describes Japanese adoption and marriage norms. Sections 3, 4, 5 describe our data and variables, empirical results, and conclusions.

2. Uniquely Japanese institutions?

Differences between Japan and other countries are easily exaggerated. However, arranged marriage has persisted more tenaciously in Japan (see, among other, Hamabata, 1991) than in most other high-income countries; and Japan unquestionably has a unique concept of adoption. These institutions provide a unique setting in which to study family firms.

2.1. Adult adoption as succession policy

A family may adopt a new adult son if nature disappoints by providing no natural son, or only inadequate ones. Adult adoptions, predominant in Japan, are vanishingly rare elsewhere in Asia and the West.[2] The adoptee legally takes the family name, swears allegiance to his new ancestors, and often also marries a daughter of the current patriarch.

Horie (1966) explains the origins of this tradition: "It was common practice in old Japan to adopt a son from other families, without discrimination among relatives or non-relatives, and let him inherit the *ie* (house), not only when the *ie* lacked lineal heirs, but even in case the heir lacked the capacity needed to inherit the *ie*." Kondo (1990) and Bhappu (2000) remark on the longevity of many Japanese family firms, and link this to adopted heirs. Adult adoption remains unremarkable: Paulson (1984) finds 30% of survey respondents affirming "an adoptee was among their relatives." Comparisons are difficult because many countries keep adoptions confidential, but Yamahata (1977) estimates adoption far more popular in modern Japan than in any other country, save the United States.

Japanese adoptions retain a mercantile ethos. While most US adoptees are children, Japanese adoptees are overwhelmingly adults. In 2000, the US recorded over 127,000 adoptions, 31.4 adoptions per 1,000 births, with 2.5% of all US children adopted—quite likely the highest figures in the world (Bernal, Hu, Moriguchi, and Nagypal, 2007; US Census Bureau, 2003). Excluding step-parent adoptions, Moriguchi (2010) estimates 20.4 child adoptions per 1,000 births in the US in 2000, but only 1.6 child adoptions per 1,000 births in Japan that year. Only 1,356 of the 80,790 adoptions registered in Japan in 2000 were of children; and of these, 362 were by grandparents or

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[2] Adult adoptions occured in the ancient West. The "good emperors" —Nerva, Trajan, Hadrian, Antonius Pius, and Marcus Aurelius—each an adopted son of his predecessor, ruled the Roman Empire from 96 to 180 AD, its longest span of good government (Gibbon, 1776, bk. 1 c. 1). The era ended when the stoic philosopher, the Emperor Marcus Aurelius, could not bear disinheriting his blood son, the eponymous Commodus, whose reign of terror ended with his assassination in 193 AD See also Ninan (1985) who writes that under the old Jewish Law of Zelophehad, a husband could be adopted by a wife's sonless father.

step-parents. The other 79,434 adoptions, 98% of the total, were of adults.

Since 1988, two forms of adoption (*yôshi*) are allowed.[3] *Special adoption* (*tokubetsu yôshi*), emulating US adoptions, permanently transfers a child younger than six (eight in certain foster care cases) to new parents. This new, imported, and rarely used procedure severs all legal links between the child and its biological parents to advance the welfare of a needy child (Hayes and Habu, 2006). Courts approve only a few hundred per year: 362 in 2000, and 350 in 2002.[4]

The traditional form, now called *ordinary adoption* (*yôshi engumi* or *fûtsu yôshi*), far more common, is a contract between consenting adults (Bryant, 1990, p. 300). The adoptee, usually an adult male, agrees to carry forward his new family's name in return for an inheritance. Both parties must be over 15 the age of consent, or court approval is needed–save for adoptions of grandchildren or step-children (Civil Code §798)–and the adoptee must be at least a day younger than his new parent. Adoptees' mean age at adoption is over 20. O'Halloran (2009) notes the "continuing tradition of providing for the adoption of adults, is without any comparable precedent among developed nations." Bryant (1990) and Kitsuse (1964) describe it as uniquely Japanese.

Table 1 summarizes adoptions by legal form and adoptee age. The adult fraction rises through time, averaging 97–98% after 1990. Of the 83,505 adoptions registered in 2004, 1,330 (1.6%) were of children: 332 (0.4%) special adoptions of needy children and 998 (1.2%) ordinary adoptions of minors.[5] Higher child adoption rates in earlier decades may reflect war orphans.

Ordinary adoption sanctifies the voluntary severing of most, but not all, ties to one's birth parents and their replacement with fealty to new parents. The adoptee may contact his birth parents, and even inherit from them. If the adoptive relationship is disrupted, the adoptee may return to his biological parents. Most adult adoptees are sons (Paulson, 1984, p. 165, 289) because the practice is designed to rescue biologically ill-fated families, not help a needy child. Hayes and Habu (2006), p. 1 elaborate: "Adoptions can be used to reconstruct patriarchal families." Parents who adopt adult sons either lack biological sons or desire better quality sons than nature provided. Nakane (1967) argues that families seldom disinherit a biological son in favor of an adopted son, but ethnographic work refutes this. Beardsley, Hall, and Ward (1959) report one or more instances of adopted sons superseding biological sons in 25–33% of rural families; Pelzel (1970) finds such displacements in 25% of the families he studies; and Bachnik (1983) reports a 34% incidence.

Pre-modern records indicate even higher rates (Bachnik, 1983, p. 163), perhaps in response to inheritance laws. Edo law required an *ie* to pass, in entirety, from one patriarch to the next–a designated male of the same family name (Rohl, 2005). Each family thus required

Table 1
Adoption statistics.

Special adoptions, explicitly modeled on the foreign practice of finding homes for orphans and mistreated or unwanted children, are a recent innovation. *Ordinary adoptions*, in contrast, are a deeply rooted Japanese tradition, in which parents needing an heir adopt a child or adult.

Sources: Tokubetsu yôshi and Child Adoptions Approved by the Court: Supreme Court of Japan. shihôtôkeinenpô Kajihen are from issues of the *Annual Report of Judicial Statistics* (Table 3 of vol. 3, Family Cases). Adoptions registered by Koseki offices are from issues of the Ministry of Justice Annual report (Hômu nenkan).

	All adoptions	Special adoptions	Ordinary adoptions of minors	Total adoptions of minors	Total adoptions of adults
	yôshi engumi	*tokubetsu yôshi*	*miseinen yôshi*		
1955	101,963	0	26,983	26,983	74,980
1965	82,176	0	15,018	15,018	67,158
1975	86,844	0	6,771	6,771	80,073
1985	91,186	0	2,804	2,804	88,382
1990	82,007	738	1,502	2,240	79,767
1995	79,381	521	1,111	1,632	77,749
2000	80,790	362	994	1,356	79,434
2002	85,674	350	960	1,310	84,364
2004	83,505	332	998	1,330	82,175

a male heir, lest the *ie* pass to the state or distant cousins. Adult adoptions provided the solution.

The tradition of adult adoption lets a family business patriarch adopt a new son, say, a star employee, should his biological sons prove uninterested in, or incapable of, honoring the family name. This occurs with some regularity (Paulson, 1984, p. 165–175; Kurosu, 1998; Hayes and Habu, 2006, p. 2). For example, Kajima Construction, a global construction firm, has been run by three generations of non-blood heirs. Morinosuke Kajima, a son-in-law adopted into the Kajima family, served as the first postwar CEO.[6] He bypassed his blood son to name his two adopted sons CEO and Chairman. Both married Kajima's biological daughters. Only after the younger son-in-law ascended from CEO to Chairman did Morinosuke's biological son serve as CEO, and then more briefly than either adopted son-in-law. Other well-known Japanese firms that make use of adopted sons include Panasonic, Suzuki Motors, and Taisho Pharmaceuticals.

Calling such adoptions *transactions* is apt. Hayes and Habu (2006), pp. 2–3 explain: "in Japanese society there continues to be a vein of unsentimental pragmatism towards adoption arrangements. There is a fairly widespread view that it is ethically acceptable for parents to become adopters for worldly objectives, even if they do not intend from the outset, to love the child as their own." Lebra (1989), p. 203 elaborates: "nurturance and intimacy were secondary or irrelevant to the mandate of professional succession, and often were completely absent from the adoptive relationship—even where the adoptee was destined to become the new head of the household."[7]

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[3] This discussion follows Hayes and Habu (2006), c1.

[4] Hayes and Habu (2006), Table 2, p. 137, and Table 1, this paper.

[5] Municipal Koseki Offices register births, marriages, adoptions, address changes, and deaths.

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[6] The Japanese title *shacho* is variously translated as president or CEO. We adopt the latter throughout.

[7] Quoted in Hayes and Habu (2006), p. 11.

Japanese adoptions distress both Chinese and Western sensibilities. The Chinese *Taiho* Code of 702 AD limited adoptions to blood kin (Mass, 1989, pp. 9–11, 25, 72), but was soon "improved." German advisors wrote primogeniture into the 1896 Civil Code (Morris, 1895); but translators "improved" it too (Bachnik, 1983, pp. 168–169). Adopters must be a day or more older than the adoptee (Civil Code §792-3; Takenoshita, 1997, p. 9), though registries can let a younger parent adopt an older child "by mistake" (Nishioka, 1991, pp. 232–234). American reformers appended a US-style adoption law during the postwar occupation—again without real effect.

Elsewhere in East Asia, adoptions are a duty of blood kin, but "more rigid forms of Confucianism have not constrained non-relative adoption in Japan to nearly the same degree" (Kaji, 1999; see also Bryant, 1990, n. 32).[8] The practice even evokes censure in Japan. Dazai Shundai (1680–1747), a Confucian traditionalist, deplores Japan's "lawlessness," citing "barbarous" and "promiscuous" adoptions as "a major example of chaos" (Lebra, 1989, p. 185; quoting Kirby, 1908); and the 19th century historian Shigeno (1887) compares the "evils" of adoption to those of imperial abdication (Lebra, 1989, p. 186).

To be sure, Japanese can feel distress adopting an adult son to displace a blood son as heir. Hamabata (1991), p. 45 describes a family business matriarch who "could barely stand the pain of realizing that her son would not be the successor," but accepted that "the position of household head needed to be filled, and it was to be filled by merit, not by right of birth."

Western observers may find non-consanguineous heredity puzzling. Hamabata (1991), p. 90 explains that the current family patriarch, regardless of recent or past violations of blood lines, "if asked about his lineage … would turn to the household altar, point to the nearest ancestral tablets, and claim that the crowd composes his direct antecedents. Adopted sons, or adopted married couples, brought in as successors a few generations back, are conveniently forgotten." He continues that "the concept of descent has little or nothing to do with genealogical relationships. Rather, it serves as an ideology that orders the history of the *ie*." The *ie* requires an heir capable of governing the family wisely and the family business profitably. Given this imperative, Hamabata (1991), p. 91 spells out that "patrilineal descent may not be real in biological terms, but it is real in the realm of the symbolic and the emotive."

Burkart, Panunzi, and Shleifer (2003) model a fundamental trade-off in business family successions. The best professional CEO, selected from the entire population, is typically more able than the family's most talented son. However, succession to a son preserves the amenity value of continued family control and avoids agency problems arising from incomplete contracts. Non-blood heirs would appear to provide an end-run around this tension: they are selected from the wider population but are also made family. But something akin to the tension in Burkart et al. persists because the reconfiguration of the family has

costs, as the Hamabata (1991) vignettes show: mothers distraught at their sons being passed over and daughters assigned to loveless marriages. Families especially so distressed might opt for a blood succession if a tolerably able blood heir is available; or for a professional manager if one is not. If fear of a latent non-blood heir induces effort in prospective blood heirs, the Burkart et al. margin shifts further towards blood-heir successions. Non-blood heirs take charge where an edge in talent outweighs family distress.

Adoption as a form of succession planning is (as far as we know) a uniquely Japanese practice and may differentiate its family businesses fundamentally from those elsewhere. Indeed, Chen (2004) argues that this point is "crucial to understanding the differences in ownership, organization, and management" in Japan (versus Korea). Certainly, the pay-for-performance dimension of becoming the next patriarch, and thus the steward of a vast family fortune, is not usually included as executive compensation (Kubo, 2005).

2.2. High powered incentives?

Because the incest law only proscribes sex between biological siblings, a daughter and adopted son may marry. Tokugawa era merchant families could thus reward a star manager with marriage to a daughter, adoption, or both (Morikawa, 1992). Hayes and Habu (2006), p. 1 describe how "families with superfluous sons would pair them off in a combined marriage and adoption to families with daughters;" but families with unsuitable sons could also recruit a *muko yôshi*, or *husband-brother*, for a selected daughter. Paulson (1984) reports 55% of adoptees in 1981 to be sons-in-law. If a desirable candidate is married, an adult married couple can be adopted as a package.

Becoming a business family patriarch's new "number one" son, and thus the heir apparent of a great family business, is an immense reward. Augmenting this with an arranged marriage to the patriarch's daughter by blood may further strengthen the adoptee's position. Marriage gives the adoptee a family matriarch, whose status depends on controlling family disputes and difficult relatives. Likewise, adoption raises the son-in-law's status above that of a mere son-in-law, however important to the family business (Hamabata, 1991, p. 149).

The importance of this distinction for our purposes is unclear. Hamabata (1991), p. 151 describes an unadopted son-in-law "chosen as the successor to the household head and the next president" of the family business thus: "In every other respect, however, the marriage resembled that of a *muko-yôshi*: the *josei* (daughter's husband) moved into the position of successor in his wife's household; she, not he, would be expected to assume responsibility for Muramoto household properties, including the largest block of common stock …; her children would not be considered *soto mago* (outside grandchildren) … but grandchildren of the Muramoto *ie* who would be expected to assume the Muramoto name … and be considered for successor-ship in the next generation."

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[8] Quoted in Hayes and Habu (2006), p. 11.

Though a genuine son, a *muko yôshi* can be disparaged as cold-blooded. Hamabata (1991) describes daughters forced to "bear the burden of mockery that is surely to be encountered for marrying a man who is willing to give up the name of his household." Hamabata (1991), p. 150 quotes such a daughter: "a *muko-yôshi*, like most men … is driven by his desire to achieve at least a modicum of financial success. The difference between a *muko-yôshi* and other men, however, is that he is willing to find success through marriage, through a kind of marriage that would mean giving up his household's name, giving up his position within his household, and assuming a position in his wife's household, thereby cutting off ties with not only the living members of his household of birth but his household's history, with his ancestors as well. What man would do that?" Her answer: "a *muko-yôshi* might be so ambitious that he would be driven to put his individual interests before those of the household's as a whole." This may be insufficiently appreciative, for the adoptee's ex-family is paid, and he might equally be lauded for sacrificing his birthright to aid needy ex-kin. Still, resigned to her fate, the bride-to-be concedes that "*muko-yôshi* are necessary for the continued existence of households, but unfortunately, as *tanin* (outsiders), they can never be fully trusted." Thus, if marriage alone delivers money and power enough, the son-in-law "job" might deflect allegations of pleonexia.

The above oversimplifies, but conveys the gist of non-consanguineous heredity. We distill three potential implications for family businesses, which our empirical analysis explores. First, a business family can replace a "disappointing" son with a son-in-law and/or adopt a new son who is more able. Non-blood heirs let family firms expand their successor searches beyond biological sons, and even beyond blood kin and current in-laws, to include virtually the same applicant pool a professionally managed firm might tap. This broader talent pool could let Japanese family firms boost their odds of successions to highly talented heirs. Second, professional managers

working for a Japanese family firm are not automatically excluded from the top job of "heir." Such firms could induce the tournament competition that professionally run firms elsewhere use to elicit effort from rising executives. Third, fear of being "forced out into the world" (Burke, 1962, p. 109) might induce effort in biological sons. Displaced biological sons are not abandoned, but become secondary to the family. Thus, Hamabata (1991), p. 153 describes a displaced son "sent to study at Cornell as a special student. Although he would receive no degree, on his return he could begin employment "outside" … claiming to have studied at a leading American school of engineering." Such stories, even if rare, might mitigate the Carnegie Conjecture that inherited fortunes deaden initiative and blunt talent.

2.3. An example of the succession process

Suzuki Motors relies extensively on adoptees for the top job, currently held by Mr. Osamu Suzuki. Born Osamu Matsuda, he graduated from Chuo University in 1953, and worked at a bank until 1958 when, at age 28, he was adopted by the patriarch, Shunzou Suzuki, married a Suzuki daughter (Shoko), and took the Suzuki name. Osamu joined Suzuki's board in 1963, became President in 1978, and Chair in 2000. Fig. 1 plots Osamu's career and family ties against his age. This continues a long Suzuki tradition of adopted son-in-law heirs. Osamu Suzuki is the fourth in a succession of adopted heir CEOs. Osamu, in turn, designated his son-in-law, Hirotaka Ono, as his heir, passing by his blood son, then with General Motors, who nonetheless eventually joined Suzuki's board. Explaining his choice, the elder Osamu opined: "In terms of age and experience, Ono is more capable compared to (my) son." Ability trumped blood, though Ono's premature death brought Osamu back as Chair and CEO in 2007.

The order can vary. Marriage was more apt to precede adoption in the prewar era (Kerbo and McKinstry, 1995).

Mr. Osamu Matsuda graduates from Chuo University; Joins Chuo Sogo Bank Age: 23	Arranged marriage 1st daughter of Shunzou Suzuki; Joins Suzuki Motors; Adopted into Suzuki family Age: 28	Joins Board of Suzuki Motor Age: 33	Promoted to President Age: 48
1953	1958	1963	1978

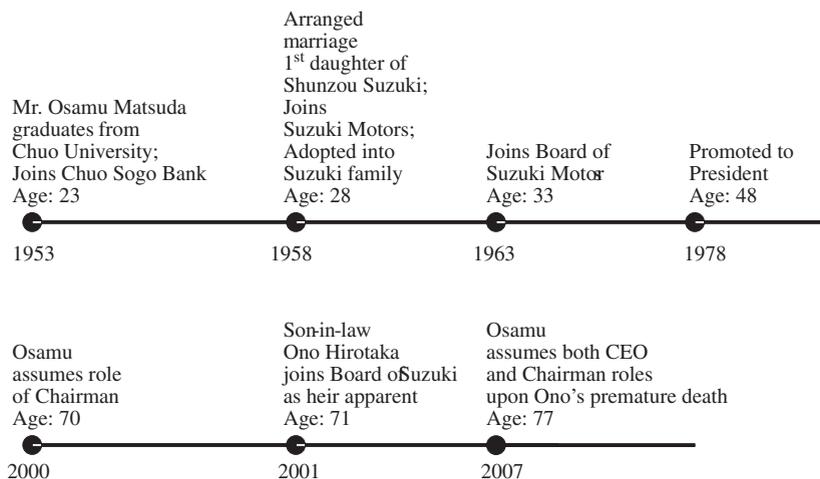| Osamu assumes role of Chairman Age: 70	Son-in-law Ono Hirotaka joins Board of Suzuki as heir apparent Age: 71	Osamu assumes both CEO and Chairman roles upon Ono's premature death Age: 77
2000	2001	2007

Fig. 1. Typical succession timeline: Suzuki Motor Company, 1953–2007. The career of Osamu Matsuda from his graduation at Chuo University in 1953 through his adoption by Suzuki patriarch, Shunzou Suzuki, and simultaneous marriage to Shunzou's eldest daughter in 1958, to his current position as CEO and Chairman of Suzuki and the patriarch of the Suzuki family.

Thus, the patriarch of the Yasuda financial *zaibatsu*, Yasuda Zenjirō, arranged a daughter's marriage to Teichi Iomi, a Tokyo University alumnus and star manager. Later, bypassing three blood sons, he adopted Iomi, who changed his name to Zenjiro Yasuda, as heir. But regardless of the precise sequence, a long career arc allows the patriarch to observe, assess, and groom the adoptee.

3. Data description

We begin with the population of 1,433 nonfinancial firms listed on all exchanges (Tokyo, Nagoya, Fukuoka, and Osaka) from 1949 (when markets reopened after the war) to 1970. We follow these from 1962, when standardized disclosure began, to 2000 or delisting, whichever is first.[9] Missing ownership, board, and financial data cut this to 1,367 firms-still 95% of listed firms in this window.

3.1. Data sources

Our ownership data for 1981 through 2000 and accounting data from 1962 to 2000 are from the Development Bank of Japan. Toyo Keizai provides data on stock prices (1962–2000) and boards (1989–2000). Prior years and missing ownership, board, and financial data are from annual reports at the Institute of Innovation Research of Hitotsubashi University.

Ownership data in annual reports include: (1) stakes of the top ten shareholders, (2) a combined stake of all banks and financial firms, and (3) a combined stake of all firms. Board data include each director's alma mater, major, graduation year, birth date, year hired, year appointed to the board, years made CEO (*shacho*) and Chair (*kaicho*), and prior experience.

We identify founders from commemorative volumes (*shashi*) celebrating firms' anniversaries, Nihon (2004), and company Web sites. Family relationships are from Japanese language sources: Tokiwa (1977) for family trees of 1,002 business leaders; books Zaikai (1979, 1981, 1982, 1983, 1985) for family members on boards; and Nihon (2004) volumes for biographies of business leaders. Additional information on family relationships is from *Who's Who* analogs by Jinjikoshinjo, the Nikkei Telecom 21 (corporate news from *Nihon Keizai Shimbun*, *Nikkei Business Daily*, *Nikkei Financial Daily,* and *Nikkei Marketing Journal*), company archives, Koyano (2007), and Web sites. We annotate founders' family trees with heirs' names and business roles. This clarifies ultimate owners and each CEO/Chair's ties, if any, to the founding family by blood, marriage, or adoption.

3.2. Defining and classifying family firms

Villalonga and Amit (2006) argue against counting founder-run firms (e.g., Facebook or Google) as *family firms*.

Japanese firms successful enough to list during their founder's lifetime are exceptional, and perhaps not representative. Also, Microsoft's Bill Gates, Berkshire Hathaway's Warren Buffett, and other founders plainly bar family successors. Villalonga and Amit thus urge a tighter definition: firms *actually controlled* by heirs. The broader class of founder- or heir-run firms we call *don* firms.[10]

The "founder" is the person who first established the firm. Thus, a firm established in the Edo era, restructured in the Meiji era, incorporated in the early 20th century, listed in the 1920s, and relisted in 1949, is *founded by* the Edo entrepreneur. By "run" we mean a founding family member (or foundation) is a top ten shareholder or CEO (*shacho*) or Chair (*daihyo torishimariyaku kaicho*). If only one family member so qualifies, this is the don. If several do, the don is the CEO or Chair. If both are family, the don is the older. If a founder is a top ten shareholder, but an heir is CEO or Chair, the heir is the don. This is a judgment call, but, in such firms, the heir is the presumed decision-maker.

Firms without *dons* are *non-don firms*. We define the indicator functions $\delta_{j,t}(k)$ thus:

$$\delta_{j,t}(don) \equiv \begin{cases} 1 \text{ if firm } j \text{ has a don in year } t \\ 0 \text{ otherwise} \end{cases} \quad (1)$$

$$\delta_{j,t}(non\text{-}don) \equiv \begin{cases} 0 \text{ if firm } j \text{ has } a \text{ don in year } t \\ 1 \text{ otherwise}. \end{cases} \quad (2)$$

We partition *non-don firms* into *former-don firms*, which once had a don, and *never-don* firms, with no don in our sample period. We partition *don firms* into *founder firms*, run by their founders, and *family firms,* run by their previous dons' heirs. This may undercount family firms, for it excludes firms of founders planning to pass control to an heir. However, it has the virtue of including only unambiguously identifiable family firms. Thus, we define

$$\delta_{j,t}(founder) \equiv \begin{cases} 1 \text{ if firm } j\text{'s don in year } t \text{ is its founder} \\ 0 \text{ otherwise} \end{cases}$$
$$(3)$$

$$\delta_{j,t}(family) \equiv \begin{cases} 1 \text{ if firm } j\text{'s don in year } t \text{ is an heir} \\ 0 \text{ otherwise}. \end{cases} \quad (4)$$

Finally, we partition *family firms* by the current don's relationship to the prior don. A firm whose don serves as CEO or Chair and is the prior don's blood son is a *blood heir firm*. One whose don serves as CEO or Chair and is the prior don's adopted son, adopted son-in-law, or son-in-law is a *non-blood heir firm*. A *family firm*, whose top ten shareholders include a blood heir, but whose CEO and Chair are both professionals, is a *sarariman firm*.[11] Our data include no daughters as heirs and no non-blood heirs adopted as children. All but two adoptees also marry a daughter.

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[9] From 1970 to 1990, only 31 firms delist. A further 95 delist from 1991 through 2000. See Fogel et al. (2008) on the longevity of Japanese firms.

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[10] *Don* (ドン, lit. *boss*; Lat. *dominus* via Port. *dom*) is an archaic title, now used primarily in formal business letters.

[11] The term *sarariman*, from the English *salary man*, connotes a manager who works long hours, but does not control his destiny.
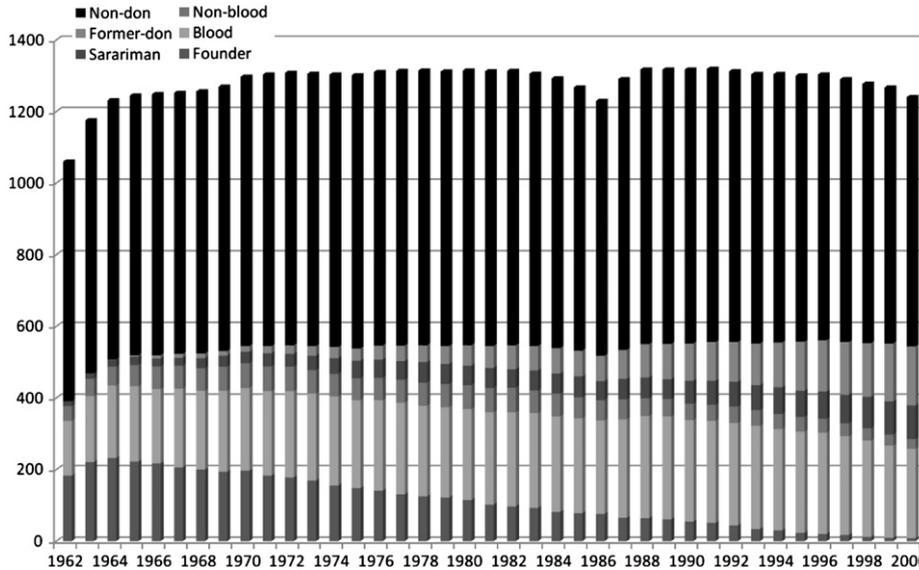
Fig. 2. Prevalence of founder and family controlled firms: 1962 to 2000.
The graph includes all firms trading on Japanese stock exchanges between 1949 and 1970, for which accounting and governance data are available from 1962 through 2000 (or delisting). *Don firms* count a founding family member among their top ten shareholders, directors empowered to sign for the firm, or as CEO. All other firms are *non-don firms*. *Founder-run firms* are family firms whose founder fills one or more of these criteria. All other family firms are *heir-run*. Among these, *blood heir firms* have a biological descendent of the founder and *non-blood heir firms* an adopted son or son-in-law filling one of these roles. A *sarariman firm's* founding families remain a top ten shareholder, but provide neither a CEO nor a signing director, instead entrusting these positions to professional managers. *Former don firms* are one-time family firms that became *non-don* firms (e.g., via sell-outs). The maximum and minimum cross-sections are 1,319 and 1,060 firms, respectively.

Designating firms run by sons-in-law *non-blood heir firms* is problematic if daughters marry for love. However, arranged marriages (*omiai*), in which dons select their daughters' husbands for business reasons, remain common among business families (Hamabata, 1991; Kerbo and McKinstry, 1995). Still, adopted and unadopted sons-in-law may be differently selected or incentivized. We return to this issue in the robustness section, where no material difference is found.

$$\delta_{j,t}(\text{blood heir})$$
$$\equiv \begin{cases} 1 \text{ if firm } j\text{'s don in year } t \text{ is a blood heir} \\ 0 \text{ otherwise} \end{cases} \qquad (5)$$

$$\delta_{j,t}(\text{non-blood heir})$$
$$\equiv \begin{cases} 1 \text{ if firm } j\text{'s don in year } t \text{ is an adopted son or son-in-law} \\ 0 \text{ otherwise} \end{cases}$$
$$\qquad (6)$$

$$\delta_{j,t}(\text{sarariman})$$
$$\equiv \begin{cases} 1 \text{ if firm } j \text{ is a don firm in year } t, \text{ but run by a professional CEO} \\ 0 \text{ otherwise.} \end{cases}$$
$$\qquad (7)$$

We have 62 *sarariman* successors (24 founder to sarariman, 38 heir to sarariman), who soon thereafter step aside for an heir. News reports clarify the temporary status of these interim CEOs: they mind the shop until the heir is ready. Thus, Takeda Pharmaceutical appointed a manager, Yoshimasa Umemoto, CEO while the heir, Kunio Takeda, age 46, prepared himself. Kunio took over after turning 50. Similarly brief sarariman CEO interludes

occurred at Pioneer, Toyota, and other family firms.[12] In all cases, these were temporary placeholders, not masters. We therefore exclude successions to sarariman who are replaced by family CEOs in our definition of sarariman-managed firms. We revisit this issue in the robustness section.

The partitions (5), (6), and (7) raise the issue of comparing non-blood heirs–adopted sons, sons-in-law, and both–to blood heirs versus sarariman CEOs. Might adopted sons be "hired help," like sarariman CEOs? We explore this by comparing tenures. Founders rule longest: a mean 30.2 and median of 30 years. Sarariman CEOs in family firms have the shortest tenures: averaging only 6.3 years, with half gone after five years. However, blood and non-blood heirs' tenures are essentially identical: averaging 18.7 and non 18.4 years, respectively. Half of blood heirs rule no less than 16 years, and half of non-blood heirs for 17 years. Thus, non-blood and blood heirs seem equally far more secure than sarariman CEOs.[13]

Fig. 2 graphs our sample by year. The 1962 cross-section has 1,060 firms: 37% don and 63% non-don firms. Of the don firms, 17% are founder-run and 20% are family firms. Non-blood heirs run 41 of the last–almost 20% of family firms and 4% of the full sample. By 2000, don firms are only 31% of the total, less than 1% are founder-run (founders retire or die), and family firms average roughly

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[12] The mean age of the ensuing heir is 40 in these cases, consistent with sarariman CEOs being placeholders.

[13] Coates and Kraakman (2007) report mean tenures of 13.4 and 5.5 years for S&P 500 CEOs with and without equity control blocks, respectively, in 1992–2004.

Table 2
Summary statistics for main variables.

  ROA is the ratio of operating income to replacement cost, the last defined as assets adjusted by marking real estate and equity cross-holdings to market. Q-ratio is market value over replacement cost, with market value defined as replacement cost *less* book value of equity *plus* market value of equity. Sales and employee growth statistics are based on year-to-year percentage growth. Industry-adjustment is based on subtracting the median value for the matching two-digit Japanese exchange industry code firms, excluding the sample firm. Total assets are in billions of yen; leverage is long-term debt over replacement cost; and firm age is years since incorporation. Total sample size is 49,638 firm-year observations, containing firms listed on Japanese stock exchanges between 1949 and 1970. The data cover fiscal years spanning 1962 trough 2000. We winsorize at 1% to attenuate the outlier effects.

	Mean	Median	Maximum	Minimum	Standard deviation
Performance					
ROA (%)	4.60	3.92	30.36	−18.97	4.50
Industry-adjusted ROA (%)	−0.65	−0.94	25.99	−22.83	3.89
Q	1.40	1.28	5.79	0.29	0.42
Industry-adjusted Q (%)	−6.13	−10.31	381.28	−197.74	36.81
Sales growth (%)	8.02	6.15	114.77	−70.28	16.02
Industry-adjusted sales growth (%)	−0.73	−1.26	116.82	−87.61	13.10
Employee growth (%)	−0.34	−0.48	58.98	−65.44	8.12
Industry-adjusted employee growth (%)	−0.61	−0.49	111.17	−90.16	9.03
Other firm characteristics					
Firm size (total assets, ¥B)	189.00	32.40	16100.00	0.17	668.00
Leverage (%)	11.86	9.54	67.02	0.00	10.60
Firm age (years)	44.9	44.0	110.0	4.0	18.3

30% from 1980 on, leaving 69% non-don firms. The fraction of don firms in Japan resembles that of family firms in the US Fortune 500 in Anderson and Reeb (2003), whose definition resembles our don firms. Only 7% of US Fortune 500 firms are heir-run (Villalonga and Amit, 2006), well below our 30% figure. Thus, our data reveal substantial family control in postwar Japan–a fact generally not acknowledged in discussions of Japanese corporate governance.[14]

3.3. Variables

We gauge shareholder value by Tobin's Q, market value over replacement cost. *Market value* is book debt plus share price times shares outstanding, thus marking control blocks to market, consistent with nil private benefits of control (Dyck and Zingales, 2004; Nenova, 2003). *Replacement cost* is book assets adjusted for equity and real estate. Almost 10% of a typical firm's assets are shares in other firms, and the fraction can be much higher in many cases. These are at historical cost, which we multiply by the return on the Nikkei Index over their average age from a last-in-first-out inventory model. Real estate, also carried at book, is adjusted analogously with the Japanese Real Estate Index.

Shareholder value is not necessarily the paramount performance measure in Japanese corporate governance (Aoki, 1990). We therefore examine several dimensions of firm performance. Current profitability is gauged by *return on assets* (ROA): operating income (earnings before interest, tax, and depreciation and amortization) over replacement cost. *Sales growth*, an oft-posited managerial objective, and *employment growth*, a concern of workers, are annual changes in the logs of sales and employment, respectively. Main summary statistics are in Table 2.

Year and two-digit (DBJ) industry code fixed effects control for sectoral and macro factors. Controls for firm *age* (years since first incorporated) and *size* (log replacement cost) reflect larger and older firms' sparser growth options and their founding families' having more chances to exit. Finally, *leverage*, long-term debt over replacement cost, controls banks, propensity to intervene in the governance of more indebted firms (Morck and Nakamura, 1999; Morck, Nakamura, and Shivdasani, 2000).[15] Much short-term debt is evergreened, and thus de facto long-term debt, so we also examine total debt over replacement cost.

4. Empirical tests

Table 3 shows a superiority across all the performance measures of founder and, to a lesser degree, non-blood heir firms vis-à-vis other categories. Founder firms are young, small, and narrowly held; while blood-heir firms are as old as, and larger than, other don firms, but almost as narrowly held as founder firms. Leverage varies little over don firms, but is higher in non-don firms.

4.1. Regression analysis of panel data

Because our sample approaches the population of listed firms, Table 3 is economically meaningful without statistical tests. However, we miss unlisted firms and wish to generalize our findings. Thus, Tables 4 and 5 assess statistical significance with pooled-(OLS) regressions of the form

$$\pi_{j,t} = \sum_n a_n x_{n,j,t} + \sum_k b_k \delta_{j,t}(k) + \sum_t c_t \delta_t + \sum_i d_i \delta_t + e_{j,t}, \quad (8)$$

with $\pi_{j,t}$ firm j's performance (one of ROA, Q, sales growth, or labor growth) in year t; the $x_{j,t}$ controls (firm age, size, and leverage); the $\delta_{j,t}(k)$ a proper subset of the dummies

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[14] Our data include Japanese firms listed prior to 1970; the US Fortune 500 contains only large firms.

[15] Corporate bonds were rare until near the end of the sample period (Morck, Nakamura, and Shivdasani, 2000).

Table 3

Firm performance and characteristics.

Don firms' founders' families are either a top ten equity blockholder, or serve as President or Chairman. Founder firms are don firms by dint of their founders' equity block or top management position. Family firms are don firms by dint of the equity block or management position of a member of their founding family other than the founder. In blood-heir firms, this is a biological descendent of the founder; in non-blood heir firms, this is an adopted son or son-in-law. Data and other variables are as defined in Table 2.

| | | | Don firms | | | |
| | | | Family firms | | | |
	Founder firms	All	Blood heirs	Non-blood heirs	Sarariman	Non-don firms
Performance						
ROA (%)	7.12	4.64	4.57	5.81	3.75	4.24
Industry-adjusted ROA (%)	0.68	−0.46	−0.49	0.21	−1.03	−0.91
Q	1.45	1.43	1.43	1.46	1.40	1.37
Industry-adjusted Q (%)	4.29	−3.22	−2.76	1.30	−10.25	−8.93
Sales growth (%)	14.73	7.62	7.60	9.64	5.55	7.28
Industry-adjusted sales growth (%)	1.82	−0.75	−0.69	−0.35	−1.47	−1.06
Employee growth (%)	2.42	−0.24	−0.14	0.32	−1.30	−0.75
Industry-adjusted employee growth (%)	1.05	−0.60	−0.48	−0.45	−1.34	−0.84
Other firm characteristics						
Firm size (total assets, ¥B)	58.2	120.4	113.7	164.9	106.1	237.3
Leverage (%)	10.40	9.47	9.44	9.46	9.61	13.11
Firm age	29.2	45.5	46.1	43.5	45.2	46.7
Family ownership, (%)	16.3	12.6	13.1	15.6	7.4	0.0
Firm-year observations	4,278	13,876	9,736	2,117	2,023	31,484

(1–7) with $k \in$ {founder, blood heir, non-blood heir, sarariman, non-don}; δ_t and δ year and industry fixed effects; and the $e_{j,t}$ residuals clustered by firm.

Table 4 presents representative regression (8), showing size positively, and leverage and age negatively, related to performance. Founder and family firms again best non-don firms in all performance metrics, controlling for industry, year, size, leverage, and firm age.

For brevity, Table 5 presents only b_k, coefficients using $\delta_{j,t}(k)$ pairs in (8) to contrast performance across control classes. The ranking in Table 3 is broadly preserved: Founder firms outperform all other classes across all performance metrics, except that non-blood heirs tie them in ROA and Q. Non-blood heirs, by lesser margins, outperform blood heirs in ROA, and non-don and sarariman firms in ROA and Q; but post statistical ties in other metrics. Blood-heir firms outdo non-don firms across the board, and best sarariman firms in all metrics save ROA. Non-don and sarariman firms trail in a statistical dead heat.

4.2. Causality

Table 5 leaves causation unresolved. Non-blood heirs might replace biological sons in the negative tail of the talent bell curve, motivating both professional potential adoptees and blood sons worried about the former. But the converse is also possible. Aging dons might pass healthy firms to beloved sons, who might more earnestly covet control of healthier firms (Bennedsen, Meisner Nielsen, Pérez-González, and Wolfenzon, 2007). Smith and Amoako-Adu (2005) and Perez-Gonzalez (2006) overcome this endogeneity problem with event studies that show stock price declines upon announcements of control passing to a son, rather than a professional, in Canadian

Table 4

Performance regressions, founder, family, and other firms.

Data and variables are defined in Tables 2 and 3. Regressions are on firm-level panel data from 1962 through 2000. Total observations equal 47,102 for Q-regressions and 49,638 firm-years for all others. p-Values are provided in parentheses below the coefficient estimates. Bold-face represents significance at better than 5%.

	ROA (%)	Q	Sales growth (%)	Labor growth (%)
Founder firms	**1.160**	**0.112**	**2.577**	**1.584**
	(0.00)	**(0.00)**	**(0.00)**	**(0.00)**
Family firms	**0.388**	**0.051**	**0.428**	**0.370**
	(0.00)	**(0.00)**	**(0.01)**	**(0.00)**
Firm size	**0.135**	0.007	**0.404**	**0.331**
	(0.00)	(0.11)	**(0.00)**	**(0.00)**
Leverage	**−0.091**	**−0.008**	**−0.052**	**−0.049**
	(0.00)	**(0.00)**	**(0.00)**	**(0.00)**
Firm age	**−0.016**	−0.000	**−0.037**	**−0.026**
	(0.00)	(0.84)	**(0.00)**	**(0.00)**
Adj. R-sq	0.32	0.35	0.30	0.15
Number of firm clusters	1,367	1,289	1,367	1,367
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes

and US family firms, respectively. Bennedsen, Meisner Nielsen, Pérez-González, and Wolfenzon (2007) identify inherited control causing poor performance in a Danish family firm.

The grooming of a successor likely begins years before the actual succession event, presumably at adoption if there is a formal adoption, and succession probabilities presumably resolve over time. This leaves equity value changes at successions biased towards zero. We therefore employ a less precise event study methodology than

Table 5

Performance and family control, regressions summary.

Variables are defined in Tables 2 and 3. Regressions are on firm-level panel data from 1962 through 2000, and include the control variables listed in Table 4. Total observations equal 47,102 for Q-regressions and 49,638 firm-years for all others. *p*-Values are provided in parentheses below the coefficient estimates. Bold-face represents significance at better than 5%.

Benchmark	Premium for	ROA (%)	Q	Sales growth (%)	Labor growth (%)
Non-don firms	Don firms	**0.557**	**0.065**	**0.899**	**0.636**
		(0.00)	**(0.00)**	**(0.00)**	**(0.00)**
Non-don firms	Founders	**1.163**	**0.112**	**2.575**	**1.581**
		(0.00)	**(0.00)**	**(0.00)**	**(0.00)**
	Blood heirs	**0.343**	**0.055**	**0.519**	**0.510**
		(0.01)	**(0.00)**	**(0.00)**	**(0.00)**
	Non-blood heirs	**0.904**	**0.081**	0.504	0.269
		(0.00)	**(0.01)**	(0.11)	(0.28)
	Sarariman	0.052	−0.000	−0.106	−0.219
		(0.82)	(1.00)	(0.76)	(0.38)
Blood heirs	Founders	**0.820**	**0.057**	**2.056**	**1.071**
		(0.00)	**(0.00)**	**(0.00)**	**(0.00)**
	Non-blood heirs	**0.560**	0.025	−0.015	−0.241
		(0.03)	(0.41)	(0.97)	(0.36)
	Sarariman	−0.291	**−0.055**	−0.625	**−0.729**
		(0.24)	**(0.03)**	(0.09)	**(0.01)**
Non-blood heirs	Founders	0.259	0.031	**2.071**	**1.312**
		(0.40)	(0.33)	**(0.00)**	**(0.00)**
	Sarariman	**−0.851**	**−0.081**	−0.610	−0.488
		(0.01)	**(0.03)**	(0.18)	(0.15)
Sarariman	Founders	**1.111**	**0.112**	**2.681**	**1.800**
		(0.00)	**(0.00)**	**(0.00)**	**(0.00)**

Smith and Amoako-Adu (2005) or Perez-Gonzalez (2006), which works against finding significant effects.

We define a succession event as a transfer of control from a don to a non-blood or blood heir, sarariman under family equity control, or outsider with the family cashing out. Of 915 such events, we drop 18 where control shifts to a co-founder, 124 involving an incoming or outgoing placeholder sarariman, 117 occurring within seven years of a prior succession, and 231 for incomplete family trees. This leaves 425 usable succession events.

The most common successors, 57% of the total, are blood heirs, reinforcing the importance of traditional family ties. But, nearly one in ten business families opt for non-blood heirs;[16] and nearly one in five turn to a sarariman and become equity blockholders. The family cashes out in less than 15% of events, so family control persists, in one form or another, 85% of the time.

We explore performance changes around successions with cross-section regressions

$$\Delta \pi_j = \sum_n a_n x_{n,j} + \sum_k b_k \delta_{j,t}(k) + \sum_t c_t \delta_{t(t)} + \sum_i d_i \delta_{i(j)} + e_j,$$

(9)

where the x_j are controls, the δ_t and δ_i succession year and industry fixed effects; and the e_j are residuals. Some firms have more than one succession event, so standard errors are clustered by firm.

The dependent variable, $\Delta \pi_j$, is the firm's two-year mean performance (one of ROA, Q, sales growth, or labor growth) following the event year minus its two-year mean prior to the event year. The event year is excluded because we cannot date the successions precisely. We use two-year means because Japanese boards typically vote on renewing CEOs' contracts biennially.

We index succession events by j and successor types by k, now defining the $\delta_j(k)$ thus:

$\delta_j(blood\ heir)$

$$\equiv \begin{cases} 1 \text{ if firm } j\text{'s new don is a blood heir of the old don} \\ 0 \text{ otherwise} \end{cases}$$

(10)

$\delta_j(non\text{-}blood\ heir)$

$$\equiv \begin{cases} 1 \text{ if firm } j\text{'s new don is the old don's adopted son or son-in-law} \\ 0 \text{ otherwise} \end{cases}$$

(11)

$\delta_j(sarariman)$

$$\equiv \begin{cases} 1 \text{ if firm } j\text{'s controlling family hires a professional CEO} \\ 0 \text{ otherwise} \end{cases}$$

(12)

$\delta_j(cash\ out)$

$$\equiv \begin{cases} 1 \text{ if firm } j\text{'s controlling family liquidates its control block} \\ 0 \text{ otherwise.} \end{cases}$$

(13)

The x_j include the following: *Lagged performance* allows for persistent or mean-reverting performance changes. *Old don IQ* is included because, ceteris paribus, a more talented outgoing don is harder to beat. We gauge

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[16] Of 42 non-blood heir successions, 22 involve adopted heirs where the family has a blood son, with the remaining 20 involving cases with adopted heirs in families that do not have blood heirs. The performance for the two groups is statistically indistinguishable.

Table 6
Performance changes around succession events.

   Events are all 425 old don departures from 1962 through in all Japanese firms initially listed on a major stock exchange between 1949 and 1970 that meet data availability constraints. Events are subdivided into 242 successions to a blood heir, 42 to a non-blood heir, 81 to a professional (sarariman) with the family remaining a top 10 blockholder, and 60 in which the family sells its shares and exits. Cross-section event-level regressions control for performance reversion with lagged performance two years prior to the succession, for old dons' ability with a dummy for a degree from a merit-admissions elite university, for old dons being over age 65 (the normal retirement age), and succession year and industry fixed effects. Dependent variables are changes in performance, defined as mean performance (ROA, Q ratio, sales growth, and labor growth) in the two years minus in the two years before the succession. Some firms have more than one succession event, so standard errors are clustered by firm. P-Values are provided in parentheses below the coefficient estimates. Bold-face represents significance at better than 5%.

Benchmark	Premium for	ΔROA (%)	ΔQ	ΔSales growth (%)	ΔLabor growth (%)
Non-blood heir	Blood heir	**−2.23** **(0.00)**	0.0089 (0.82)	**−5.25** **(0.03)**	−0.36 (0.78)
	Sarariman	**−3.01** **(0.00)**	−0.0643 (0.18)	−2.52 (0.37)	−0.33 (0.84)
	Cash out	**−1.80** **(0.00)**	0.0239 (0.67)	−3.89 (0.14)	0.29 (0.85)
Blood heir	Sarariman	**−0.78** **(0.05)**	**−0.0732** **(0.05)**	2.73 (0.14)	0.04 (0.97)
	Cash out	0.43 (0.34)	0.0150 (0.75)	1.36 (0.42)	0.66 (0.52)
Sarariman	Cash out	**1.20** **(0.02)**	0.0881 (0.08)	−1.36 (0.54)	0.62 (0.62)

IQ with a dummy for a degree from an imperial university (Tokyo, Kyoto, Tohoku, Osaka, Kyushu, Hokkaido, or Nagoya) or Hitotsubashi University, which are widely thought to admit solely on academic merit (Takeuchi, 1997; Kerbo and McKinstry, 1995, p. 140), making their degrees reliable proxies for high intelligence. Alternate admissions paths to other elite universities, including Keio and Waseda, render their degrees less reliable IQ proxies, especially for members of wealthy families.[17] *Old don age*, a dummy for age > 65, controls for old dons over normal retirement age (Morck, Shleifer, and Vishny, 1988b).[18] Succession year fixed effects remove macroeconomic factors; industry fixed effects remove industry performance trends.

Table 6 suppresses coefficients for the controls and fixed effects for brevity. ROA rises most after non-blood heirs take over, and drops most after families hire sarariman CEOs but remain as blockholders. Blood heirs and

cashing out are in between, and statistically indistinguishable. Cashing out raises ROA, but slows sales growth, relative to sarariman control and continued family blockholdings. Qs generally do not change significantly, presumably because share prices previously capitalized expected succession plans. The two exceptions–share valuations fall significantly after a sarariman CEO takes charge of a family firm, rather than a blood heir taking charge or the family cashing out–suggest some uncertainty until the succession is announced.

4.3. Economic significance

Fig. 3 uses ROA changes around successions, the leftmost column of Table 6, to encapsulate our basic findings. ROA rises most after successions to non-blood heirs-3% more than in successions where the family retains its equity stake, but entrusts management to a professional sarariman CEO-a difference of about 65% of the 4.60% overall mean ROA. Successions to blood heirs raise ROA by about 0.78% relative to that benchmark, a less economically significant 17% of mean ROA. And cases where the family sells its equity block and departs from the scene entirely effect an ROA increase of 1.20% relative to the same benchmark, some 26% of mean ROA.

The over 5% sales growth acceleration in Table 6 for a non-blood relative to blood heir is likewise more than 60% of that variable's mean. The 2.73% higher sales growth after sarariman relative to blood-heir successions is also economically significant. Higher sales growth, but lower ROA, might indicate unprofitable expansion in sarariman-run family firms. This reversal might be taken as evidence that blood heirs are not clearly better than sarariman CEOs; but the 7% Q drop when a sarariman CEO, rather than a blood heir, takes over a family firm belies this.

4.4. Robustness

Our results are highly robust.[19] Below, we say a robustness check yields *qualitatively similar* results if signs, significance, and rough coefficient magnitudes are identical to those in the matching table.

Our panel and event tests winsorize at 1%. Raw data yield qualitatively similar results. Our standard errors adjust for heteroskedasticity and firm clusters. Not doing so magnifies our I-ratios, and renders virtually all coefficients in all the tables statistically significant. Our regressions control for firm size and age; dropping these yields qualitatively similar results.

Rerunning all tests with sons-in-law and adopted sons as separate classes reveals adopted sons besting blood heirs in ROA by 0.62%, a greater margin than non-blood heirs' in the tables, but significance ebbs ($p = 0.11$). Adopted sons best unadopted sons-in-laws' firms by 0.139% in ROA, 0.040 in Q, and 0.025% in sales growth, but lag them by 0.376% in labor growth; however, none of these differences are significant. Adopted sons and

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[17] For example, Waseda Jr-Sr High's Web site (www.waseda-h.ed.jp/Overview/index_e.html) explains: "[the] school is affiliated with Waseda University and about 50% of the graduates of high school are recommended to Waseda University. Others take entrance examinations and are admitted to the universities of their choice, such as the University of Tokyo, Kyoto University, Keio University, Tokyo Medical University and so on."

[18] With a mean age of 52, incoming family CEOs are younger than their non-family counterparts (mean age 61). The typical family firm is also younger: 46 years old at the succession vs. 50 for non-family firms. Blood and non-blood heirs have statistically indistinguishable mean ages at their successions; as do their firms.

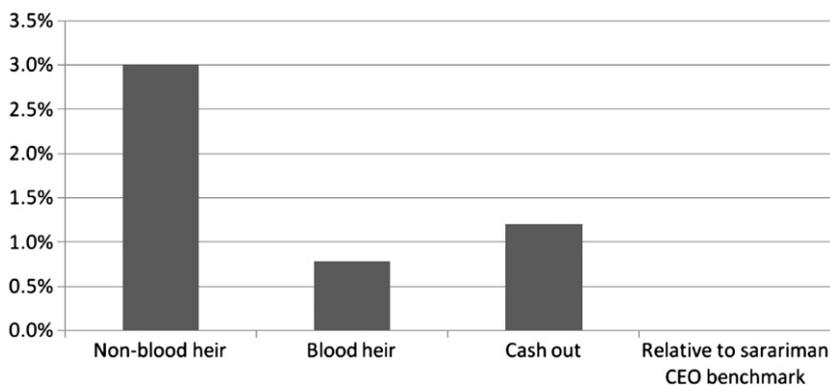[19] The following robustness checks are not shown in tables, but are all available from the authors.

Fig. 3. Change in profitability around successions to non-blood heirs, blood heirs, and families cashing out relative to successions to sarariman CEOs with the family retaining a dominant equity block. Profitability is the ratio of operating income to replacement cost, as in Table 2, and changes are means in the two years after the succession event minus means in the two years prior, controlling for lagged performance two years prior to the succession event, the old don's ability, the old don age being greater than 65, and succession year and industry fixed effects. Data are winsorized at 1% to attenuate the outlier effects. Events are 425 old don departures from 1962 through 2000 for which data are complete.

unadopted sons-in-law have similar median tenures as CEO—19 and 17 years, respectively. Overall, the data support pooling the two classes.

We exclude successions to placeholder sarariman CEOs, who are shortly succeeded by heirs. Treating these as sarariman yields qualitatively similar results, except the p-level of the Q difference between blood heirs and sarariman drops to 0.14, and that between non-blood heirs and sarariman weakens to 0.09. Alternatively, defining interim sarariman as a separate category yields qualitatively similar results for the old categories. In the panel tests, interim sarariman firms best non-don and sarariman firms in Q and labor growth, and are statistically indistinguishable from blood- and non-blood heir firms. Treating interim sarariman CEOs with longer than median (25th percentile) tenure as bona fide sarariman yields qualitatively similar results, save that p-value for the Q difference between blood heirs and sarariman CEOs drops to 0.12 (0.14).

Our data include four female dons. All are prior dons' spouses, and their mean tenure is only six years. Two are explicitly described as placeholders for husbands in politics. Female dons might thus resemble placeholder CEOs. Dropping these yields qualitatively similar results.

ROA is operating income over replacement cost; dividing instead by book assets yields qualitatively similar results. Sales growth is log current nominal sales less its one-year lag. Inflation was low throughout our sample period, but deflating sales by the (GDP) deflator, yields qualitatively similar results. Using three- or five- year lags to construct sales and labor growth rates also yields qualitatively similar results. Leverage is long-term debt over replacement cost. Total debt in the numerator yields qualitatively similar results; as does book assets in the denominator.

Narrowing family firms to those whose founding family is the largest blockholder likewise yields qualitatively similar results, as does redefining family firms as those whose founding family owns at least a 10% equity block. Different sorts of founders might be differently predisposed towards family successions. We define *Bill Gates founders* as those not succeeded by heirs (Miller, Le Breton-Miller, and Lester, 2007, make a similar distinction). We find no significant difference between these and other founders. The firms of both best blood-heir and non-don firms; but neither significantly out-performs non-blood heir firms, as in the tables.

Non-blood heir firms' higher mean performance does not appear to reflect more risk-taking, or a disregard of workers. Expost (year +1 to +5) variances reveal non-blood heir firm Q-ratios more volatile than those of non-don firms ($p < 0.01$); but ROA and sales growth volatilities higher under sarariman than non-blood heirs ($p < 0.01$ for both), and founder firms' sales growth ($p < 0.03$), labor growth ($p < 0.01$), and Q ($p < 0.01$) volatilities exceeding those of non-blood heir firms. We also compare changes (years −5 to −1 versus +1 to +5) in performance variance around succession events. ROA variance rises more around non-blood than blood-heir successions ($p < 0.05$), but all other pair-wise variance change comparisons are insignificant.

Inferring causality from event studies is a standard technique. However, Bennedsen, Meisner Nielsen, Pérez-González, and Wolfenzon, (2007) find family successions more likely if Danish business families anticipate improving firm performance, and argue that this can induce a positive bias in observed performance changes around family successions. We therefore employ a two-stage estimation akin to theirs: The first stage is a multinomial logit predicting succession type with three instruments: indicator variables for the existence of a male blood heir, a blood relative on the board at the firm's (IPO), and the family's leadership by a non-blood heir at any prior time. The first stage also includes year and industry fixed effects, a dummy for the old don being over age 65, the normal retirement age in Japan, and dummies for the current patriarch and biological son, if any, having graduated from an elite merit-based admissions university (our proxy for talent). The instruments and controls are not plausibly under the departing don's control as the

succession approaches, and the instruments plausibly affect the change in firm performance around successions only by affecting the successions. The instruments' joint first-stage significance far surpasses standard weak instruments thresholds. The second stage is identical to (9), but with predicted succession probabilities from the (first)stage substituted for succession-type dummies. This robustness check yields qualitatively similar results with only a few exceptions.[20] This exercise, like Table 6, yields mixed significance across performance metrics, but the overall pattern still leaves non-blood heirs boosting performance more than blood heirs, who nonetheless best professional CEOs by some metrics.

5. Conclusions

A 40-year postwar panel of listed companies in Japan shows inherited control improving firm performance, a result at odds with other developed economies, where dynastic control erodes firm performance (e.g., Morck, Stangeland, and Yeung, 2000; Smith and Amoako-Adu, 2005; Perez-Gonzalez, 2006; Bennedsen, Meisner Nielsen, Pérez-González, and Wolfenzon, 2007). A clear performance premium for control by non-blood heirs suggests this Japanese exceptionalism reflects business families using adult adoptions, arranged marriages, or both to acquire talent. Selecting non-blood heirs for talent lets family firms transcend the trade-off in Burkart, Panunzi, and Shleifer (2003) between added wealth from entrusting the firm to professional managers screened for talent from a broad pool of applicants, and the family's amenity value of continued control. Consistent with selection for talent, non-blood heirs are twice as likely as blood heirs to have degrees from elite merit-based admissions universities. Moreover, non-blood heirs' firms consistently outperform all others except those of founders, which are far smaller and younger, and subject to a selection bias (firms that list during their founders' lifetimes are necessarily top performers).

The literature shows non-blood heirs to be fully "family": they can head their new extended families and their children, biological or adopted, are their heirs apparent. Still, a non-blood heir can distress sidelined biological sons and their mothers, as well as daughters assigned to marry the new heirs. This distress presumably outweighs the advantages of transcending the Burkart, Panunzi, and Shleifer (2003) trade-off for the roughly 75% of family businesses that pass control to blood heirs.[21]

After non-blood heirs in the pecking order come blood-heirs, whose firms broadly out-perform sarariman (professionally run) firms. Several reconciliations with the Burkart, Panunzi, and Shleifer (2003) trade-off are possible. First, non-blood heirs might displace the least talented blood heirs, attenuating the left tail of the observed blood heir talent distribution.[22] Second, the threat of displacement by a non-blood heir might spur effort and human capital accumulation by blood heirs. In corporate governance, threats can matter more than canings. About 10% of family successions go to non-blood heirs, just as the 10% of 1980s takeovers that were overtly hostile seemingly evoked CEO effort in other firms (Morck, Shleifer, and Vishny, 1988a).[23] Third, the mere existence of the "non-blood heir" job might induce more talented managers to work for family firms, and to work harder, than were the top job limited to blood heirs.[24] Ascertaining the relative importance of these possibilities lies beyond the scope of this study, but further research is welcomed.

In sum, the persistence and prosperity of old-moneyed family firms in Japan need not disturb the premise in business history that professionalization raises efficiency (Landes, 1949; Chandler, 1977). While Japan is much less unique than often portrayed (Beason and Patterson, 2006), adult adoptions seem genuinely exceptional; and might de facto professionalize Japanese family firms. However, arranged marriages and son-in-law successors, not uniquely Japanese institutions, may work equally well, and might enhance family firm governance elsewhere (Mehrotra, Morck, Shim, and Wiwattanakantang, 2011), perhaps generalizing the Japanese case and, partially at least, explaining the tenacity and dominance of family firms in many economies (La Porta, Lopez-de-Silanes, and Shleifer, 1999; Khanna and Palepu, 2000; Khanna and Rivkin, 2001; Morck, Wolfenzon, and Yeung, 2005; Khanna and Yafeh, 2007; and others).

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[20] Successions to non-blood heirs retain their ROA supremacy against all other categories, save cashing out, and now best sarariman successions in sales and labor growth. Blood-heir successions continue to best sarariman CEOs in ROA and Q, but now do so significantly only in labor growth.

[21] Consistent with wealth preservation favoring the use of non-blood heirs, mean and median family equity stakes are significantly higher in non-blood successions than in successions to blood heirs. Conceivably, greater wealth at stake more readily trumps family distress in the former cases.

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[22] Consistent with a left tail truncation, blood heir firms' ROA distribution is more positively skewed ($\sigma^3=0.883$) than those of all other firms ($\sigma^3=0.808$).

[23] Partitioning blood heirs by whether or not their families have a prior tradition of non-blood heirs reveals an ROA distribution with a higher mean (p-value$=0.08$) and skewness in the former ($\sigma^3=1.27$ versus 0.824), consistent with a greater salience of one or more of the three possibilities discussed in the above paragraph.

[24] This complicates the common view of Japanese top executives as modestly paid (Kato and Kubo, 2006). Non-blood heirs' personal equity stakes average 3.6% in the three years after the succession (up from 3.4% the in the three years prior). But the heir heads the family, its total stake, averaging ¥8.74B (¥2000 yen) or US$87M, comes under his sway. Thus, a star manager promoted to non-blood heir earns control of a fortune easily sufficient to evoke tournament competition (Lazear and Rosen, 1981; Demsetz, 1996; Frank and Cook, 1996).

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