Not a Coincidence: Sons-in-Law as Successors in Successful Japanese Family Firms

Georg D. Blind and Stefania Lottanti von Mandach[1]

Abstract

Mehrotra, Morck, Shim and Wiwattanakantang (2013) observe that family firms listed before 1971 in Japan and run by non-blood heirs outperform those run by blood heirs between 1962 and 2000. They claim that this is due to superior talent, evidenced in succession event studies. Because the authors do not share their data, we attempt replication and find qualitatively similar results. These depend critically on a dummy for predecessor talent, which MMSW base on successful entry into an elite university more than half a century earlier. When excluding this dummy, no significant differential remains. Our results are robust to changes in definition of succession, to adding businesses listed after 1970, and to including more recent data (2001–2015). An alternative explanation is that non-blood heirs are selected into and inherit superiorly performing businesses.
[132 words]

Keywords: Japan; family firms; outperformance; adoptions; arranged marriages.
JEL codes: G3, J12, N25, Z130

1. Introduction

"Japan represents a special case" is a statement frequently found in the economics literature (Kaldor 1975; De Long 1988; Calder 1993; Cavelaars 2005). While Japan may effectively be different in some respects (Girardin and Moussa 2011; Blind 2012), there is a strong tendency to attribute deviations from a "Western mean" to that country's cultural uniqueness (Dore 1987; Hill 1995; Katzner 2008). The authors of "Adoptive Expectations: Rising Sons in Japanese Family Firms" (Mehrotra, Morck, Shim and Wiwattanakantang 2013; hereafter MMSW) also refer to a "unique setting" of institutions (p. 841) in interpreting their observation of family firms in Japan listed before 1971 outperforming non-family businesses during 1962–2000. They argue that this is due to family firms led by non-blood heirs outperforming those led by heirs by blood (usually sons). MMSW attribute this outperformance to three mechanisms related to the Japanese practice of adult adoptions, potentially combined with arranged marriages:

1. Adopted non-blood heirs displace the least talented heirs by blood.

---

2. The availability of a "non-blood heir job", i.e., the prospect of becoming adopted, may attract more talented managers, and motivates professional managers to excel.
3. The threat of being replaced by adoptees motivates heirs by blood.

To evidence the superior management talent of non-blood heirs MMSW analyze succession events. They find that succession by non-blood heirs leads to stronger performance increases relative to heirs by blood.

Our paper reexamines the question whether non-blood heirs cause superior firm performance. This is because the CEO effect (the proportion of variance in performance that is attributable to CEOs) is smaller in Japan than in the U.S. (Crossland and Hambrick 2007; 2011). Accordingly, we attempt to replicate the MMSW succession events, eventually finding qualitatively similar results. However, the significance of the results in our replication attempt critically depends on a dummy for elite education of predecessors (a binary measure of cognitive capacity at age 18), which MMWS use to control for "how difficult to beat" predecessors are. Dropping this measure, no significant performance differential remains. This finding is robust to changes in definition of succession, and to adding businesses listed after 1970 and more recent data (2001–2015).

In spite of non-blood successors not performing better than heirs by blood in succession events, the three mechanisms proposed by MMSW may still explain superior performance of Japanese family firms by displacing the least talented heirs by blood, threatening the remaining heirs by blood with replacement, and motivating professional managers with the prize of becoming adopted. However, the MMSW research is overwhelmingly not about adoptions, but about in-laws as successors in family firms. This puts considerable constraint on all three performance-enhancing mechanisms. When taxing the reach of these within the setting of (potentially arranged) marriages, we find that all three of them may only be effective in less than 10% of family firms – a reach we consider too small to explain the observed superior performance by family firms.

As alternative explanation, we propose that successful family firms might be more likely to have non-blood heirs. When looking at the time profile of firm performance, we find that firms later to be led by non-blood heirs are already strongly outperforming when these future successors enter the firms. As superior performance continues until succession comes close, we argue that superior performance is rather inherited than caused by non-blood heirs.

MMSW report an average outperformance of family firms in general, and of businesses run by non-blood heirs in particular. However, this may have been a temporary phenomenon only within their 38 year-long observation period. We present evidence from the literature contradicting the outperformance of family firms in general, and of those led by non-blood heirs in particular for the last decade of the MMSW observation period, and for more recent data. Building on own and extant research, we argue that the former is due to improved corporate governance in non-family businesses, and that the latter originates by

way of the pronounced decline in arranged marriages, which has led to a relatively stronger increase in average tenure of incumbent non-blood versus blood patriarchs. As CEO performance reportedly decreases with tenure (Hambrick and Fukutomi 1991; Miller 1991; Miller and Shamsie 2001; Henderson, Miller and Hambrick 2006; Wulf, Roleder, Stubner and Miksche 2011), this differential development can explain the erosion of the non-blood heir premium.

We proceed as follows. We start by replicating the MMSW succession events (Section 2). After assessing the reach of the performance-enhancing mechanisms put forward by MMSW (Section 3), we move on to develop and test an alternative hypothesis for explaining why family firms led by non-blood heirs outperform family firms led by blood heirs (Section 4). We then present and put into perspective some evidence that partially contradicts the MMSW observations of superiorly performing family businesses (Section 5). We summarize and conclude with suggestions for further research (Section 6).

2. Succession events revisited

For a sample of Japanese businesses listed before 1971 MMSW observe that family firms outperform non-family businesses between 1962 and 2000 (MMSW Obs. 1). They hold that the superior performance of family businesses led by non-blood heirs (MMSW Obs. 2) explains their Obs. 1. To test for superior management talent of non-blood heirs MMSW analyze a sample of succession events where they find superior performance differentials for non-blood heirs relative to blood heirs.

To replicate the MMSW event studies, we recreate the MMSW sample approaching sample size and the summary statistics given in their Table 2 (compare our App. Table 2.1). We also adopt their definition of a succession event taking place when an heir first happens to "run" a business, where "run" refers to "a founding family member (or foundation) is a top-ten shareholder or CEO or Chair. 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" (p. 845). According to this particular definition and excluding cases where the previous "runner" was an in-law, we obtain 50 cases of non-blood heir successions (19% more than the 42 cases in MMSW) by adding to the MMSW sources the 2012 edition of *Nihon kaishashi soran* and the digital archives of the Nikkei newspaper (*Nikkei terekon 21*). To obtain a sample of succession events to blood heirs we use computer-linguistic methods on DBJ ownership data, and cross-validate succession timing via the digital version of Toyo Keizai's *Shikiho*. This yields 91 "blood events" for the MMSW sample.

In their estimations, MMSW also include dummies for "highly talented" and "old" previous leaders. While they expect the former to be "harder to beat" (p. 850), MMSW provide no rationale for old age, but given that age may be a covariate of tenure, these are presumably easier to beat. MMSW measure

"talent" through a dummy marking graduates from elite universities with merit-based admission. Unfortunately, we were not able to obtain any of these data. To simulate the elite dummy, we use the ratio of 19.4% elite education noted in Shim (2009: 27) and the two-fold likelihood of non-blood heirs to have graduated from such institutions given in MMSW (2013: 852), and attribute these to the cases with the lowest performance improvements in terms of ROA. We further approximate the "old age" predecessor dummy by marking cases where a departing CEO stays on as Chair after appointing a successor CEO. Table 1, Replication 1, Setup (A) presents estimation output for the premium for blood heir successions relative to non-blood successions as in MMSW Table 6 (p.850) with significant estimates for three out of four performance measures.

However, several concerns apply to the MMSW choice of the talent dummy. First, it relies on an incumbent leader's historical performance in university entrance exams, many decades before passing on the reins to a successor, and it may thus only weakly reflect their management performance in general, and particular at time of succession, which – on average – takes place when their successors are already 61 years old (FN 18 on p. 850).[2] Second, there is reason to believe that educational achievement of departing leaders moderates the likelihood of choosing a non-blood successor (Stafsudd 2006; Hutzschenreuter, Kleindienst and Greger 2015). An elite-educated departing leader may feel more strongly that he wants his successor to have a similar standing than do departing leaders without an elite education. As there is a choice of elite education for non-blood successors (but not in sons), estimates for non-blood successors are more likely to "benefit" from the predecessor's talent dummy, which implies a risk of bias. Third, the dummy only indirectly and partially corrects for how "difficult to beat" a departing leader is. For verifying whether cognitive capacities at age 18 are significantly related to later management performance, it would be necessary to conduct event studies contrasting elite to non-elite education individuals. Actually, a predecessor study of MMSW's 2013 article does exactly that, but cannot confirm performance of successors to depend on the talent dummy for ROA, Q, and sales growth (Shim 2009: Tab. 6, 7).[3] When removing the dummy for elite predecessors there only remains a significant differential for employment growth. Table 1, Replication 1, Setup (B) provides the output.

---

[2] As noted also in MMSW, about 95% of non-blood heirs are sons-in-law (p.845). So, if their fathers-in-law were at least 10 years older, this would mean that the talent dummy used in MMSW relies on a measurement taken more than half a century earlier. Admittedly, college admission plays a substantial role in obtaining employment with prestigious employers in Japan. However, when it comes to later career advancement, Ishida, Spilerman and Su (1997) find that "the impacts of college quality […] on promotion chances are only occasionally significant at the different levels of the Japanese organization" (p. 880); and no positive evidence is reported for the relevance of college admission for top management performance (Bhagat, Bolton, and Subramanian 2010). Accordingly, the higher prevalence of elite-educated leadership in successful Japanese businesses rather evidences the attractiveness of successful businesses to graduates from elite institutions, than any causal relationship between top management education and firm performance.

[3] Contrasting otherwise homogenous subgroups of successors (sons and professional CEOs) using the same "elite" definition in a largely identical sample, Shim's 2009 research only finds a significant difference in employment growth. We hold that this variable is the least indicative of performance, but rather evidences what one may describe as overconfidence.

Eventually, the MMSW estimation method for performance deltas around succession events reduces the initially large sample to the $j = 425$ succession events (compare their Equation 9). As their estimation includes not only several dummies for type of successor and characteristics of predecessor, but also up to 34 year and eighteen industry dummies, we are concerned about estimation precision. In particular, industry-year dummies are estimated exclusively from firms in the midst of a succession event. This issue applies not only to the MMSW sample, but even more so to our Replication 1 with $j = 141$. To address these two issues (precision and risk of biased industry-year dummies) also compute performance changes for all firm-year observations available, marking successions to blood and non-blood heirs using corresponding dummies. This procedure yields high-precision unbiased controls (industry-year). As before, however, the differential between blood and non-blood heirs becomes insignificant when excluding the talent dummy (see Table 1, Replication 2, Setup B).

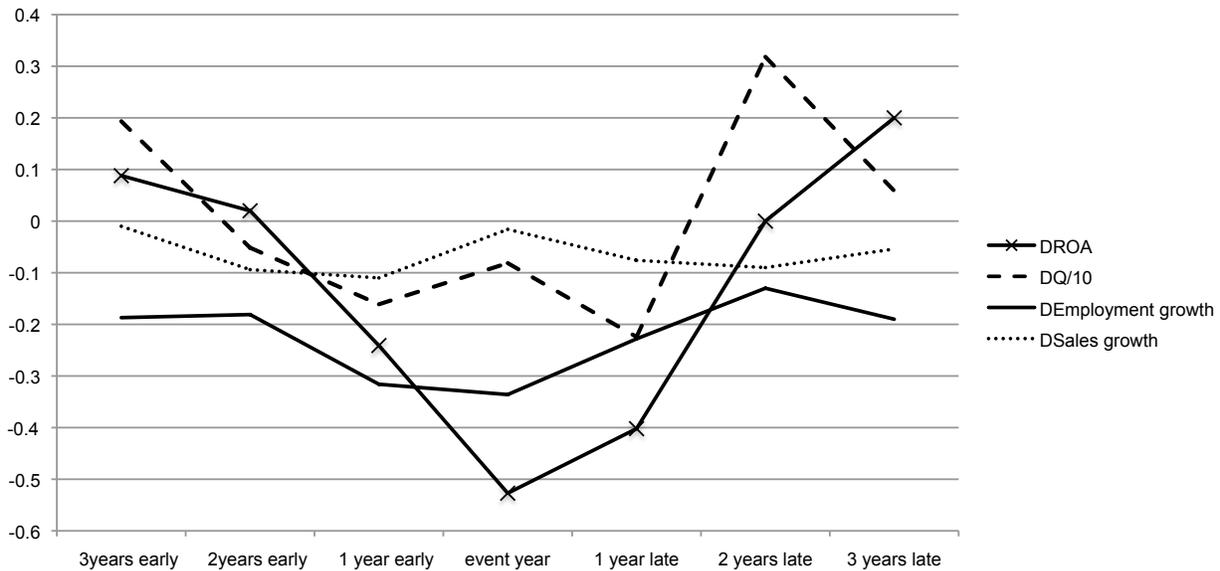## Table 1: Performance changes at MMSW succession events (pp)

Premium in performance change (difference of two years after and before event) **for successors by blood** relative to in-laws; pp (p-values) *Listed before 1971, 1962–2000, as in MMSW*	ΔROA	ΔQ	Δ growth of log(Employment)	Δgrowth of log((Sales)
MMSW 2013 (Table 6, Line 1, p. 850); $j = 425$ events, $n = j = 425$	**-2.23** **(0.00)**	0.0089 (0.82)	-0.36 (0.78)	**-5.25** **(0.03)**
Replication 1 with $j = 141$ events, $n = j = 141$				
(A) With dummies for age and ability of predecessor	**-1.053** **(0.01)**	-1.784 (0.75)	**-0.515** **(0.01)**	-0.186 (0.08)
(B) Excluding dummy for ability of predecessor	-0.061 (0.91)	1.980 (0.71)	**-0.453** **(0.02)**	-0.126 (0.21)
Replication 2 with $j = 141$ events , $n = 51,535$ ($n = 33,895$ for ΔQ**)**				
(A) With dummies for age and ability of predecessor	**-1.214** **(0.03)**	-1.382 (0.42)	-0.375 (0.07)	-0.031 (0.41)
(B) Excluding dummy for ability of predecessor	-0.527 (0.19)	-0.814 (0.45)	-0.336 (0.07)	-0.016 (0.45)

Description: Dependent variables defined as in MMSW Table 6. Setups (A) give results of our replication attempts, Setups (B) exclude the dummy for elite predecessors. Replication 1 with regression n equivalent to sum of events $j = 425$ for MMSW, and $j = 141$ in our replication (50 successions to non-blood heirs and 91 succession to blood heirs). Replication 2 uses all available observations according to MMSW definitions ($n = 51,535$ for ROA, employment and sales growth, and $n = 33,895$ for Q). Bold font indicates significance at better than 5%.

Interpretation: Significance of the performance differential in ROA between non-blood heirs and successors by blood vanishes when dropping the dummy for predecessor talent.

Our replicated estimate of the differential for ROA is only about half the size of the figure given in MMSW Table 6. This may be either due to our selection of blood and of in-law events, to our approximation of the talent dummy, or both. In spite of this, it seems that the inclusion of the "talented predecessor" dummy is the foremost driver for the MMSW finding of superior ROA performance of non-blood heirs in succession events (Setups A in Table 1). The only other variable for which we find some significance is employment growth. We suggest that this may relate to attempts by in-law successors to create trust within the organization by increasing hiring. We cannot reproduce MMSW's estimate for growth of the log of sales. Replacing with the difference in growth of sales yields parameter estimates between 1.3pp (Replication 2, Setup A) and 1.0 pp (ibid, Setup B); yet, both differentials are not significant either. Incidentally, using the sum instead of the difference between the latter estimates for blood and non-blood heirs pro¬duces figures of a comparable order of magnitude: 5.9pp (Replication 2, Setup A) and 4.9pp (ibid, Setup B), respectively. We are inclined to believe that our results of an insignificant difference are not quite unlikely. This is because MMSW find no premium for businesses managed by non-blood heirs in terms of sales growth relative to those managed by blood heirs (compare MMSW Table 5, line 7). Putting MMSW event study results for sales growth into that perspective, we find it difficult to imagine that non-blood heir businesses have 5pp more sales growth than blood-heir businesses during the two years following succession, but cannot create any further differential afterwards. We also include variations of the succession year simulating succession one to three years before the formal event to accommodate for the possibility of the true shift in power happening earlier or later, but do not find any corresponding evidence. Fig. 1 plots the estimated differentials for Setup (B) in Replication 2.

Figure 1: Placebo tests on performance changes around succession events (pp)

Description: Premium in performance change (difference of two years after and before event) for successors by blood relative to in-laws as if event year is moved +/- 3 years. Data from Replication 2, Setup (B). Results for Q scaled down by factor 0.1 for better legibility.

Interpretation: Although none of the estimates is significant, the largest estimated differential is recorded for the actual event year for ΔROA and Δlog(employment growth).

3. Assessing the MMSW incentive mechanisms

While the results of our replication attempt suggest that non-blood heirs are not causing performance changes any different from heirs by blood, this does not imply that the MMSW mechanisms may not be effective in boosting the performance of Japanese family firms. On the contrary, not finding a performance differential between blood and non-blood heirs in succession events might be exactly due to MMSW Mech. 1 being at work. This is because the "displacement of least talented blood heirs" may cause an increase in the average talent of blood heirs up to a level statistically indistinguishable from non-blood heirs. In a similar vein, our results do not rule out the possibility that prospects of a "non-blood heir job" might motivate professional managers to excel (MMSW Mech. 2), and that the threat of being replaced motivates heirs by blood (MMSW Mech. 3). Accordingly, there is a need to assess the effectiveness of these mechanisms individually.

Starting from their title, MMSW's argument strongly builds on the phenomenon of adult adoptions. However, we learn that 40 out of 42 "non-blood heirs" in their sample "also marry a daughter" (p. 846). This means that MMSW's research is overwhelmingly about sons-in-law as successors in family firms, a setting not specific to Japan, with marriages potentially arranged and some sons-in-law being

adopted.[4] As the market for experienced management recruits has been very tight in Japan (Cheng and Kalleberg 1996), arranged marriages as an HR strategy may indeed have been a pertinent practice for extending the talent pool beyond firm boundaries. Becoming adopted, however, reportedly does not impact on performance: MMSW find no statistical distinction between un-adopted and adopted in-laws (p. 850). Turning this argument around, we suggest that becoming a son-in-law may be critical, while being adopted is not. Accordingly, and for simplicity, we hereafter refer to non-blood heirs as in-laws.

But could Mechanisms 1 to 3 as proposed by MMSW not act equally effectively through (possibly) arranged marriages? The answer to this question is positive, but eliminating the adoption part from the MMSW model substantially limits the share of cases they possibly even apply to. This is because the availability of the real option of marriage is subject to more constraints than are adoptions. For taxing the impact of these constraints, we rely on information given in MMSW and aggregate statistical data:

Constraint 1: Some patriarchs may not have had daughters.
This reduces the reach of all three incentive mechanisms by about 1/4, because "replacing a less talented son" (Mech. 1), "incentivizing professional managers" (Mech. 2) and "threatening sons with possible displacement" (Mech. 3) all depend on the patriarch having a daughter. With fertility rates in Japan falling from around 2.0 to around 1.5 (and even less) during the MMSW observation period, at least one in four families may be expected to not have had a daughter.

Constraint 2: Some daughters and professional managers may not be willing to accept arranged marriages.
This constraint reduces the reach of all three mechanisms by about 2/3. This corresponds to the average share of arranged marriages, which fell from 55% in 1950 to 10% in 1990 (compare App. Figure 1).

Constraint 3: Some patriarchs may not have had sons.
This constraint reduces the reach of Mech. 1 (Displacement of less talented sons), and Mech. 3 (Motivation of blood sons increases through threat of displacement) by approximately 1/4 each, as they critically depend on the patriarch having a son. As with Constraint 1, at least one in four families may not have had a son because of falling fertility rates.

Furthermore, there are two time-dependent constraints:
Constraint 4: Becoming an in-law is an option only available to unmarried professional managers.
Constraint 4 limits the reach of all three mechanisms at least by half, because the share of unmarried candidates in an appropriate age relation to the patriarch daughter declines over time. With historical figures even higher, in 2010 around 10% of male individuals were married by age 25, a figure reaching

---

[4] Risk of confusion abounds as many post-war sources continue to refer to sons-in-law as *muko yoshi* (lit. "adopted sons-in-law"), also in cases where sons-in-law have changed their last name for corporate identity reasons only, or even when they simply assume a management role in the firm of their father-in-law.

about 50% at age 30, and well above 70% by age 40. Because proof of talent requires at least some years of experience, managers likely won't be considered candidates for arranged marriage and in-law successor before the age of 30. Accordingly, 1/2 represents a conservative estimate.

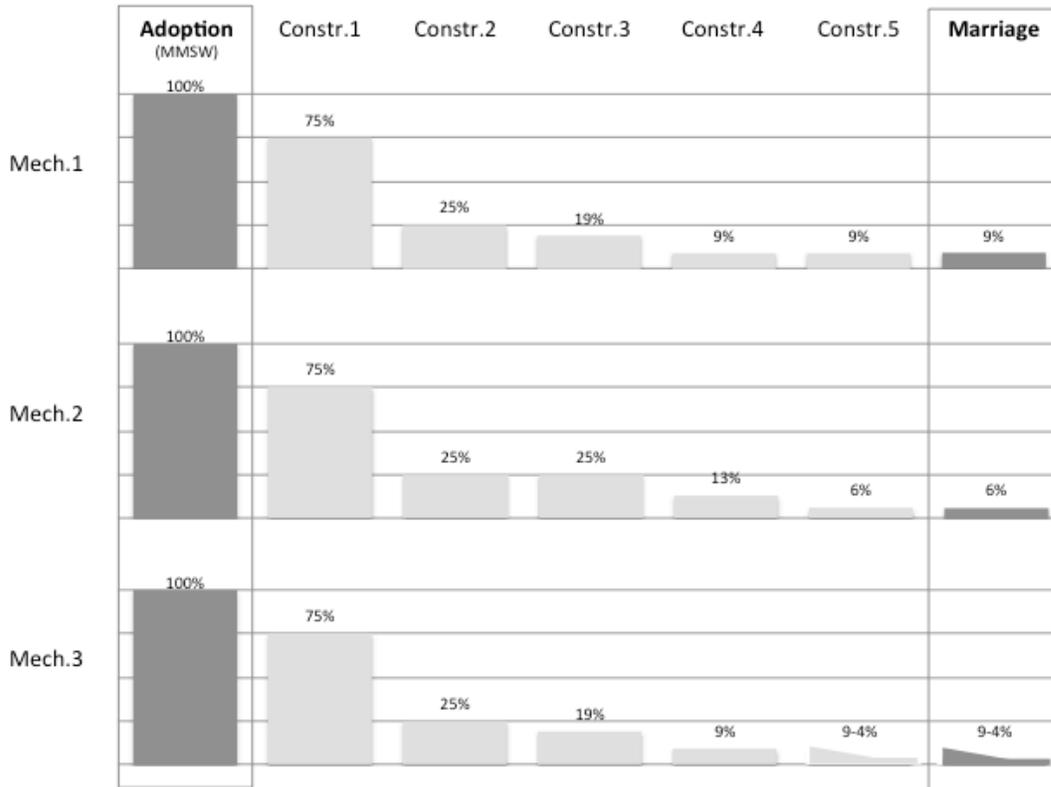*Constraint 5*: Conclusion of a marriage may change effectiveness of mechanisms.

Conclusion of a marriage reduces the effectiveness of Mech. 2 because the "in-law job" is being taken, and it diminishes the reach of Mech. 3 because the "threat of displacement" starts to materialize. This constraint applies during an average of 18 years between marriage and succession[5]. It cuts the reach of Mech. 2 and limits the effectiveness of Mech. 3 in 60% of firm-year observations for family firms.[6] We cannot produce a valid estimate for the limitation put by Constraint 5 on Mech. 3 because patriarchs may create a tournament between son(s) and in-law(s), but they may equally designate successors already at marriage. In the same vein, sons may or may not give up their aspirations as an in-law appears.

As the effects of these constraints can be considered to be independent, stepwise expanding yields the cumulative limitation of firm-year observations to which the mechanisms may apply. Figure 2 visualizes these results.

---

[5] At successions, in-law age averages 61 (FN 18 on p. 850). With the median age difference between bride and groom figuring around 3 years in Japan, and 95% of marriages being concluded before the bride reaches age 40, Constraint 5 applies during an average of at least 18 years prior to succession (if the groom marries at 43 and becomes successor at the average age of 61).

[6] Average leadership tenure for heirs figures at 18 to 19 years, and at 30 years for founders (compare MMSW p. 846). Assuming a linear distribution between the mean and double its value, we arrive at reductions of reach figuring around 75% for heirs, and around 50% for founders in terms of firm-year observations affected. As the empirical distribution is likely log-normal, this is a conservative estimate. Expanding with the shares of founder- and heir-led family businesses and even ignoring *salariman* firms (MMSW Table 3), Constraint 5 then applies to more than 60% of firm-year observations for family firms (50% of the 23.6% founder firms, and 75% of the 65.3% heir-led businesses).

Figure 2: Estimated cumulative effect of constraints on reach of MMSW mechanisms

	Adoption (MMSW)	Constr.1	Constr.2	Constr.3	Constr.4	Constr.5	Marriage
Mech.1	100%	75%	25%	19%	9%	9%	9%
Mech.2	100%	75%	25%	25%	13%	6%	6%
Mech.3	100%	75%	25%	19%	9%	9-4%	9-4%

Description: Cumulative effect of the five constraints implied by condition of marriage relative to adoptions obtained through stepwise expanding.

Interpretation: Cumulatively, we tax the mechanisms proposed by MMSW to be effective in less than 10% of Japanese family firms. We doubt therefore, that they suffice to explain their superior performance.

In addition to these theoretically derived constraints, empirical inspection reveals that Mech. 2 ("prize" of marriage motivates professional managers) is hardly effective at all. This is because the Mech. 2 requires that professional managers have a realistic chance of marrying a patriarch daughter. However, we find that only two of 47 later in-law successors[7] have likely joined the business directly after graduation at age 23. With median age of 31 at firm entry, it is obvious that almost all in-laws are "recruited" externally. The resulting marginal chance of obtaining the "prize" will not suffice to motivate professional managers. Taken together, the theoretically derived and empirically motivated evidence suggest that the mechanisms are much unlikely to explain the superior performance of Japanese family firms observed by MMSW.

---

[7] For these 47 in-law successors data on birthdates and entry was readily available because the businesses were already listed when they joined. We will draw further insights from this group in section 4.

4. Turning arguments around: What if more successful firms are more likely to have in-law successors?

Sections 2 and 3 leave unexplained MMSW's Obs.2 that family firms run by in-laws outperform those run by blood heirs. Whereas MMSW hypothesize that in-laws cause superior performance, it might actually be worth examining the opposite: Businesses with superior performance may be more likely to have in-law successors.

Such selection effect may come about because an arranged marriage represents a family affair involving several parties: patriarch, daughter, son and prospective in-law. Let us examine how their incentive structures depend on firm performance. To start with, prospective in-laws will find joining a healthy business a more attractive opportunity. This is because joining a family business as an in-law is tantamount to a point of no return, due to the rigidity of the Japanese labor market in general and the management talent sector in particular (Cheng and Kalleberg 1996).

A similar argument applies to the patriarch in search of a successor. Chances to attract an in-law candidate from a blue chip company or government agency increase with the firm's performance. If the talent a patriarch may expect from in-law candidates does not significantly exceed that of a "salaryman" or a son, he has no incentive to even start the recruiting process – which involves obtaining his daughter's agreement to cooperate in an "arranged marriage HR strategy".

Daughters' motivations require closer inspection. Popular accounts of the struggling family business frequently portray the loyal daughter agreeing to the sacrifice of an arranged marriage to save her father's legacy through the assets brought by an in-law. However, the large-scale listed companies in the MMSW sample typically struggle with profitability, but not with funding. And if they struggle with capital procurement, assets from a private individual are unlikely to suffice. In contrast, if the family business is healthy and performing well, the pool of candidates available for an arranged marriage grows and so do real options from the perspective of daughters. In concrete terms, the likelihood of finding a candidate whose attractiveness matches or exceeds the attractiveness expected from a love marriage strongly increases.

Finally, (blood) sons may play a pivotal role in solving the puzzle. From MMSW data on p. 848 (Table 3) we understand that assets of listed family businesses average some 120bn yen and annual returns amount to about 5bn yen, or around US$40 million at 2015 exchange rates. When families hold at least a controlling stake, and with executive remuneration still at very low levels in Japan (Kaplan 1994; Nakazato, Ramseyer and Rasmusen 2009; Blind and Lottanti von Mandach 2013), the trade-off faced by sons is, rather, the following: earning a decent share of profits (likely several million US$ in healthy businesses) and enjoying a leisurely life, versus working hard in a possibly unattractive job, just to earn an additional US$300,000 at best (during 1986–1995 average annual CEO remuneration was about 33 million yen, or about US$260,000; Kato and Kubo 2006). Quite clearly, this is a story about reservation

wages, particularly in large businesses and/or in cases with high family stakes. The ratio of executive remuneration to capital income in low-performing and/or small businesses is entirely different. A few hundred thousand dollars relative to little or nothing are reason enough to strike out on the successor path. As a side note, this also means that the effect of Mech. 3 will be weaker in larger and better performing family firms (in the small share of firms it effectively may reach; compare Section 3).

Summing up this review of the family incentive structure, we find that patriarchs, daughters and sons alike will find it easier to consider and to recruit a prospective in-law successor if the business is performing well. For testing this hypothesis we need to compare the absolute performance of firms later to be led by in-laws around the time of their entry with the corresponding year-industry average. The timing of entry into the in-law firm is pertinent, because the change of job ensuing from the marriage represents a true "point of no return". Getting a divorce is less of an issue than getting back one's former job, or any near equivalent.

For maximizing the sample size for these entry events, we add another six years of observations (1956-1961) to our earlier enlarged sample.[8] As it turns out, 47 of the firms in our enlarged sample (n = 107,184 firm-year observations) were already listed at the time of entry of the individuals who were later to become in-law CEO successors. Table 2 lists estimation output for performance differentials of firms around their entry relative to industry-year adjusted averages of all listed firms both for the full sample (Set-ups A and B) and for a restricted sample as in MMSW (listed before 1971; Set-ups C and D; reducing the number of in-law firm entries by 12 to 35 and sample size to n= 70,138 firm-year observations). Estimations correct for size, firm age and leverage as in MMSW (Set-ups A and C). Dropping these controls yields qualitatively similar results with even larger parameter estimates, suggesting that absolute rather than relative performance is the relevant yardstick (Set-ups B and D). Limiting the sample to firms listed before 1971, as in the MMSW restriction, yields qualitatively similar results (Set-up C), and removing controls equally yields larger parameter estimates corroborating that prospective in-laws focus on absolute performance (Set-up D).

---

[8] This means that we also include a small share of observations from the period before disclosure was standardized in 1962. However, as we are interested not in actual performance, but in the performance *as perceived* by the agents at the time, this does not pose a problem.

Table 2: Performance around firm entry of later in-law CEO successors"

(A) Controlling for firm age, size, leverage Full sample	ROA	Q	Employment growth	Sales growth
2 years before entry (t = –2)	**0.018**	**0.183**	**0.048**	0.028
	(0.007)	**(0.092)**	(0.015)	(0.024)
1 year before before entry (t = –1)	**0.022**	0.208	**0.039**	**0.038**
	(0.006)	**(0.087)**	(0.014)	(0.022)
Entry year (t = 0)	**0.020**	0.207	**0.026**	0.027
	(0.006)	(0.085)	(0.013)	(0.021)
(B) Not controlling for firm age, size, leverage Full sample				
2 years before entry (t = –2)	**0.023**	0.219	**0.052**	0.032
	(0.007)	(0.094)	(0.016)	(0.022)
1 year before entry (t = –1)	**0.027**	0.240	**0.042**	**0.043**
	(0.007)	(0.087)	(0.014)	(0.022)
Entry year (t = 0)	**0.025**	0.233	**0.031**	0.032
	(0.006)	(0.087)	(0.014)	(0.021)
(C) Controlling for firm age, size, leverage (listed until 1970, as in MMSW)				
2 years before entry (t = –2)	**0.019**	**0.224**	**0.059**	0.031
	(0.007)	(0.083)	(0.017)	(0.026)
1 year before entry (t = –1)	**0.026**	**0.206**	**0.055**	**0.050**
	(0.006)	(0.080)	(0.015)	(0.025)
Entry year (t = 0)	**0.023**	**0.217**	**0.036**	0.031
	(0.006)	(0.078)	(0.015)	(0.024)
(D) Not controlling for firm age, size, leverage (listed until 1970, as in MMSW)				
2 years before entry (t = –2)	**0.022**	**0.230**	**0.061**	0.033
	(0.007)	(0.084)	(0.017)	(0.026)
1 year before entry (t = –1)	**0.029**	**0.210**	**0.057**	**0.052**
	(0.006)	(0.080)	(0.015)	(0.025)
Entry year (t = 0)	**0.027**	**0.218**	**0.037**	0.033
	(0.006)	(0.079)	(0.015)	(0.024)

Description: Data 1956 to 2015 (as available from DBJ through Japan Economic Research Institute), variable definitions, winsorization (1%) and correction for heteroskedasticity as in MMSW. Parameter estimates for dummies marking the 47 entry events and the two preceding years of in-laws that later became CEO successors. Base category is population of listed businesses with $n = 107,184$ for ROA, employment and sales growth and $n = 76,577$ for Q (Setups A and B), and $n = 70,138$ for ROA, employment and sales growth and $n = 49166$ (Setups C and D). Summary statistics for performance measures and main controls are in appended Table 2.2. Bold font indicates significance better than 10%. Standard errors are given in brackets.

Interpretation: In-laws join businesses that have shown strong outperformance during the two years preceding their entry. Note that the maximum estimate in all performance measures and setups relates to either the pen-ultimate or ultimate year prior to their entry. This coincides with the typical time frame between decision and conclusion of a marriage. The larger parameter estimates for the setups without controls for firm age, size, and leverage, suggest agents involved in the "family affair" of an arranged marriage consider absolute performance their relevant yardstick.

The evidence presented corroborates the existence of a selection effect, but leaves open the question whether the firms joined by in-laws keep their competitive edge until the actual succession takes place. In other words, we need to test whether in-law successors at least partially inherit superior performance. To

that end, we first introduce an additional dummy marking all years between entry of and succession to in-law CEOs. We exclude two cases where these years overlap with the business already being led by an earlier in-law. Data availability limits the share of cases where we can trace back from succession to entry. Fortunately, however, this leads to a more conservative estimate as it enlarges the average time elapsed since entry, i.e., selection. In the unrestricted sample, this yields $k = 1,315$ firm-year observations tracing back $j = 106$ succession events, of which 939 are of 66 events in firms listed before 1971. As before, the contrast is the average of all listed firms, both family and non-family. Estimation output for the "in-between" dummy is in Table 3 (set-ups as in Table 2). As can be seen from this, on average the firms joined by in-laws keep a significant share of their competitive edge during the years until succession.

Table 3: Performance premium between entry and succession to in-laws

(percentage points)	ROA	Q	Employment growth	Sales growth
(A) Full sample	**0.796**	**9.133**	**1.129**	**1.041**
(k = 1315)	(0.119)	(1.621)	(0.259)	(0.411)
(C) Firms listed before 1971, as in MMSW	**0.870**	**12.687**	**1.155**	**1.022**
(k = 939)	(0.120)	(1.471)	(0.284)	(0.454)

Description: Performance premium of businesses with upcoming succession to non-blood heirs relative to all listed businesses (Setup A), and to firms listed before 1971 (Setup C; as in MMSW). Data, sample sizes, and controls all as in Table 2. Bold font indicates significance better than 10%, standard errors are given in brackets.

Interpretation: Superior performance of firms joined by future in-law successors relative to the population persists during the period until eventual CEO succession.

To assess what share of the selected superior performance remains as succession approaches, we create flags dividing the 10 years prior to succession into periods of 4, 3, 2 and 1 years, providing more detail as succession comes close. As can be inferred from Table 4, firms with upcoming successions to in-law CEOs keep their competitive edge relative to the industry-year adjusted average of all listed firms until briefly before the succession event.

Table 4: Performance in family firms approaching in-law CEO succession

(percentage points)	ROA	Q	Employment growth	Sales growth
(A) All listed firms, 1956–2015 (*j* = 106 events)				
10 to 7 years before succession	**1.060**	**13.022**	**1.571**	**2.626**
	(0.252)	(3.414)	(0.549)	(0.871)
6 to 4 years before succession	**0.866**	**8.816**	**1.416**	-0.607
	(0.264)	(3.536)	(0.572)	(0.905)
2 and 3 years before succession	0.389	3.494	0.506	0.554
	(0.308)	(4.128)	(0.667)	(1.055)
1 year before succession	0.119	0.959	-0.478	-0.193
	(0.446)	(5.609)	(0.908)	(1.433)
(B) Firms listed before 1971, 1962–2000 (as in MMSW, *j* = 63 events)				
10 to 7 years before succession	**1.030**	**15.355**	**1.374**	**2.505**
	(0.262)	(3.022)	(0.607)	(0.968)
6 to 4 years before succession	**0.970**	**14.224**	**1.568**	-0.695
	(0.285)	(3.275)	(0.660)	(1.053)
2 and 3 years before succession	**0.916**	**13.802**	**1.342**	1.030
	(0.334)	(3.843)	(0.775)	(1.237)
1 year before succession	0.605	**13.477**	-0.262	-0.449
	(0.459)	(5.293)	(1.060)	(1.692)

Description: Average performance premium of businesses approaching succession to in-laws relative to all listed businesses from 1956-2015 (Setup A), and to firms listed before 1971 between 1962 and 2000 (Setup B; as in MMSW). Data, controls and estimation model are all as in Table 4. Sample sizes for Setup A are *n* = 107,184 for ROA, employment and sales growth and *n* = 76,577 for Q. Setup B (according to MMSW sampling rules) has *n* = 51,535 for ROA, employment and sales growth, and n = 33,895 for Q. Bold font indicates significance better than 10%, standard errors are given in brackets.

Interpretation: Family firms heading up to an in-law CEO succession keep their superior performance relative to the population until briefly before the succession event.

To assess whether this competitive edge also holds against businesses that are approaching succession to a blood heir, we calculate performance differences during the same time subdivisions for the *j* = 319 blood events in Setup A of Table 4, of which 122 events are included in the MMSW sample (Setup B, Table 4). Results presented below in Table 5 are consistent with the literature: "Non-family member appointments tend to follow periods of poor operating performance implying that there might be more scope for improvement when a non-family successor is appointed" (Smith and Amoako-Adu 1999: 341). Indeed, successions to in-laws come after a period with more pronounced performance declines than for successions to heirs by blood. As MMSW rightly note "the grooming of a successor likely begins years before the actual succession event" (p. 848). Given that in-laws are being regarded as "*tanin* (outsiders)" who "can never be fully trusted" (MMSW citing Matthew Masayuki Hamabata 1991, p. 844), a loss in trust levels during the grooming period may be one potential reason behind this phenomenon.

The observation of differential developments documented in Table 5 may also have a bearing on the MMSW events studies. In light of the findings documented for the phenomenon of long-term profit persistence due to factors such as relative market position and other "slow" variables (Mueller 1977) and corresponding evidence for Japan (Odagiri and Yamawaki 1986; Maruyama and Odagiri 2002), the lags of two years used by MMSW to account for mean reversion in their events studies might be not sufficient, because the differential pre-event performance developments in the two groups implies a risk of bias.

Table 5: Performance differentials in family firms approaching CEO succession to in-laws versus blood heirs

(percentage points)	ROA	Q	Employment growth	Sales growth
(A) All listed firms, 1956–2015 (*j* = 106 events)				
10 to 7 years before succession	**0.644**	**8.308**	**1.369**	**2.580**
6 to 4 years before succession	**0.413**	**5.815**	**1.399**	-1.082
2 and 3 years before succession	0.069	0.866	0.355	0.651
1 year before succession	0.204	-0.06	-0.927	0.227
(B) Firms listed before 1971, 1962–2000 (as in MMSW, *j* = 63 events)				
10 to 7 years before succession	**0.501**	**7.75**	0.735	**2.167**
6 to 4 years before succession	0.267	**7.688**	**1.466**	-1.126
2 and 3 years before succession	0.235	**8.226**	0.683	1.005
1 year before succession	0.324	**11.524**	-0.243	0.747

Description: Definitions and data as in Table 4, but dependent variable now for the differentials between businesses heading up to in-laws succession and businesses approaching succession to heirs by. Bold font indicates significance of better than 10%.

Interpretation: Firms with upcoming successions to an in-law keep their superior performance also relative to the businesses approaching succession to an heir by blood until about five years before the succession event. The shrinking of the differentials implies that there may be a systematic difference in pre-succession performance beyond the time frame considered in MMSW.

Taking these observations together we find that in-laws are joining firms with superior performance (Table 2), and that these firms maintain a considerable share of their performance differential until succession to the in-law CEO (Table 3), even as the succession comes close (Table 4). Because the performance decline in businesses approaching succession to in-laws is more pronounced than for successions to heirs by blood (Table 5), performance lagged by two years used in MMSW event studies may not be sufficient to fully account for mean reversion.

5. Making sense of contradictory evidence: "The fundamental things might *not* apply, as time goes by"

So far we have concentrated on MMSW's explanations by replicating their estimation of performance differentials in succession events (Section 2), by assessing their proposed mechanisms (Section 3), and by suggesting and testing an alternative hypothesis (Section 4). But concerns also apply to the very observations that their explanations refer to, namely of family firms outperforming non-family firms (Obs. 1) and of businesses run by in-laws outperforming those led by heirs by blood (Obs. 2). As MMSW's sample spans 38 years during which Japan has experience rapid and radical change, we are concerned regarding the time invariance of the MMSW observations. In the following, we present and discuss some evidence contradicting Obs. 1 and 2 available from new and extant literature and as implied by our own results.

Previous research (Saito 2008) indicates that MMSW's Obs.1 of a generally superior performance by family firms over non-family firms might no longer apply during the last decade of the MMSW observation period (1962–2000). Examining Tobin's Q for a sub-period (1990–1998), Saito finds the performance of family firms owned *and* managed by sons and by in-laws (i.e., excluding the founder) to be inferior even to that of non-family firms, while in contrast family firms either owned *or* managed by the founder's descendants maintain superior performance relative to non-family firms. Importantly, Saito finds that the performance in terms of Q observed for family firms managed by in-laws is *inferior* to that of family firms managed by sons. Using a different approach (matched pairs of family and non-family firms) and focusing on return indicators, Allouche, Amann, Jaussaud and Kurashina (2008) still find some evidence for superior performance by Japanese family firms in 1998, but this is no longer the case by 2003. Moreover, ongoing research by Shishido, Yanagawa, Saito and Dazai (2014) splits the MMSW observation period into three sub-periods: 1962–1985, 1986–1992 and 1993–2000. Using a broader sample and relying on a differences-in-differences method, they find that firms led by in-laws outperformed non-family firms in ROA only during the first sub-period.

How can these changes be explained? – Generally, any differential such as in performance between family firms and non-family firms is difficult to analyze for the simple reason that change might occur on both sides of the equation. In our view, it is highly likely that significant change actually has occurred on both sides during the 38 years covered by the MMSW sample. This is because Japan has not only witnessed economic extremes from catch-up growth to decades of stagnation, but has also undergone fundamental institutional and societal change. MMSW aptly account for the economic dimension of change by using first differences for measuring performance in their study of succession events. In contrast, they address neither societal nor institutional change. Closer inspection, however, reveals significant change in these two dimensions.

First, societal change may indirectly explain why no traces of firms run by in-laws outperforming those run by blood heirs (MMSW Obs. 2) can be found for more recent data (Saito 2008). Japan is no exception to the global trend that prefers marriages of choice to arranged ones (Mehrotra, Morck, Shim and Wiwattanakantang 2011), but the pace and magnitude of this decline in arranged marriages may definitely be considered exceptional (App. Figure 1). This development is mirrored in our data where we find only 5% additional cases of in-law succession when we extend the investigation period to include 2001 to 2015 on the restricted MMSW sample of firms listed before 1971, which yields some 40% more firm-year observations. Albeit less pronounced, we find a similarly disproportionate relationship for the firms excluded from the MMSW sample (those listed from 1971 onwards). While firm-year observations increase by 140%, in-law succession events increase by 111% only. Now, as fewer and fewer firms enter the category of firms run by in-laws, the average tenure in that group, *ceteris paribus,* increases relative to the group of firms run by heirs by blood. In line with our earlier argument of performance declining with CEO tenure (Section 2), this may contribute to explaining why MMWS Obs. 2 has eroded by the 1990s (Saito 2008).

MMSW point to a sustained increase in the total number of adult adoptions (from 67,158 in 1965 to 84,175 in 2002; Table 1, p. 842) to corroborate the relevance of their mechanisms as resulting from the practice of adoption. While, as we have already discussed, their research is overwhelmingly not about adoptions as a means of injecting management talent into the family (firm), but about in-laws, possibly recruited through arranged marriages (see Section 2), readers might be interested in understanding why adult adoptions in general are on the rise in Japan.[9] In our view, the tax angle suggested by Bryant (1990) provides an important route of explanation. As Bryant reports, the fastest-growing use of adoption in contemporary Japan is to reduce inheritance taxes, and there are substantial incentives to do so. Even small land holdings are extremely valuable and the chance of a tax evasion challenge is slim (ibid; Tsubuku and Braser 2017). A look at the 2014 inheritance tax table (see App. Table 1) shows that the administratively simple and low-cost procedure of adopting sons- (and daughters-) in-law still comes with a net tax benefit of 23.5 million yen in cases where assets of more than 300 million yen are transferred. This is because Japan does not tax the inheritance as a whole, but applies a progressive rate separately to each individual share. In fact, the number of adult adoptions is likely to rise further due to the lowering of the exemption threshold for inheritance in 2015, bringing 80% more cases into the tax bracket. Thus, from the perspective of family firms with in-laws, regardless of whether their marriage is arranged, and equally regardless of any potential management role, adoption may simply represent a standard tax-saving vehicle.

Second, institutional change through legislative reforms introduced since the early 1990s has reportedly impacted on the non-family business side of the performance differential (MMWS Obs. 1), as it

---

[9] As are the number of dissolved adoptions, which amounted to about 28,000 in the same year, 2002 (MOJ 2006, Tab. 41-2).

has helped to strengthen corporate governance in non-family firms (Inagami 2001; Jackson and Moerke 2005; Chizema and Shinozawa 2012). With the performance of non-family firms improving relative to that of family firms, we have another factor explaining why family firms have recently been losing their lead over non-family firms in Japan.

6. Summary and conclusion

In their article "Adoptive Expectations: Rising Sons in Japanese Family Firms", Mehrotra, Morck, Shim and Wiwattanakantang (2013) explain the superior performance of listed family-run firms in general, and the superior performance of firms run by non-blood heirs in particular, by referring to the specific institution of adult adoption, and, to a lesser degree, to arranged marriages. They propose that adult adoption in family firms leads to performance enhancement through three mechanisms: (1) non-blood heirs displace the least talented heirs by blood; (2) the prospect of a "non-blood heir job" motivates professional managers in family-run firms; and (3) the threat of being replaced motivates heirs by blood.

Based on doubts whether a substantial performance differential may be found between heirs by blood and non-blood heirs given extant research on the CEO effect in Japan, we have replicated the succession events MMSW use to corroborate superior talent of non-blood heirs. While we find qualitatively similar results, there are several concerns about what appears to be the decisive ingredient in MMSW's regression set-up: a dummy for the talent of the predecessor in a succession event. First, their talent dummy relies on an incumbent leader's historical cognitive performance over half a century before the succession event. Second, the educational achievements of departing leaders may moderate the likelihood of choosing an in-law successor with similar educational achievements. If our concerns about the validity of the measure should hold, estimates of non-blood successors would be more likely to "benefit" from the predecessor talent dummy, which translates into a risk of bias. Third, the dummy only indirectly and partially corrects for how "difficult to beat" a departing leader is. When the MMSW talent dummy is replaced by a direct and more general measure of over-/ underperformance, no significant performance differentials remain.

In assessing the effective reach of the mechanisms proposed by MMSW, we have shown that – relative to their model centering on adoptions – the condition of a marriage found in 95% of cases, puts substantial constraints on the mechanisms suggested (Section 3). Further constraints linked to the required family structure (having a son) and to the delimiting effect of a marriage being eventually concluded causes their mechanisms to apply to only a very small fraction of family businesses.

As these findings leave us without an explanation for the superior performance of firms led by in-laws (MMSW Obs.2) we have proposed an alternative hypothesis centering on the incentive structure of current and prospective family members to explain how firms that show superior performance are more likely to have in-law successors. In essence, we argue that patriarchs, daughters, prospective in-laws and sons alike are more likely to consider an arranged marriage if the business concerned performs well. We test this hypothesis by computing the performance premiums around the entry of an individual later to become an in-law successor and find robust evidence in support of our model (Section 4). We further show that the firms selected by in-laws keep a competitive edge until shortly before the in-law-CEO succession event.

Taking together the evidence collected in the replication of succession-event regressions, our further assessment of the MMSW mechanisms, and our alternative model, we believe that the superior performance of family firms led by in-laws is inherited rather than caused by the performance-enhancing mechanisms or superior talent of non-blood heirs.

Incidentally, our research has produced two other insights that may have wider implications. First, the phenomenon of in-laws selecting the business they join on the basis of performance may be found in other economies, particularly where arranged marriage prevails. Where pertinent (as it was in Japan), news of arranged marriages in the owner family should provide valuable information on the intrinsic value of the business concerned. And second, we believe that systematic differences in pre-succession performance patterns between blood and in-law successors (Table 5) may be a generally relevant item for family business research. This is because we expect similar differences for the two categories of heirs to exist almost universally. In our view, the timing of a succession equally represents a "family affair", in which the personal proximity between patriarch and heir (Casson 1999, p. 15) may moderate the propensity of the former to let go of control. Now, if the level of proximity is higher for sons than for in-laws, this may have three implications. First, patriarchs more naturally pass control to their sons, but are more hesitant toward their in-laws. Thus, a stronger relative decline in performance may be needed to overcome such hesitation. Second, in-laws may be less likely to ask to be entrusted with the CEO seat; but a performance decline may provide an appropriate argument. Third, the closer proximity of sons to patriarchs may enable smoother transitions, as sons can more easily achieve implementation of new ideas prior to what eventually becomes just a formal succession. The arguments can easily be extended to professional CEOs (non-family appointments).
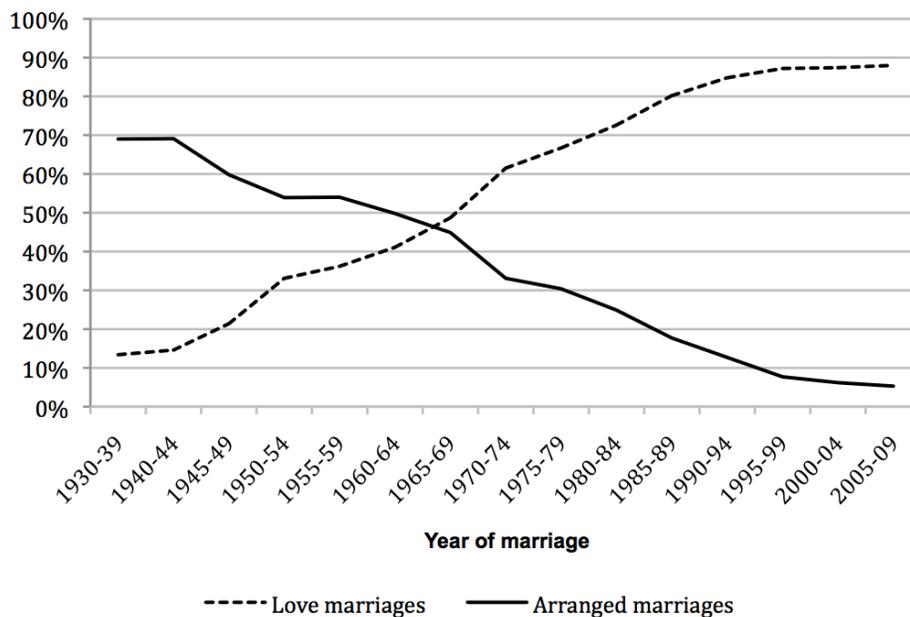
Appendix

App. Table 1: 2014 inheritance taxes

Amount (million yen)	Tax rate (%)	Allowance (million yen)
< 10	10	0
< 30	15	0.5
< 50	20	2
< 100	30	7
< 300	40	17
> 300	50	47

Source: Translated from National Tax Agency of Japan:

https://www.nta.go.jp/taxanswer/sozoku/4155.htm (4 Mar 2015)

App. Figure 1: Share of marriages of choice and arranged marriages in Japan, 1930–2009

Source: Based on Institute of Population and Social Security Research (IPSS) (2011:30, Table 1).

App. Table 2: Summary statistics for main variables

2.1 Replicated MMSW sample (1962–2000, listed before 1971), values of MMSW Table 2 in brackets.

	Mean	**Median**	**Max**	**Min**	**SD**
Performance (%)					
ROA	4.60	3.96	31.19	-14.51	4.62
	(4.60)	(3.92)	(30.36)	(-18.97)	(4.50)
Q	1.07	0.98	4.14	0.44	0.43
	(1.40)	(1.28)	(5.79)	(0.29)	(0.42)
Sales growth	8.35	6.49	67.29	-37.56	15.84
	(8.02)	(6.15)	(114.77)	(-70.28)	(16.02)
Employment growth	-0.01	-0.32	42.78	-31.74	8.97
	(-0.34)	(-0.48)	(58.98)	(-65.44)	(8.12)
Other firm characteristics					
Firm size (total assets, JPY bn)	167.00	31.34	15398.82	0.16	571.89
	(189.00)	(32.40)	(16100.00)	(0.17)	(668.00)
Leverage (%)	12.39	9.88	65.15	0.00	11.09
	(11.86)	(9.54)	(67.02)	(0.00)	(10.60)
Firm age (years)	50.5	47.0	389.0	3.0	27.1
	(44.9)	(44.0)	(110.0)	(4.0)	(18.3)

Description: Data as in MMSW for all stock exchanges in Japan including Sapporo; performance measures and data processing according to MMSW Table 2. 51,535 firm-year observations for all measures but Q (n = 33,895 due to missing values). Winsorization conducted on full sample (see below); firm age *not* winsorized.

2.2 Full Sample (1956–2015, all listed firms)

	Mean	**Median**	**Max**	**Min**	**SD**
Performance (%)					
ROA	4.80	4.00	37.82	-23.23	6.45
Q	1.16	1.01	4.14	0.44	0.58
Sales growth	6.08	4.35	67.29	-37.56	16.24
Employment growth	0.44	0.00	42.78	-31.74	9.58
Other firm characteristics					
Firm size (total assets, JPY bn)	157.58	32.45	16657.03	0.04	578.29
Leverage (%)	11.80	8.71	69.01	0.00	11.92
Firm age (years)	51.22	49.00	395.00	1.00	26.51

Description: Data for all stock exchanges in Japan including Sapporo; performance measures and data processing according to MMSW Table 2 (except for firm age not being winsorized). 107,166 firm-year observations for all measures but Q (n = 76,656 due to missing values).

References

Allouche, José, Bruno Amann, Jacques Jaussaud and Toshiki Kurashina. 2008. "The Impact of Family Control on the Performance and Financial Characteristics of Family Versus Nonfamily Businesses in Japan: A Matched-Pair Investigation." *Family Business Review* 21 (4): 315–329.

Bhagat, Sanjai, Brian Bolton and Ajay Subramanian. 2010. "CEO education, CEO turnover, and firm performance." Working Paper. Available at SSRN: https://ssrn.com/abstract=1670219 [Accessed July 5, 2018].

Blind, Georg D. 2012. "Investigating Entrepreneurial Spirit with the Rule Approach: Why Self-employment is on the Decline in Japan." *Evolutionary and Institutional Economic Review* 9(1):183–198.

Blind, Georg D. and Stefania Lottanti von Mandach. 2013. "Modest Executive Pay and Narrowing Wage Gaps for Women and Non-Regular Employees: Evidence from Recent Statistics." In Chiavacci, D. and I. Wieczorek, *Japan 2013*. Berlin: VSJF. pp. 203–228.

Bryant, Taimie L. 1990. "Sons and Lovers: Adoption in Japan." *The American Journal of Comparative Law* 38 (2): 299–336.

Calder, Kent E. 1993. *Strategic Capitalism: Private Business and Public Purpose in Japanese Industrial Finance.* Princeton University Press.

Casson, Mark. 1999. "The Economics of the Family Firm". *Scandinavian Economic History Review* 47(1): 10-23.

Cavelaars, Paul. 2005. "Has the Tradeoff Between Productivity Gains and Job Growth Disappeared?" *Kyklos* 58 (1): 45–64.

Cheng, Mariah Mantsun and Arne L. Kalleberg. 1996. "Labor Market Structures in Japan: An Analysis of Organizational and Occupational Mobility Patterns." *Social Forces* 74 (4): 1235–60.

Chizema, Amon and Yoshikatsu Shinozawa. 2012. "The 'Company with Committees': Change or Continuity in Japanese Corporate Governance?" *Journal of Management Studies* 49 (1): 77–101.

Crossland, Craig, and Donald C. Hambrick. 2007. "How National Systems Differ in their Constraints on Corporate Executives: A Study of CEO Effects in Three Countries." *Strategic Management Journal* 28 (8): 767-789.

Crossland, Craig, and Donald C. Hambrick. 2011. "Differences in Managerial Discretion Across Countries: How Nation-Level Institutions Affect the Degree to Which CEOs Matter." *Strategic Management Journal* 32 (8): 797-819.

De Long, Bradford J. 1988. "Productivity Growth, Convergence, and Welfare: Comment." *The American Economic Review* 78 (5): 1138–54.

Dore, Ronald Philip. 1987. *Taking Japan Seriously: A Confucian Perspective on Leading Economic Issues*. Stanford University Press.

Girardin, Eric and Zakaria Moussa. 2011. "Quantitative Easing Works: Lessons from the Unique Experience in Japan 2001–2006." *Journal of International Financial Markets, Institutions and Money* 21 (4): 461–95.

Hambrick, Donald C. and Gregory D. S. Fukutomi. 1991. "The Seasons of a CEO's Tenure." *Academy of Management Review* 16 (4): 719–42.

Henderson, Andrew D., Danny Miller and Donald C. Hambrick. 2006. "How Quickly Do CEOs Become Obsolete? Industry Dynamism, CEO Tenure, and Company Performance." *Strategic Management Journal* 27 (5): 447–60.

Hill, Charles W. L. 1995. "National Institutional Structures, Transaction Cost Economizing and Competitive Advantage: The Case of Japan." *Organization Science* 6 (1): 119–131.

Hutzschenreuter, Thomas, Ingo Kleindienst and Claas Greger. 2015. "What Determines Demographic Similarity Between Incumbent CEOs and Their Successors? A CEO Informal Power Perspective." *Managerial and Decision Economics, 36*(7): 421–438.

Inagami, Takeshi. 2001. "From Industrial Relations to Investor Relations? Persistence and Change in Japanese Corporate Governance, Employment Practices and Industrial Relations." *Social Science Japan Journal* 4 (2): 225–41.

Institute of Population and Social Security Research (IPSS). 2011. *The Fourteenth Japanese National Fertility Survey in 2010 Highlights of the Survey Results on Married Couples.* National Institute of Population and Social Security Research, Tokyo. Available at: http://www.ipss.go.jp/site-ad/index_english/nfs14/Nfs14_Couples_Eng.pdf [Accessed March 5, 2015].

Ishida, Hiroshi, Spilerman, Seymour and Su, Kuo-Hsien. 1997. "Educational Credentials and Promotion Chances in Japanese and American Organizations." *American Sociological Review*: 866–882.

Jackson, Gregory and Andreas Moerke. 2005. "Continuity and Change in Corporate Governance: Comparing Germany and Japan." *Corporate Governance: An International Review* 13 (3): 351–61.

Kaldor, Nicholas. 1975. "Economic Growth and the Verdoorn Law–A Comment on Mr Rowthorn's Article." *The Economic Journal* 85 (340): 891–96.

Kaplan, Steven N. 1994. "Top Executive Rewards and Firm Performance: A Comparison of Japan and the United States." *Journal of Political Economy* 102 (3): 510–46.

Kato, Takao and Katsuyuki Kubo. 2006. "CEO Compensation and Firm Performance in Japan: Evidence from New Panel Data on Individual CEO Pay." *Journal of the Japanese and International Economies* 20 (1): 1–19.

Katzner, Donald W. 2008. *Culture and Economic Explanation: Economics in the US and Japan.* Routledge.

Maruyama, Nobuhiro and Hiroyuki Odagiri. 2002. "Does the 'Persistence of Profits' Persist?: A Study of Company Profits in Japan, 1964–97". *International Journal of Industrial Organization* 20(10): 1513-1533.

Mehrotra, Vikas, Randall Morck, Jungwook Shim and Yupana Wiwattanakantang. 2011. "Must Love Kill the Family Firm? Some Exploratory Evidence." *Entrepreneurship Theory and Practice* 35 (6): 1121–48.

Mehrotra, Vikas, Randall Morck, Jungwook Shim and Yupana Wiwattanakantang. 2013. "Adoptive Expectations: Rising Sons in Japanese Family Firms." *Journal of Financial Economics* 108 (3): 840–854.

Miller, Danny. 1991. "Stale in the Saddle: CEO Tenure and the Match Between Organization and Environment." *Management Science* 37 (1): 34–52.

Miller, Danny and Jamal Shamsie. 2001. "Learning Across the Life Cycle: Experimentation and Performance Among the Hollywood Studio Heads." *Strategic Management Journal* 22 (8): 725–45.

MOJ. 2006. "Koseki Tôkei" [Family Register Statistics]. Tokyo: Ministry of Justice. Available at: http://www.moj.go.jp/housei/toukei/toukei_ichiran_koseki.html [Accessed: July 5, 2018]

Mueller, Dennis C. 1977. "The Persistence of Profits Above the Norm." *Economica* 44(176): 369-380.

Nakazato, Minoru, Mark J. Ramseyer and Eric Rasmusen. 2009. "Public and Private Firm Compensation Compared: Evidence from Japanese Tax Returns." *Korean Economic Review* 25: 5–34.

Odagiri, Hiroyuki and Hideki Yamawaki. 1986. "A Study of Company Profit-Rate Time Series: Japan and the United States." *International Journal of Industrial Organization* 4(1): 1-23.

Saito, Takuji. 2008. "Family Firms and Firm Performance: Evidence from Japan." *Journal of the Japanese and International Economies* 22 (4): 620–46.

Shim, Jungwook. 2009. "Ketsuenshugi no heigai: Nihon no dozokukigyo no deeta o mochi'ita jisshobunseki. [The Existence of Nepotism: Evidence from Japanese Family Firms]." Center for Economic Institutions Working Paper Series. No 2009-4. Tokyo: Hitotsubashi University. Available from: http://cei.ier.hit-u.ac.jp/English/pdf/wp2009-4.pdf [Accessed: May 20, 2018].

Shishido, Zenichi, Noriyuki Yanagawa, Takuji Saito and Hokuto Dazai. 2014. "The Rising Son Under the Shadow of Company Communities: Do Japanese Family Firms Really Excel?" Law and Economics Workshop, UC Berkeley; Sep. 22, 2014 (Conference Paper). http://scholarship.law.berkeley.edu/law_econ/Fall2014/Schedule/5/ [Accessed May 18, 2015].

Smith, Brian F. and Amoako-Adu, Ben. 1999. "Management Succession and Financial Performance of Family Controlled Firms". *Journal of Corporate Finance*, 5(4): 341-368.

Stafsudd, Anna. 2006. "People Are Strange When You're a Stranger: Senior Executives Select Similar Successors." *European Management Review* 3(3): 177–189.

Toyo Keizai. 2012. *Nihon kaisha shi soran.* [*Japanese Company History*]. Toyo Keizai Publishing.

Tsubuku, Masako and Philip Brasor. 2017. "Resorting to Adoption to Avoid Inheritance Tax." *The Japan Times,* February 17. Available at: www.japantimes.co.jp/news/2017/02/11/business/resorting-adoption-avoid-inheritance-tax/ [Accessed November 20, 2017].

Wulf, Thorsten, Kati Roleder, Stephan Stubner and Jutta Miksche. 2011. "Performance Over the CEO Life Cycle: The Impact of Structural Power Creation Activities." *Problems and Perspectives in Management* 9 (4): 98–108.