1042-2587

Must Love Kill the Family Firm? Some Exploratory Evidence

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Family firms depend on a succession of capable heirs to stay afloat. If talent and IQ are inherited, this problem is mitigated. If, however, progeny talent and IQ display mean reversion (or worse), family firms are eventually doomed. Since family firms persist, solutions to this succession problem must exist. We submit that marriage can transfuse outside talent and reinvigorate family firms. This implies that changes to the institution of marriage—notably, a decline in arranged marriages in favor of marriages for "love"—bode ill for the survival of family firms. Consistent with this, the predominance of family firms correlates strongly across countries with plausible proxies for arranged marriage norms.

> [To] pass down the ability to command the resources of the nation based on heredity rather than merit . . . [is like] choosing the 2020 Olympic team by picking the eldest sons of the gold-medal winners in the 2000 Olympics (Warren Buffet, American financier).[1]

Introduction

If business acumen, presumably a combination of intelligence and talent, passed reliably from generation to generation, either genetically or environmentally, family firms would logically dominate economic activity. However, intelligence is presently thought, at most, only partly hereditary, rendering the persistent importance of family firms in many economies a puzzle.

Like hereditary monarchies, family businesses are vulnerable to a suboptimal succession problem. Top positions in business and government should ideally go to the most

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1. Quoted defending the U.S. inheritance tax in "Dozens of the Wealthy Join to Fight Estate Tax Repeal" by David Cay Johnston, *New York Times*, February 14, 2001, electronic edition. Inheritance tax rates are known to correlate inversely with family firm capitalization (Ellul, Pagano, & Panunzi, 2008).

DOI: 10.1111/j.1540-6520.2011.00494.x

talented from the largest feasible pool of potential candidates. Even were talent partially inherited, the general population almost certainly contains a more qualified successor than does the limited pool of the current chief executive officer's (CEO) progeny. The bigger the pool, the higher the likelihood it contains an extremely talented person, all else equal.[2]

A growing body of empirical evidence underscores this puzzle. Were IQ and business acumen not fully hereditary, insufficiently talented heirs eventually weaken chains of succession, leaving family firms uncompetitive *vis-à-vis* professionally managed firms. Economic selection should thus favor professional management. Yet family firms predominate in many economies (Fogel, 2006; La Porta, Lopez-de-Silanes, & Shleifer, 1999). Either business talent is more surely passed from generation to generation than general intelligence or another factor is at work.

Discrepancies between different studies showing different effects of family control on firm performance now appear resolved. In most of the developed world, large firms controlled by their founders outperform; those controlled by biological heirs underperform.[3] This laggard performance seems inconsistent with highly inherited business acumen. Consequently, other factors must be considered.

Certainly, in countries lacking sound property rights, transaction costs impede dealings between unrelated parties. A more talented professional CEO might not be preferable if his loyalty to the firm and its shareholders, including the founding family, is rendered suspect by weak legal rights for shareholders (see, e.g., Burkart, Panunzi, & Shleifer, 2003; La Porta et al., 1999) or by widespread corruption (Khanna & Palepu, 2000; Khanna & Rivkin, 2001). In such cases, a less talented son might be preferable to an outside agent-manager; and family firms might emerge as a second-best solution in the absence of dependable shareholder rights (Burkart et al.). Family firms then ought to be more widespread and long-lived in less developed countries, which is observed (Fogel, 2006). Consistent with this, family firms perform better in less developed economies (Khanna & Yafeh, 2007) and worse in more developed economies (Bennedsen, Nielsen, Pérez-González, & Wolfenzon, 2007; Morck, Wolfenzon, & Yeung, 2005; Villalonga & Amit, 2006). Without in any way disputing this reasoning, we offer another potentially complementary explanation.

We propose that family firms are an effective "second-best" solution where arranged marriages prevail and where people (in business families, at least) do not marry for love. This is because arranged marriages let business families select for talent and business purposes. We do not discard other rationales for arranged marriages, as in Bunkanwanicha, Fan, and Wiwattanakantang (2010), where the authors document how marriages allow families to build, sustain, and expand business and political connections in Thailand. Our main submission is that the practice of arranged marriages cleaves together business and family objectives in a manner that is more purposeful than the outcomes from "love" marriages. Our approach is consistent with the tenets of institutional theory as well (see, e.g., Greenwood & Hinings, 1996; DiMaggio & Powell, 1991; Scott, 1987; among others), where adaptations by organizations to cultural constraints leads to the adoption of institutional features that are long-lived, regardless of efficiency considerations. In our context, cultural imperatives might favor arranged marriage in family firms, and if selection for talent renders such firms competitive, they would persist.

2. This follows from the statistical theory of extreme values, wherein the probability of drawing at least one value above any prespecified threshold within the range of the distribution rises with the number of draws and approaches certainty as the number of draws approaches infinity (de Haan & Ferreira, 2006).
3. For a highly readable recent survey, see Bertrand and Schoar (2006).

Indeed, Landes (2006) concludes that arranged marriages have played a key role in the preservation, predominance, and longevity of business dynasties across the world. The sociology literature (e.g., Coontz, 2005; Westermarck, 1922) shows marriage for love to be a relatively recent and mostly Western phenomenon that arose with English Romanticism in the eighteenth and nineteenth centuries. For most of history, most of the world relied on parents to arrange the marriages of their children; and much of it still does. Strategically crafted arranged marriages are especially evident in the historical descriptions of many long-lived family firms—Stevenson and Wolfers (2008) posit that families, via marriage, play a vital role "filling in" where incomplete market institutions would otherwise hinder economic development. They argue that marriages internalize business alliances that may be subject *ex-post* opportunism in the absence of a well-functioning legal system. James (2006) describes marriages as the primary mechanism for perpetuating family enterprises in pre-twentieth-century Europe and across much of the rest of the modern world. James describes several cases of marriages designed entirely around the corporate objectives of European family firms.[4]

Given this, family firms should become less viable where arranged marriage is more completely forsaken in favor of marriage for love, and succession choices should become more fully divorced from biological heirs. Unfortunately, data on the prevalence of arranged marriages in different countries and over time are lacking, so this cannot be tested directly.

However, Hofstede (1980, 1991, 1994, 1998, 2001) uses survey results to construct cross-country data on various dimensions of culture that should arguably be closely related to marriage patterns. For example, arranged marriage should be more resilient in cultures that embrace social inequality more broadly. Cultures that devalue individual well-being in favor of family or group welfare are also arguably more resistant to marriage for love and more amenable to arranged marriages. Cultures in which traditional masculine power roles are more evident might likewise subject marriages to a patriarch's veto. Finally, cultures that more strongly discourage risk taking are arguably more resistant to change in general and thus to changing long-standing marriage patterns.

Our exploratory results show family firms to be more common where national cultures accept inequality more broadly, value the group or family more highly relative to the individual, or denigrate risk taking more thoroughly. Masculinity is unrelated to the incidence of family firms. These results are robust to controlling for per capita gross domestic product (GDP), so it is unlikely that our results reflect poorer countries having both more family firms and more traditional cultural norms.

We therefore tentatively propose that the spread of marriage for love helps undermine the family firm as a dominant business institution in many countries by depriving those firms of suitable heirs. Morck and Yeung (2004), Fogel (2006), and others show family firm dominance correlating with worse country economic and social outcomes: lower per capita GDP and GDP growth, worse social conditions, and the like. We speculate that cultural norms that sustain family firms might also impede talented potential entrepreneurs, thus locking in a stable state with lower overall economic and social outcomes.

Our paper also advances the broader research on the link between culture and economic development (see, e.g., Bertrand & Schoar, 2006, who show that countries with strong family ties tend to have lower per capita GDP). We welcome further research to clarify these issues; in particular, we welcome studies focusing on techniques for identifying causal links underlying the correlations between family firm dominance and cultural

4. Thus, James (2006) describes the German Franz Haniel arranging for his son to marry a daughter of the Belgian John Cockerills primarily to learn technological secrets of the Cockerill smelting plants.

proxies documented here. The rest of the paper is organized as follows. The next section reviews the relevant literature. The last two sections describe our empirical framework and findings, and our conclusions.

Arranged Marriage and Family Firm Dominance

Continued family dominance in business relies crucially on the capabilities of successive generations of heirs. This is by no means guaranteed, given the problematic role of genetics in transferring business acumen to the next generation. We explore the idea that marriages arranged to bring talent into the family, rather than motivated primarily by love, might perpetuate family governance. For example, arranged marriage might bring in highly capable sons-in-law (or daughters-in-law) who can take management roles in the family business; or sons- and daughters-in-law thought better able to foster talent in their children. Of course, arranged marriages might increase the odds of a family business surviving in other ways—for example, by cementing alliances with other business dynasties or connections with politically important families or individuals. Marriage for love, in contrast, risks burdening the family with talentless in-laws, inadequately raised grandchildren, and all manner of other problems. We cannot preclude the thesis that some business families may even be attempting to breed for talent, although we regard this hypothesis as overly speculative. We submit that arranged marriages allow an incumbent family patriarch to select marriage partners for his children based first on the needs of the family business. Given the absence of data on arranged marriages *per se*, we rely on measures of ambient cultural norms defensible as plausible proxies for the likely use of arranged marriages.

Our exploratory investigation relies on a series of premises: Business acumen is a form of intelligence, intelligence is not reliably transmitted from parents to children, the arranged marriage is not displaced by marriage for love in many countries, and family firms remain important in many countries. Given these premises, we investigate whether family firms and arranged marriages tend to be more important in the same countries. This reasoning also suggests investigating whether family firms perform relatively better or worse where arranged marriages likely persist more completely.

Business Acumen as a Dimension of Intelligence

Our first premise is that managerial acumen is a dimension of intelligence. This is an idea with a venerable intellectual history. Hayek (1941, p. 331) argues that a nation's wealth depends on its business leaders' superior "foresight." If they are blind to the future, they invest in inappropriate capital assets that changing circumstances soon render worthless. If they foresee unfolding events, they invest in appropriate assets whose value rise. It seems plausible that such foresight would require high intelligence.

Schumpeter (1912) casts entrepreneurs as critical to economic growth because they possess a rare creative ability to envision new products, processes, and opportunities. Although intelligence tests are likely poor gauges of creativity, the traits Schumpeter describes are plausibly analogous in the sense of passing unreliably from generation to generation. Thus, Schumpeter (1951) concedes that founding a great business dynasty might motivate entrepreneurs, but argues that such dynasties readily fall before other upstart entrepreneurs.

Intelligence is sometimes considered multidimensional, with IQ only one dimension. Emotional intelligence (Gardner, 1983) is especially popular in the leadership literature

(Cooper & Sawaf, 1997; Goleman, 1995), and social intelligence is also gaining advocates (Albrecht, 2006). Is seems plausible that high intelligence in these and other dimensions would help a CEO both predict future events to guide a great business well (Hayek, 1941) and creatively envision new business possibilities (Schumpeter, 1912).

The Inheritability of Intelligence or Talent

That intelligence might be partly hereditary is an old idea, raised in the mid-nineteenth century (Galton, 1869) and abused to justify eugenics (Galton, 1909) and ultimately genocide (Mastroianni, 2006). The thesis therefore remains charged, although not without advocates, most prominently the "bell curve" hypothesis of Herrnstein and Murray (1994). Children's test scores correlate positively, although imperfectly, with their parents' scores, but the underlying reasons are hotly disputed (Devlin, 1997; Fischer, 1996; Fraser, 1995; Jacoby, Glauberman, & Herrnstein, 1995; Kincheloe, Steinberg, & Gresson, 1996; Lynn, 2008; Montagu, 1999).

The central debate is whether this reflects a genetic transmission of intelligence or upbringings more conducive to intellectual development. This debate is augmented by disputes about how to measure intelligence, and even about whether or not it can be measured reliably.

A parallel "nature versus nurture" debate exists regarding family business. Galton's (1869, 1889) arguments linking genetically based intelligence to economic and social success are consistent with Taussig's (1930) finding that many important business leaders are the offspring of professionals and entrepreneurs, but Taussig posits parental training and inherited family contacts as preferred explanations. Similarly, the models of Becker (1981) and Becker and Tomes (1985) also reject genetics in favor of rational parental investment in children's human capital. Distinguishing these hypotheses is problematic (Casey, 1999).

However, the American tycoon Andrew Carnegie (1889) postulates a perverse "nurture effect" regarding family firms with his famous conjecture that "the parent who leaves his son enormous wealth generally deadens the talents of the son and leads him to lead a less useful and less worthy life than he otherwise would." Empirical work using tax returns shows that inherited wealth presages reduced productivity (Holtz-Eakin, Joulfaian, & Rosen, 1993), although this refers to large bequests in general, not control over family firms.

We need not take a position in either debate. We need not measure intelligence and do not. Nor do we care if the sort of intelligence required to run a great business is the same as that measured in IQ tests. We do not care whether this intelligence is hereditary via genes or childhood environment, only that its transmission is unreliable. Neither side in the debate posits intelligence being entirely hereditary. Rather, the debate pits a significant hereditary component against a negligible hereditary component. For example, Galton (1869) argues that one's characteristics are positively correlated with those of one's parents but "regress to mediocrity" so that a child's characteristics are less extreme (nearer the population mean) than are its parents' characteristics. Galton (1889) demonstrates this regression primarily with anatomical characteristics (eye color, height, and weight) but also studies individuals' "success" and "eminence."

Regardless of whether business intelligence is partly hereditary or not hereditary at all, selecting the next CEO from among the progeny of the current one is likely to yield a less "intelligent" successor than would result from searching across a broader candidate pool (Caselli & Gennaioli, 2006). Despite dispute over many issues, the literature on the inheritability of intelligence appears consistent with our thesis that intelligence is less than fully inherited.

The Persistent Importance of Arranged Marriage in Many Countries

Although love and marriage are now firmly associated in modern Western countries, their conjunction is relatively recent and geographically restricted. For most of human history, marriages were not about love or even primarily about the needs and desires of the bride and the groom. Rather, aided by relatives and matchmakers, parents arranged marriages. Indeed, we define an arranged marriage as one where mate selection is influenced by someone other than the marrying couple, especially by elder family members of the marrying couple. The exact custom surrounding arranged marriages varies greatly across cultures and countries and over time, with some cultures favoring a very mild form of arrangement where the marrying couple are simply given a chance to meet at an arranged event, to other cultures where the marrying couple do not see each other until after the marriage ceremony. For our purpose, what matters is that the marriage arrangement is done with an eye on mate selection compatible with the arranging family's wishes.

Moreover, marriage was not considered as a relationship between two individuals, but between two families—to create alliances and secure suitable in-laws for furthering economic and political ends.[5] As such, marriages were carefully planned and negotiated. For example, Coontz (2005) writes, "Until the late eighteenth century, most societies around the world saw marriage as far too vital an economic and political institution to be left entirely to the free choice of the two individuals involved, especially if they were going to base their decision on something as unreasoning and transitory as love." In fact, Coontz goes so far as to suggest that "For centuries, marriage did much of the work that markets and governments do today. It set up political, economic, and military alliances. It coordinated the division of labor by gender and age. It orchestrated people's personal rights and obligations in everything from sexual relations to the inheritance of property." Along this line, Kaplan (1985) argues that "from a broad historical perspective, love has had a rather weak association with—and has very rarely preceded—marriage." Kaplan also points out that dowries were common mechanisms for furthering political connections and economic alliances. These studies view arranged marriage as buttressing the social dominance of propertied classes throughout Western history.

Arranged marriages also help maintain family property within the extended families. For example, the House of Rothschild's success from the late-eighteenth into the early-twentieth century was due not only to the founding family's financial acumen but also to their innovative marriage strategies (Ferguson, 1998). The bank was organized into five branches in five countries headed by the five sons. Their marriages were strictly arranged with family members to cement family ties and preserve wealth within the family. Thus, Rothschild wealth accumulated within the family while other fortunes diffused through marriages.[6]

Supple (1957) documents the use of arranged and soft-arranged marriages among the German–Jewish Diaspora in the nineteenth- and early twentieth-century United States to cement business ties. Miller (1979) reports that of the 185 top business leaders at the beginning of the twentieth century in the United States, approximately 27% owed their position to kinship ties. Today, marriage for love is thought prevalent in Western cultures

5. Dissenting from this consensus, Mount (1982) argues that romantic love existed throughout history and that arranged marriages were not the universal norm sociologists believe them to have been. Arranged marriages were found mainly among the nobility and other elite such as the landed class, where convenience mattered more than love.

6. Endogamy, typically marriage to first cousins, remains extremely important in many Muslim cultures—presumably because the preservation of family wealth is a major objective in arranged marriages (Tabutin, Schoumaker, Rogers, Mandelbaum, & Dutreuilh, 2005).

and industrialized countries, with arranged marriage persisting elsewhere (e.g., Sternberg & Weis, 2008). For example, in India today, over 90% of marriages are arranged (Gautam, 2002). In Japan, nearly half of all marriages were arranged in the early 1970s.[7] Arranged marriages or *omiai* continued to be very popular through the 1980s, when one in four marriages was arranged; and although marriage for love became increasingly common in the 2000s, some 6.2% of 2005 marriages were still arranged.[8] A 1965 survey shows 80% of Koreans agreeing that parents strongly influence marital choice, and these attitudes persist into the 1980s (Goodwin, 1999). Hatfield and Sprecher (1995), interviewing 1,667 Americans, Russians, and Japanese, find about 75% of respondents willing to marry without love.

Marriages are still often arranged within extended families (such as between cousins or half-cousins) in some cultures, including traditional African and Arab societies (Goodwin, 1999). Many Muslim countries' legal systems strongly encourage arranged marriages. Pakistani law, based on Koranic verses requiring fathers to protect their daughters, forbids women from marrying without parental consent. Consequently, parents generally consider it their duty to marry their daughters into good families, and detailed background investigations of potential grooms from outside the family are expected (Shaw, 2001).

Many immigrant groups in the West continue to favor arranged marriage.[9] Eldering and Knorth (1998) argue that restrictive immigration policies in Western countries render arranged marriages especially popular as a means to bring relatives along. Religiously mandated endogamy and ethnic isolationism can also preserve arranged marriage customs in some immigrant communities. Thus, arranged marriages persist as a major social institution across much of Asia (Atal, 1992) and among ethnic minorities in Western countries, such as Ultra-Orthodox Jews (Rockman, 1994).

In summary, barely a century ago, marriage for love swept across the Western world. Before that, and in other cultures now, arranged marriages pursue political, economic, and other nonamorous goals. Simmons, von Molke, and Shimizu (1986) argue that traditional cultures with strong family values are especially apt to prefer arranged marriage over marriage for love. Arranged marriages are also likely to find support in high caste or elite subcultures, where family money, power, and prestige loom larger.

A growing economic literature reveals parental influence in marriages. Bisin and Verdier (2000) and Bisin, Topa, and Verdier (2004) show that parents' propensity to expose their children to people of the same religion influence marriage choices, and Fernandez, Fogli, and Olivetti (2004) show empirically that a man raised by a working mother is more likely to marry a working woman. Buunk, Park, and Dubbs (2008) examine evolutionary arguments linking arranged marriages to parental investment.

Our purpose is not to portray a singular strain of arranged marriages, doctrinaire in its practice and devoid of love for the partners, all for the sake of perpetuating the family business. Indeed, various forms of arranged marriages exist across countries, and certainly such norms have evolved over time to take into account contemporary sensibilities. Further, within a family, not all siblings need pursue a strictly businesslike ethos in mate

7. Institute of Population and Social Security Research in Japan—see http://www.ipss.go.jp.
8. Some researchers peg the incidence of arranged marriages in Japan a little higher. For example, Applbaum (1995) reports that 25–30% of Japanese marriages are arranged at present.
9. Second-generation female Turkish and Moroccan immigrants in the Netherlands are often "given away" to their fathers' friends or relatives (Sterckx & Bouw, 2005). Menon (1989) reports half of Indian immigrants in America relying on arranged marriages, and according to Talbani and Hasanali (2000), one in four second-generation South Asian immigrants in North America report that their parents would likely arrange their marriage.

selection. Our point is simply to note that the more arranged-marriage like norms in a country, the less likely is the disappearance of family dominance in business.

The Persistent Importance of Family Firms in Many Countries

Our second premise is that family firms are indeed important. Recent empirical work confirms Chandler's (1977) prophesy that professional management would displace family business remains unfulfilled in most countries. Family firms dominate the economies of Brazil (Da Silveira, Leal, Carvalhal Da Silva, & Barros, 2007), Chile (Khanna & Palepu, 1999), India (Khanna & Palepu, 2000; Khanna, Palepu, & Morck, 2005), Korea (Lim, Haggard, & Kim, 2003), Sweden (Högfeldt, 2005), and Thailand (Bertrand, Johnson, Samphantharak, & Schoar, 2008; Chutatong, Kali, & Wiwattanakantang, 2006). They remain important in Canada (Morck, Percy, Tian, & Yeung, 2005) and, to a lesser extent, the United Kingdom (Casey, 1999) and the United States. Family business remains the predominant organizational form across Europe (Barca & Becht, 2001; Faccio & Lang, 2002) and East Asia (Claessens, Djankov, & Lang, 2000), and throughout the developing world (Khanna & Yafeh, 2007; Morck, Wolfenzon et al., 2005).

Most remarkably, this persistence continues despite evidence that businesses run by descendents of their founders underperform. Although recent studies report "family firms" outperforming other firms (e.g., Anderson & Reeb, 2003), these findings turn on including founder-controlled firms—like Apple Computers, Google, and Microsoft—among family firms. If the term is applied only to firms in which a second or subsequent generation takes control, family firms significantly underperform in Canada (Morck, Stangeland, & Yeung, 2000), Denmark (Bennedsen et al., 2007), the United Kingdom (Bloom & van Reenen 2007), and the United States (Miller, Le Breton-Miller, Lester, & Cannella, 2007; Villalonga & Amit, 2006).

Event studies show family succession clearly "causing" depressed performance expectations. Firms' stock prices fall significantly when a retiring CEO is replaced by his son (Perez-Gonzalez, 2006; Smith & Amoako-Adu, 2005), although the effect is mitigated if the son has an elite education—presumably indicating above-average talent. Bennedsen et al. (2007) utilize a well-designed difference-in-difference analysis that also clearly indicates inherited control "causing" weak performance, rather than the converse.

Nonetheless, family firms appear to perform relatively better in less developed economies (Khanna & Palepu, 2000; Khanna & Yafeh, 2005, 2007; Morck, Wolfenzon et al., 2005). This is consistent with the thesis that family firms are a second-best solution in economies with weak institutions (Burkart et al., 2003).[10]

Data and Empirical Design

We now investigate the association between the dominance of family firms and the extent of arranged marriages in different countries. In the regression analysis, we also control for the level of general economic development of each country. Our sample consists of 41 countries, listed in Appendix 1.

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10. Another possibility cannot be precluded: Well-connected old-moneyed families use their substantial political influence to augment their firms' performance by tilting the playing field in their favor (Faccio, 2006; Faccio, Masulis, & McConnell, 2006). This is consistent both with their firms' relatively good performance and with their countries' relatively poor performance (Morck & Yeung, 2004). Our hypothesis is that arranged marriage is one factor among many and in no way contests the potential validity of other explanations.

Dependent Variables: *Family Business*

Our *family firm* dominance index is from Fogel (2006), and measures the fractions of 41 countries' 10 largest businesses (firms or business groups) that are controlled by old-moneyed (second generation or higher) families as of 1996. Fogel traces intercorporate chains of control and consolidates firms into business groups in countries where pyramiding or other control enhancement mechanisms extend a business family's control over more than one firm, and she defines family businesses as those whose top insiders are the heirs of their founders. Her data include listed and unlisted firms. This is important, since listed firms are considerably rarer in some countries than in others (La Porta et al., 1999).

Fogel (2006) then constructs two versions of her index: one weighting the top 10 businesses equally and another weighting them by total workforce. The latter thus measures the fraction of the total workforce of the top 10 firms directed by old-moneyed families. In some countries, such as Australia, Denmark, the Netherlands, the United States, and the United Kingdom, only a very small percentage of top 10 businesses are controlled by old-moneyed families; in others, such as Thailand, Malaysia, Mexico, Peru, Pakistan, Greece, and Turkey, all the top 10 are family controlled. Most countries fall in between. Finally, we note that our family dominance index does not allow us to test the dynamic changes in the identity of the families controlling businesses—hence, our tests implicitly assume that family identity is stable over our sample period.

Independent Variables

Proxies for Arranged Marriage. To proxy for arranged marriages adopted by different countries, we use the cultural values indexes that were constructed by Hofstede (1980, 1991, 1994, 1998). These cultural dimension indexes are based on the two survey rounds from 72 countries that were conducted between 1967 and 1973, subsequently updated through the 1980s. The respondents were IBM employees in the initial survey but included commercial airline pilots and students in the 1980s updates. The data we use are the latest survey that was conducted in 1994. These scores are available online at http://www.geert-hofstede.com/. The main cultural value measures Hofstede distills from these surveys are as follows.

Power Distance. This variable measures the extent to which social inequality is tolerated, even endorsed, by the population overall. Ranging from 11 to 104, it takes higher values where cultural norms legitimize more extreme social differences—as, for example, in Arab, Latin, and South East Asian countries. Countries with lower Power distance scores—for example, Northern Europe and Israel—have cultures that more adamantly assert social equality.

Hofstede finds higher Power distance cultures to more consistently exalt obedience, authority, conformity, supervision, and social hierarchy. In these countries, children are taught to honor and obey their parents and elders, and to continue doing so as adults, and conformity is considered an indispensable virtue. In contrast, in low *Power distance* cultures, children are encouraged to make decisions, pursue their own welfare, and take responsibility for their own decisions.

We propose that a higher Power distance corresponds to a greater propensity for children to accept their parents' choices in mate selection. Consistent with this, Squire (2008) and other gender studies scholars link arranged marriages to authoritarian patriarchal cultures. Also consistent with this proposal, studies in psychology find people living in higher Power distance cultures more prone to suppressing positive emotions (as well as negative emotions) because the social expression of excessive positive affect could mean lack of deference (Basabe et al., 1999). This suppression plausibly renders marriage for love less important.

Individualism. Using survey responses, Hofstede constructs an Individualism score, which takes high values in America, Australia, Canada, and Western Europe, where people tend to place their welfare as individuals above the welfare of collectives to which they belong. In contrast, the Individualism index takes low values in Latin America, South Asia, and East Asia, where people's responses indicate a willingness to subordinate their welfare as individuals to that of collectives to which they belong—such as families, extended families, castes, tribes, sects, or nations. The family, or extended family, is generally the most important of these.[11]

In low Individualism countries, individuals are apt to be defined primarily by their contribution to group welfare. Hence, they attach great import to the effects of their behavior on the group, and group members are often deeply involved in each others' lives. In contrast, high Individualism societies laud independence and self-reliance, and people are motivated to develop their individual talents in a search of personal fulfillment (Markus & Kitayama, 1991; Ting-Toomey, 1991).[12]

The psychology and social sciences literatures associate individualism with marriage for love. In a study of 117 countries, Lee and Stone (1980) find a strong link between family structure and marriage. Todd (1985) observed marriage for love to be far rarer in countries with extended family systems than in countries characterized by nuclear families, in which people are more individualistic. Most directly, a survey by Levine, Sato, Hashimoto, and Verman (1995) finds students from more collectivistic cultures—such as India, Thailand, and the Philippines—placing less emphasis on love as the basis for marriage than students from more individualistic countries—such as America, Australia, and Britain. Finally, the children of immigrants from collectivist cultures tend to accept marriages arranged by their parents and tend not to practice dating (Lee, 1988; Lipson & Miller, 1994; Segal, 1991; Stopes-Roe & Cochrane, 1988).

This broader acceptance of arranged marriage in lower Individualism cultures perhaps reflects a lesser regard for marital satisfaction via psychological intimacy or personal sharing as an objective (Ting-Toomey, 1991). Rather, accepting an arranged marriage is part of one's unavoidable duty to one's family. Brides are selected for good nature and grooms for status (Dion & Dion, 1983). In contrast, highly individualistic cultures validate personal feelings and the quest for individual fulfillment. This validates love as a foundation of marriage and necessitates that marriage be a personal decision by the couple (Triandis, 1995). Given these findings, lower values of the Individualism index plausibly correspond to more arranged marriages.

Gender Differentiation. We use Hofstede's Masculinity–Femininity index, which contrasts the emotional roles expected of men and women, to gauge the extent of Gender differentiation in different cultures. Countries with higher Gender differentiation scores—such as Austria, Japan, Italy, Switzerland, and Venezuela—assign males and females

11. See Hofstede at http://www.geert-hofstede.com/hofstede_brazil.shtml.
12. Oyserman, Coon, and Kemmelmeier (2002, p. 44) points to Individualism as a central dimension of culture, stating that ". . . the greatest strength of the IND-COL framework is its theoretical parsimony" and adds that the Individualism-Collectivism framework provides ". . . a powerful explanatory tool for understanding the variability in the behavior of individuals in different parts of the world."

more starkly different roles. Males are expected to be tougher and more assertive—more macho—and women, assigned more limited rights, are expected to be more modest and tender. Lower Gender differentiation cultures—such as Denmark, Sweden, Norway, and the Netherlands—distinguish gender roles less sharply and place more similar expectations on men and women.

Fiske, Markus, Kitayama, and Nisbett (1998) argue that higher Gender differentiation cultures are less apt to value romanticism. This suggests a link between high Gender differentiation indexes and arranged marriages; however, Collins (1975) is unable to find such a relationship and argues that arranged marriages tend to occur in higher Gender differentiation cultures only if large extended family structures are also pervasive. This is plausible, for greater Gender differentiation might permit males more freedom in choosing a mate but still demand daughters' acquiescence to the interests of the family. In such cultures, girls might thus accept their parents' choice of a partner, while men might marry for "romantic" love (Dion & Dion, 1983). Indeed, the macho ideals of Latin American culture have been linked to romantic notions of chivalry (Collins, 2001). Overall, however, greater gender differentiation portends a more conservative culture and would seem to lean toward a higher incidence of arranged marriage.

Risk Avoidance. This index gauges the extent to which unknown situations are perceived as threatening. Cultures with high Risk avoidance scores are less tolerant of uncertainty, differences in opinion, and change. High Risk avoidance cultures encourage people to minimize ambiguity and hence tend to favor written laws and rules. These cultures are, virtually by definition, more conservative in general and thus less apt to forsake traditional institutions of any kind, including arranged marriage.

The Risk avoidance index is higher in countries where survey responses reveal cultural norms that devalue various forms of risk taking. The highest Risk avoidance country in our sample is Greece, with Portugal, Belgium, Japan, and Peru following in that order. Our lowest Risk avoidance country is Singapore, followed in declining order by Denmark, Hong Kong, Sweden, and Ireland.

We note one caveat here. We are interested in arranged marriage norms among the business elite of a country. This clique may well be culturally disconnected from the average cultural norms of that country. Therefore, relating the average cultural norms of a country to the prevalence of arranged marriages among the business elite may be unwarranted. Two factors work to mitigate such a concern. First, our results depend on the relative ranking of cultural attributes across countries. So long as the within-country variance in cultural norms is small compared with differences across countries, the use of average cultural proxies for a country is fine. Second, we note that the cultural proxies employed here are obtained from Hofstede's surveys. These surveys were conducted mainly on employees of large multinational corporations. The survey participants form an elite cross-section of society in these countries and are more likely to resemble the business elites than the average person. That is, the cultural norms of an IBM employee in India will share more with the business elites in Mumbai (language, education, living proximity, etc.) than with, say, his rural compatriots.

Correlation of Hofstede Culture Values with Other Culture Surveys. A potential criticism of the Hofstede culture values survey is that the respondents form a professionally similar group (e.g., IBM employees in the first round of surveys). This can result in biases in the survey responses. We note two features that make such a potential bias less critical in our study. First, to the extent that Hofstede respondents constitute a similar socioeconomic group across countries, their values ought to be convergent, and any persisting differences that we find are therefore more likely to originate in country-level differences in values. Second, surveys on cultural values by other researchers, such as Schwartz (1994), find agreement with many of the key survey values in Hofstede. For instance, Nieves and Mujtaba (2006, table 1.3) report a significant correlation between Hofstede's Power distance measure and Schwartz's Hierarchy measure, and between Hofstede's Individualism measure and Schwartz's Affective autonomy measure (positive self-experiences). Schwartz himself validates many of Hofstede's culture dimensions: In particular, he finds a strong positive correlation between Hofstede's Individualism and his own dual Autonomy measures, and between Hofstede's Power distance measure and his own Collectivism measure. We believe that these findings imply that using other survey responses as instruments is unlikely to alter our main findings in this study.

Moreover, for the purposes of our study, it is important to find cultural correlates of economic activity, given that our ultimate aim is to throw light on the predominance of family firms in an economy. To this end, work by Gouveia and Ros (2000) shows that Hofstede's culture value measures display a stronger correlation with macroeconomic variables (such as GDP) than with Schwartz's scores (which correlate more strongly with macrosocial indicators such as human development and literacy). Basabe and Ross (2005) also find similar correlations supporting a strong link between Hofstede's Individualism and GDP.

Hofstede Culture Values and Marriage Norms and Preferences. A related issue is the extent to which the Hofstede measures correlate with arranged marriage norms. Extant literature is sparse on direct empirical evidence surrounding this issue, but there are several papers that attest to the validity of the Hofstede values in our study. Buss (1989) surveys more than 10,000 marriages across 37 countries and finds that Hofstede's individualism variable displays a strong negative correlation with bridegroom preferences (in brides) for chastity, wealth, and age difference, while Hofstede's masculinity measure displays a strong positive correlation with these preferences. To the extent a preference for chastity and age difference are stronger in countries with a tradition of arranged marriages, Buss's survey is consistent with our thesis that Hofstede's culture values are reasonable proxies for arranged marriage norms and preferences.

Similarly, Levine and colleagues (1995) administer a questionnaire to male and female undergraduate students in 11 countries. Specifically, they ask the following question directly related to preference for a love marriage: *If a man (woman) had all the other qualities you desired, would you marry this person if you were not in love with him (her)?* The yes responses ranged from a low of 4% in the United States to over 50% in Pakistan. Indeed, the proportion of yes responses correlated strongly with Hofstede's individualism measure—the strength of the correlation was stronger than between GDP per capita and Individualism. Levine et al. conclude that individualist cultures place a stronger emphasis on love as a basis for mate selection than collectivist cultures do.

Hofstede himself finds that when asked the question "*things which some people think makes for a successful marriage*," the response rate of "*living apart from the in-laws*" displayed a strong positive correlation with individualism, whereas the response rate of "*shared religious belief*" and "*adequate income*" displayed a strong negative correlation with individualism. Similarly, Dion and Dion (1983, 1996) find that societies that value individualism highly also rate the importance of love in marriages very high. Indeed, children of immigrants from collectivist countries continue to undervalue love in marriages even in their adopted individualist country. Similarly, and perhaps not surprisingly, Lee and Stone (1980) analyze data from 117 societies and find that societies with arranged marriage norms scored low on the importance of love, while societies with autonomous mate selection marriage norms scored high on the love scale. Supporting this evidence, Medora, Larson, Hortacsu, and Dave (2002) compared respondents from India (with a high rate of arranged marriage) and the United States, and found that the Indian respondents scored lower on romanticism scores compared with their U.S. counterparts.

The studies cited here lend credence to our assertion that the Hofstede culture values, especially individualism, power distance, and masculinity, are useful proxies for separating arranged marriage norms from autonomous mate selection norms, and further that the Hofstede culture values are not an artifact of particular sampling methods.

Empirical Findings

General Patterns in the Data

Panel A of Table 1 presents standard descriptive statistics of the variables described earlier, and Panel B displays their simple correlation coefficients with each other.

Panel A shows family businesses providing an average of 61% and a median of 70% of all the jobs provided by the top 10 businesses or business groups in the typical country, indicating that families control most of the large corporate sectors of most of the countries surveyed by Hofstede. All four cultural values exhibit wide dispersion, allowing for a rich cross-sectional examination of linkages between family business dominance and cultural norms.

Panel B shows a significant correlation between a greater predominance of large family business and a greater acceptance of inequality, less individualism, and greater risk avoidance. The only cultural factor not correlated with Family business is Gender differentiation. While Individualism and Power distance are significantly correlated, Gender differentiation and Risk avoidance appear uncorrelated with other cultural attributes. The second panel further reveals all the cultural measures, save Gender differentiation, to correlate significantly with general economic development, broadly supporting the findings of Tang and Koveos (2008). Before proceeding to a more complicated statistical analysis, it is useful to examine these correlations in more detail.

Figure 1 plots family business dominance on the vertical axis against Power distance, our measure of general social acceptance of inequality, on the horizontal axis. An ordinary least squares (OLS) regression of the former on the latter is represented by the solid line, and observations for each country flagged by the abbreviations listed in Appendix 1. The graph shows a clear positive relationship—family business is more prevalent where inequality is more socially acceptable.

Closer inspection shows high-income countries inhabiting the lower-left corner, with low family ownership and low Power distance scores, and low-income countries inhabiting the upper-right corner, with high family ownership and high Power distance scores. This suggests general economic development might provide a common factor behind the two variables on the axes. The graph also reveals two interesting clusters of outliers—family businesses predominate in Austria, Israel, and Sweden despite inequality being socially unacceptable, but do not predominate in Japan and Singapore despite a general acceptance of inequality.

Figure 2 plots family business dominance against Individualism, the second of the cultural variables described earlier. Countries whose cultures allow greater individualism are clearly less conducive to large family businesses, while countries with more collectivist norms clearly favor large family businesses. Again, higher-income countries cluster

Table 1

Descriptive Statistics and Correlation Coefficients of Main Variables

Panel A. Descriptive statistics

	Mean	Median	SD	Minimum	Maximum
Family firms	0.607	0.699	0.347	0.000	1.00
Power distance	52.4	55.0	21.2	11.0	104
Individualism	49.5	48.0	24.9	13.0	91.0
Gender differentiation	50.0	52.0	18.9	5.00	95.0
Risk avoidance	63.7	65.0	24.1	8.00	112
Log GDP per capita	9.43	9.75	0.732	7.63	10.3

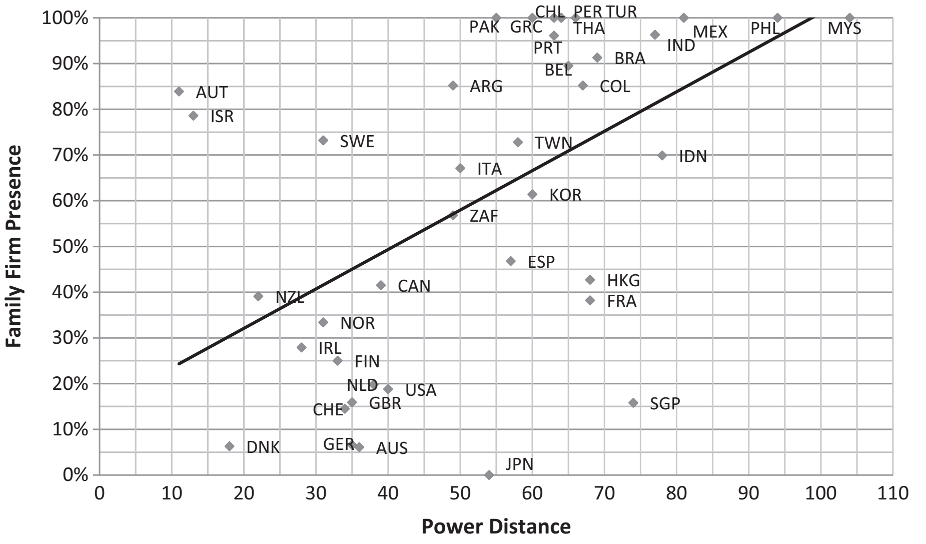
Panel B. Simple correlation coefficients

	Power distance	Individualism	Gender differentiation	Risk avoidance	Log per capita GDP
Family firms	0.546 (0.00)	–0.639 (0.00)	–0.036 (0.82)	0.455 (0.00)	–0.706 (0.00)
Power distance		–0.671 (0.00)	0.124 (0.44)	0.149 (0.35)	–0.596 (0.00)
Individualism			–0.012 (0.94)	–0.281 (0.07)	0.609 (0.00)
Gender differentiation				0.147 (0.36)	–0.073 (0.65)
Risk avoidance					–0.169 (0.29)

Family firms is the fraction of the top 10 business or business groups, weighted by number of employees, controlled by old-moneyed families. Power distance measures the extent to which social inequality is tolerated and endorsed. Individualism measure the extent individuals value their own welfare above that of collectives to which they belong. Gender differentiation is the magnitude of differences between male and female responses. *Risk avoidance* refers to a preference for the status quo. Log per capita GDP is the logarithm of gross domestic product in U.S. dollars at purchasing power parity. Appendix 1 lists the 41 countries included.
GDP, gross domestic product.

Figure 1

Ordinary Least Squares Regression of Family Firms on Power Distance (Slope Coefficient = 0.009; $p < 0.001$)



Family firms is the fraction of the top 10 business or business groups, weighted by number of employees, controlled by families, and is plotted against Power distance scores from Hofstede's website (http://www.geert-hofstede.com/hofstede_dimensions.php). Appendix 1 lists the abbreviations and names of the 41 countries included.

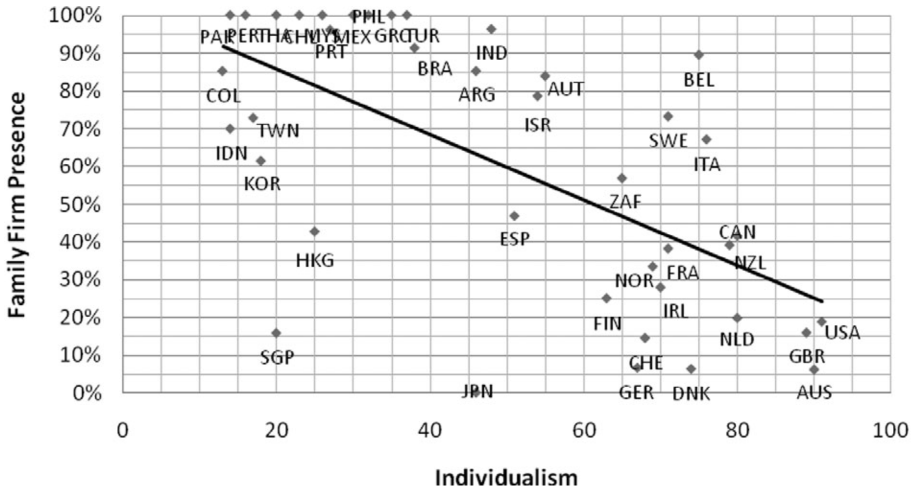
in the high individualism–low family business corner of the graph, while low-income countries cluster in the low individualism–high family business corner. Again, some of the most interesting countries are outliers: Developed East Asian countries (Korea, Hong Kong, Singapore, and Japan) exhibit markedly few large family businesses, given their relatively low individualism scores, and Sweden (along with a few other European countries) posts remarkably high family business control levels, given that society's seeming embrace of individualism.

Figure 3 reveals no immediately apparent relationship between Gender differentiation and the predominance of large family businesses. Countries in which genders are treated quite equally, like Sweden and the Netherlands, exhibit vastly different degrees of family control, as do countries in which gender differentiation is greatest, like Mexico and Japan. No countries are clear outliers, and no nonlinear relationship is evident either. It is possible that the gender differentiation proxy is rendered noisy because the effect of gender differentiation is conditional on family structure, as conjectured by Collins (1975). Furthermore, cultures that score high on gender differentiation may well allow females considerable choice (or at least veto powers) over mate selection.

Fiske et al. (1998) argue that higher Gender differentiation cultures are less apt to value romanticism. This suggests a link between high Gender differentiation indexes and arranged marriages; however, Collins (1975) is unable to find such a relationship and argues that arranged marriages tend to occur in higher Gender differentiation cultures only if large extended family structures are also pervasive. This is plausible, for greater Gender differentiation might permit males more freedom in choosing a mate but still demand daughters' acquiescence to the interests of the family.

Figure 2

Ordinary Least Squares Regression of Family Firms on Individualism (Slope Coefficient = –0.009; $p < 0.001$)



Family firms is the fraction of the top 10 business or business groups, weighted by number of employees, controlled by families, and is plotted against Individualism scores from Hofstede's website (http://www.geert-hofstede.com/hofstede_dimensions.php). Appendix 1 lists the abbreviations and names of the 41 countries included.

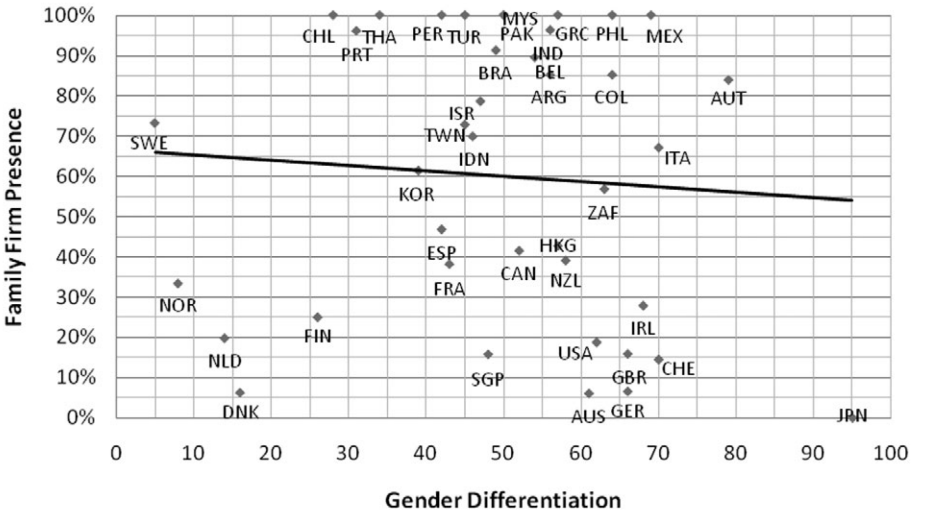
Finally, Figure 4 plots Risk avoidance against Family firms to reveal a clear upward sloping pattern, indicating that large family businesses are more common in countries whose cultures devalue risk taking. While high-income economies populate the low Risk avoidance–low Family firm corner of the graph, the high Risk avoidance–high Family firm corner contains a mix of high- and low-income countries—like Belgium and Peru. This suggests that something other than general cultural differences between high- and low-income countries is at work. Also, the countries not lining up well with the general trend do not cluster geographically: Malaysia and Sweden are the most extreme cases of low risk avoidance and high family control, while France and Japan are the most extreme examples of low family control and high risk avoidance.

Regressions

These graphs suggest that large family businesses are more dominant in countries whose cultures value collective welfare over individual welfare and devalue risk taking. These correlations are consistent with the correlations between family ties (measured as the first principal component of the family ties variables from the World Values survey) and the control of the corporate sector by the top five families in 19 countries documented in Bertrand and Schoar (2006). The graphs relating family business predominance to the acceptance of inequality and to gender differentiation are less clear-cut. However, Fogel (2006) shows family business dominance and GDP per capita are inversely related, and Panel B of Table 1 shows our cultural variables to be related to economic outcomes too. Clarifying the statistical link between family business and cultural factors thus requires controlling for general economic development.

Figure 3

Ordinary Least Squares Regression of Family firms on Gender Differentiation (Slope Coefficient = –0.001; p = 0.822)



Family firms is the fraction of the top 10 business or business groups, weighted by number of employees, controlled by families, and is plotted against Gender differentiation scores from Hofstede's website (http://www.geert-hofstede.com/hofstede_dimensions.php). Appendix 1 lists the abbreviations and names of the 41 countries included.

We therefore next run regressions of the form

$$\text{Family Firm} = a_0 + a_1 \times \ln(\textit{past per capita GDP}) + \mathbf{b} \cdot \mathbf{z} + \varepsilon \qquad [1]$$

The dependent variable is always Family firms, our measure of the extent of old-moneyed family control over a country's top 10 businesses or business groups (see Fogel, 2006; actual data for this variable are from 1996), and the logarithm of the country's per capita GDP (in 1980,[13] converted to U.S. dollars based on purchasing power parity) is included as a control variable. The independent variables of interest are represented by the vector z, which contains one or more of Power distance, Individualism, Gender differentiation, and Risk avoidance or interactions involving these variables. The ε are regression residuals and the estimated parameters are the intercept a_0, the coefficient of the control variable a_1, and a vector of coefficients on cultural factors, **b**.

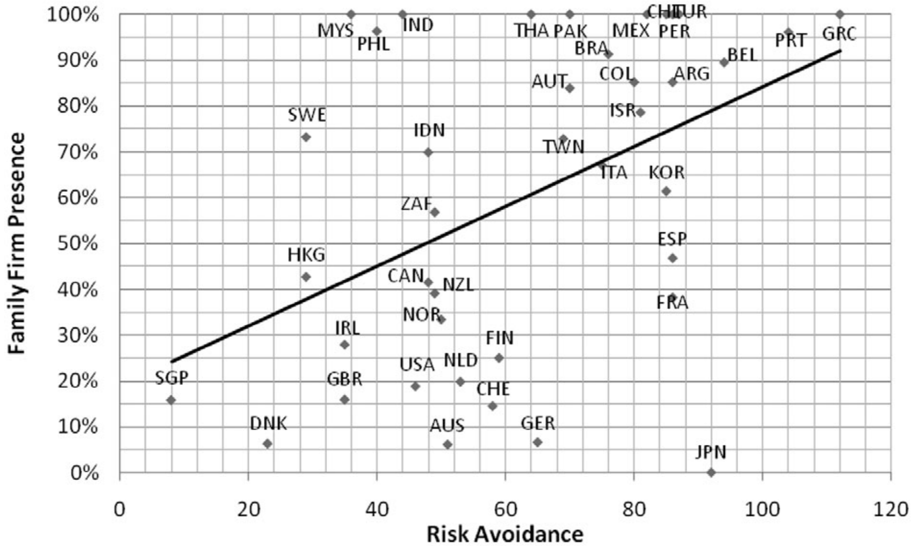
Table 2 suggests that high Risk avoidance, followed by Individualism, *are* the most important cultural correlates with extensive family control over a country's big business sector. The table regresses family control over big business on our various culture measures, one at a time and together, while controlling for per capita GDP.

First, comparing specifications 2.1 and 2.2 shows controlling for per capita GDP to render Power distance insignificant, confirming that the pattern in Figure 1 is indeed representative of high-income countries being both highly individualistic and unsupportive

13. We also use contemporaneous GDP estimates from 1996 and find that the main results are unchanged. However, we feel that the GDP estimate from 1980 is a more exogenous control variable since the GDP in 1996 may be influenced by the dependent variable.

Figure 4

Ordinary Least Squares Regression of Family Firms on Risk Avoidance (Slope Coefficient = 0.007; $p = 0.003$)



Family firms is the fraction of the top 10 business or business groups, weighted by number of employees, controlled by families, and is plotted against Risk avoidance scores from Hofstede's website (http://www.geert-hofstede.com/hofstede_dimensions.php). Appendix 1 lists the abbreviations and names of the 41 countries included.

of family control, and of low-income economies being both more collectivist and accepting of family control. An ambient cultural disapproval of inequality is associated with less family control of big business, but this is because such an ambient culture is statistically correlated with poverty, which is statistically correlated with family control over an economy's big business sector.

Second, contrasting specification 2.3 against 2.4, and 2.7 against 2.8 shows Individualism and high Risk avoidance, respectively, to remain highly significantly correlated to family business dominance after adjusting for the level of family control predicted by a given level of general economic development. This suggests that these cultural variables capture independent effects. Specifications 2.5 and 2.6 show that adjusting for per capita GDP fails to expose any hidden relationship between Gender differentiation and family business dominance.

Finally, specifications 2.9 and 2.10 collect all our cultural variables in one regression and then check the effect of controlling for per capita GDP. Only Risk avoidance remains significant in the specification with all variables, likely due to multicollinearity among the cultural measures documented in Table 1, Panel B. While Power distance and Individualism remain significant in the presence of Risk avoidance in specification 2.9, these two variables fade when exposed to per capita GDP, in specification 2.10. All the even-numbered specifications in the table reveal a highly significant negative correlation between the dominance of family firms and per capita GDP, confirming earlier work by Morck and Yeung (2004) and Fogel (2006), and showing that this relationship is not driven

Table 2

Ordinary Least Squares Regression of Family Dominance on Cultural Value Dimensions

Specification	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	2.11	2.12
Intercept	0.140	1.869	1.038	2.029	0.645	2.703	0.187	2.235	0.438	1.701	0.163	1.604
	(0.268)	(0.004)	(0.001)	(0.001)	(0.001)	(0.001)	(0.194)	(0.001)	(0.109)	(0.002)	(0.097)	(0.002)
Power distance	0.009	0.005							0.004	0.003		
	(0.001)	(0.071)							(0.100)	(0.306)		
Individualism			–0.009	–0.006					–0.005	–0.001		
			(0.001)	(0.011)					(0.026)	(0.361)		
Gender differentiation					–0.001	–0.001			–0.002	–0.002		
					(0.822)	(0.870)			(0.305)	(0.306)		
Risk avoidance							0.007	0.006	0.005	0.006		
							(0.003)	(0.000)	(0.010)	(0.001)		
Combined											0.004	0.003
											(0.000)	(0.001)
Per capita GDP		–0.176		–0.134		–0.242		–0.239		–0.163		–0.153
		(0.006)		(0.037)		(0.001)		(0.001)		(0.010)		(0.005)
Adjusted R-sq	27.8%	39.7%	39.3%	44.5%	–2.4%	34.3%	18.6%	54.9%	48.3%	56.5%	39.8%	50.0%

The dependent variable is Family firms, the fraction a country's top 10 businesses or business groups controlled by old-moneyed families. Independent variables include one or all of the following: Power distance measures the extent to which social inequality is tolerated and endorsed. Individualism measure the extent individuals value their own welfare above that of collectives to which they belong. Gender differentiation is the magnitude of differences between male and female responses. Risk avoidance refers to a preference for the status quo. Combined refers to an equally weighted average of the four cultural variables. Per capita GDP is the logarithm of 1980 GDP in U.S. dollars at purchasing power parity. Probability levels for rejecting the null hypothesis of a zero coefficient are in parentheses. Appendix 1 lists the 41 countries included.
GDP, gross domestic product.

solely by cultural factors locking in both poverty and family control.[14] Finally, we note that the previously mentioned correlations do not necessarily imply causality, since both the cultural norms in a country and family dominance in business may be driven by other factors rooted in history. Our main point is to document the association of cultural norms and family business dominance—we leave the determination of causality to future work (such research will need strictly exogenous instruments to identify the cause and effect in this relation; perhaps one place to look for such instruments is a seismic change event in the cultural history of a country).

Finally, specifications 2.11 and 2.12 employ a variable called Combined. This is the sum of the four cultural proxies (Combined = PDI + MAS + UAI − IND). We find that Combined is significantly positively associated with family dominance, indicating that conservative cultures that are more likely to favor arranged marriage norms are associated with greater family firm dominance.

We also note that a country's legal institutions may influence family capital, and include a legal origin dummy in the previously mentioned regressions. Including a legal origin dummy shows that French civil law-origin countries are more likely to have family

14. We also repeat the regressions in Table 2 using the Autonomy and Collectivism variables from Schwartz's (1994) culture survey. Autonomy produces a coefficient ($p = 0.09$) that is similar to Hofstede's Individualism—this is not surprising since Autonomy and Individualism are significantly positively correlated. Schwartz's Collectivism variable is not significant in explaining family firm dominance.

capitalism compared with English common law countries, reproducing the results in La Porta et al. (1999). The statistical significance of the cultural proxies we use remains unchanged with the exception of Power distance, which loses its significance in one of the two regression specifications. These results are not tabulated in the paper but are available from the authors upon request.

In the previous analysis, outliers with extreme influence were identified using Cook's distance. In the first three specifications, one observation was dropped based on Cook's distance criterion. We have also estimated the same regressions with all observations, and get very similar results, albeit with slightly weaker significance as would be expected.

A potential issue with our inference is that cultural values are caused by changes in economic performance. While this is certainly plausible, we caution against such a reverse causality since cultural values as documented in Hofstede's surveys, or as documented in several waves of World Values Surveys, have shown remarkable stability in the face of economic progress. For instance, Hofstede (2001) argues that "national cultural value systems are quite stable over time." Cultural persistence is further supported by Inglehart and Baker (2000). Guiso, Sapienza, and Zingales (2005) find that current country-level differences in cultural variables related to interpersonal trust have persisted for centuries. Schwartz, Bardi, and Bianchi (2000) find very little change in culture variables for Eastern-Central European countries in the 1990s despite major changes in legal and economic institutions. World Values Survey cross-country data were assembled several times over two decades spanning 1981–2001, and differences between different countries' scores tend to remain very stable, although overall mean scores change somewhat over time. Bertrand and Schoar (2006) also find support for this conclusion using responses from the World Values Survey. Indeed, the persistence of cultural traits raises an intriguing possibility, namely that cultural traits may perpetuate economic organization, such as family ownership of corporate assets, in a way that prevents convergence to more efficient organization. To the extent that culture helps perpetuate social norms such as arranged marriage, it is possible that culture may well impede convergence to diffused ownership structures (and away from family ownership of corporate assets).

Conclusions

No one seriously advocates that the 2020 Olympic team consist of descendents of current gold medalists. Hereditary monarchy, other than as a constitutional ornament, fell from favor because the characteristics needed to provide good government did not obviously run in families (Paine, Conway, Philadelphia Yearly Meeting of the Religious Society of Friends, & Meeting for Sufferings, 1776). Nor do great universities select doctoral students only from the children of their star faculty.

Yet family firms remain important, and highly respected scholars laud their virtues (James, 2006; Miller and Le Breton-Miller, 2005; Shleifer, Vishny, & Brennan, 1996). The ancient Chinese proverb "wealth shall not pass beyond three generations" seems unfulfilled in much of the world. How does this feudal vestige not only persist, but continue drawing praise in the modern merit-based economy?

Our exploratory results are consistent with the following view. In countries where cultural attributes favor arranged marriages, family firms appear to dominate. While no strictly causal links can be drawn from our study, the association between these two variables persists when we control for GDP. We posit that arranged marriages allow mate selection to favor succession practices that allow family firms to perpetuate for several generations. Absent such targeted mate selection, family firms are unlikely to enjoy the kind of longevity that is observed in many countries.

Our work opens a number of avenues for future research. Japanese family firms supplement arranged marriages with the outright adoptions of suitable (unrelated) heirs, and firms run by adopted heirs display superior performance (Mehrotra, Morck, Shim, & Wiwattanakantang, 2011) relative to blood-related heirs and relative to professional managers.[15] The formal adoption of a highly qualified adult heir is probably a uniquely Japanese device, but our findings suggest that arranged marriages might serve a like purpose in a broader range of countries. How arranged marriages affect corporate governance, corporate strategies, corporate organization, and other central questions about the organization of economic activity remains largely unexplored (although see James, 2006, and others). Second, these findings add cultural factors as yet another consideration affecting the open question of the circumstances under which family firm dominance is welfare enhancing. Third, our findings raise the issue of whether cultural traits are historical residues and hence exogenous, or endogenously related to the organization of a country's business sector.

Must love kill the family firm? Not necessarily, but arranged marriage may well sustain and reinforce this business model in many countries.

Appendix 1

The sample of countries used in graphs and tables, and the three-letter codes representing them in the graphs.

CODE	Country	CODE	Country	CODE	Country
ARG	Argentina	GER	Germany	NZL	New Zealand
AUS	Australia	GRC	Greece	PAK	Pakistan
AUT	Austria	HKG	Hong Kong	PER	Peru
BEL	Belgium	IDN	Indonesia	PHL	Philippines
BRA	Brazil	IND	India	PRT	Portugal
CAN	Canada	IRL	Ireland	SGP	Singapore
CHE	Switzerland	ISR	Israel	SWE	Sweden
CHL	Chile	ITA	Italy	THA	Thailand
COL	Colombia	JPN	Japan	TUR	Turkey
DNK	Denmark	KOR	South Korea	TWN	Taiwan
ESP	Spain	MEX	Mexico	USA	United States
FIN	Finland	MYS	Malaysia	VEN	Venezuela
FRA	France	NLD	Netherlands	ZAF	South Africa
GBR	United Kingdom	NOR	Norway		

15. These findings also cast doubt on the notion that business families are good at providing "grooming" for successors.

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We are grateful for helpful comments from Royston Greenwood and seminar participants at the Theories of Family Enterprises Conference in Edmonton in May 2010. All remaining errors are the authors' responsibility.