Socioemotional Wealth and Business Risks in Family-controlled Firms: Evidence from Spanish Olive Oil Mills

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This paper challenges the prevalent notion that family-owned firms are more risk averse than publicly owned firms. Using behavioral theory, we argue that for family firms, the primary reference point is the loss of their socioemotional wealth, and to avoid those losses, family firms are willing to accept a significant risk to their performance; yet at the same time, they avoid risky business decisions that might aggravate that risk. Thus, we propose that the predictions of behavioral theory differ depending on family ownership. We confirm our hypotheses using a population of 1,237 family-owned olive oil mills in Southern Spain who faced the choice during a 54-year period of becoming a member of a cooperative, a decision associated with loss of family control but lower business risk, or remaining independent, which preserves the family's socioemotional wealth but greatly increases its performance hazard. As shown in this study, family firms may be risk willing and risk averse at the same time.●

Family firms are a significant economic force in the United States and worldwide. Despite their potential advantages, such as greater organizational commitment and an orientation toward the longer term, La Porta, Lopez-de-Silanes, and Shleifer (1999) warned that wealth concentration in a single firm leads to greater risk aversion in family firms, and in the aggregate, this desire to minimize business risk can have the side effect of impeding overall economic development. Morck and Yeung (2003), echoing the predominant view, made a similar point, arguing that family business domination can retard economic growth, given that family firms are reluctant to opt for potentially high-return alternatives because of their relatively undiversified ownership position. This simplistic view does not take into account, however, that owners of family firms are concerned not only with financial returns but also with their socioemotional wealth through those firms. By socioemotional wealth we refer to non-financial aspects of the firm that meet the family's affective needs, such as identity, the ability to exercise family influence, and the perpetuation of the family dynasty. Using a socioemotional reference point, family firms are likely to place a high priority on maintaining family control even if this means accepting an increased risk of poor firm performance, yet because they must also keep the firm from failing, they may also act more conservatively by avoiding business decisions that may increase performance variability. The possibility that family firms could be both risk willing and risk adverse hinges on distinguishing between two types or risk: performance hazard risk and venturing risk.

The first type of risk, performance hazard, concerns the potential for negative consequences associated with a decision choice (March and Shapira, 1987; Hoskisson, Hitt, and Hill, 1991; Shapira, 1992), which can be manifested in two ways. One is the probability of organizational failure or threats to survival, what Shapira (1992: 135) referred to as "the worst case scenario" (see also Fischhoff, Watson, and Hope, 1984). The second is the possibility of below-target performance, where the target for comparison may be the firm's past performance or the performance of other firms in

the industry (Cyert and March, 1963). Family firms may be willing to incur a greater performance hazard, as evidenced by a greater probability of failure and below-target performance, if this is what it takes to protect their socioemotional wealth. Hence, they are loss averse when it comes to threats to their socioemotional wealth (relinquishing family control) even if this means accepting a greater performance hazard.

While both forms of performance hazard noted above (i.e., probability of failure and below-target performance) focus on the likelihood that bad things may happen, organizations may take risks hoping to improve their current situation. This second type of risk, venturing, involves the search for alternative routines and opportunities when the firm is unhappy with the status quo, namely, when its performance falls below target (Bromiley, 1991). The search for new approaches, including new products or technologies, may raise organizational performance, but it also increases the chance of unexpected outcomes, causing variance in performance (Wiseman and Bromiley, 1996). Greater variance in observed performance outcomes is often used as a proxy for an organization's desire to pursue promising projects with uncertain returns but with an upside potential to improve the firm's financial situation (Bowman, 1982, 1984; Fiegenbaum and Thomas, 1986, 1988; Bromiley, 1991; Miller, Wiseman, and Gomez-Mejia, 2002) and is an indicator of venturing risk. Family firms may be less likely to make business decisions that increase performance variability even when they face disappointing (below-target) performance. Because their probability of failure is higher, they should be less willing to take on projects with high outcome variance that might further increase the firm's probability of failure. While family firms may avoid venturing risks, they may be willing to incur the risk of greater performance hazard in order to preserve their socioemotional wealth.

SOCIOEMOTIONAL WEALTH AND BUSINESS RISKS

While definitions of what constitutes a family firm vary, privately held businesses in which families play a significant ownership or managerial role represent at least 80 percent of all firms in the U.S. (Daily and Dollinger, 1992; Shanker and Astrachan, 1996; Beer, Drexler, and Faulkner, 1997), and in some sectors (such as construction, retail services, and wholesaling), the proportion is estimated to be as high as 99 percent (James, 1999). Schulze et al. (2001) estimated that family influence is pervasive among the largest U.S. firms. They reported that in about 65 percent of firms with 1993 revenues of over $5 million, at least 50 percent of the ownership was concentrated in a single family. Likewise, Carsrud (1994) and Gomez-Mejia, Larraza-Kintana, and Makri (2003) reminded us that about 35 percent of Fortune 500 firms are largely controlled by family interests. International comparisons by La Porta, Lopez-de-Silanes, and Shleifer (1999) suggested that the diversified firm with atomistic ownership, which was the central concern of Berle and Means (1932) and much subsequent work by "managerialists" and agency writers, is almost absent in a world in which families directly or indirectly influence most economic activities.

The socioemotional wealth of family firms comes in a variety of related forms, including the ability to exercise authority (Schulze, Lubatkin, and Dino, 2003b), the satisfaction of needs for belonging, affect, and intimacy (Kepner, 1983), the perpetuation of family values through the business (Handler, 1990), the preservation of the family dynasty (Casson, 1999), the conservation of the family firm's social capital (Arregle et al., 2005), the fulfillment of family obligations based on blood ties rather than on strict criteria of competence (Athanassiou et al., 2002), and the opportunity to be altruistic to family members (Schulze et al., 2003b). Losing this socioemotional wealth implies lost intimacy, reduced status, and failure to meet the family's expectations.

Although it does not focus explicitly on family firms, a separate stream of literature suggests that an important aspect of the socioemotional wealth of family businesses is that it fulfills the need for identification. Identification can be construed as an individual's self-concept based on the social categories in which the person perceives him- or herself to belong (Tajfel, 1982; Tajfel and Turner, 1986). Pratt (1998: 172) noted that deep psychological gratification occurs when "an individual's beliefs about his or her organization become self-referential or self-defining." When much of an employee's self-concept is strongly tied to the firm's identity, he or she derives substantial non-economic benefits from membership in such an organization (Ashforth and Mael, 1989, 1996; Schneider, Goldstein, and Smith, 1995).

Organizational identification should be particularly salient in family firms, adding much to its socioemotional wealth. By definition, a family-owned firm provides a distinct self-defining role to its members based on family ties. Such an identification exists outside the realm of purposeful organizational activities and, in fact, is seen as an overarching construct that solidifies and further defines what it means to be a family-owned firm (Kets de Vries, 1993). In other words, the family employee's social status is closely tied to his or her employer, and an enduring attachment means that self-concept and self-esteem are likely enhanced through long-term identification with the firm that often bears the person's name (Westhead, Cowling, and Howorth, 2001). Thus the perpetuation of family emblems are at the core of what a family business identity represents (Littunen, 2003).

All of the above arguments suggest that for family-owned firms, preserving the family's socioemotional wealth, which is inextricably tied to the organization, represents a key goal in and of itself. In turn, achieving this goal requires continued family control of the firm. Hence, independent of financial considerations, family-owned firms are more likely to perpetuate owners' direct control over the firm's affairs. Thus, other things being equal:

Hypothesis 1: Family firms will exhibit a stronger preference to retain owner control of the organization than non-family firms.

The family business literature suggests that the family's attachment to the organization is highest when the firm is owned and managed by the founding family and that it tends

to weaken as the firm transitions into subsequent genera-
tions (e.g., Mishra and McConaughy, 1999; Chua, Chrisman,
and Sharma, 1999, 2003; Schulze, Lubatkin, and Dino,
2003a). Schulze and colleagues (2003a) distinguished
between a "controlling family owned firm," "sibling partner-
ship," and "cousins consortium." In the more advanced own-
ership stage, family influence becomes more dispersed or
fractionalized, with a smaller average shareholding per per-
son. The family as a monolithic entity begins to lose its grip
over the firm in later stages, and financial considerations of
multiple stakeholders move to the forefront.

Similar distinctions by family stage have been made by
Athanassiou et al. (2002), Gersick et al. (1999), and Ward and
Aronoff (1994), who argued that the degree of family identifi-
cation, influence, and personal investment in the firm
decreases once the firm transitions from a founding-family-
firm status to other ownership configurations. Sirmon and
Hitt (2003) suggested that the family's social capital that
resides in the business, in terms of structural (network ties
and configuration), cognitive (shared language and narratives),
and relational (norms and values) components, is higher
when the family and organizational domains overlap signifi-
cantly or are isomorphic, as they are in earlier ownership
stages. A higher social capital should have a positive impact
on a family's commitment to the firm in terms of the moral
obligation to exercise strong influence (normative commit-
ment), recognition of the costs associated with leaving the
firm (continuance commitment), and emotional bonds (affec-
tive commitment) (Meyer and Allen, 1997). When these con-
ditions are present (that is, in earlier ownership stages), the
family should be more reluctant to relinquish control.

The three family stages mentioned by various authors can be
described as follows: founding-family-controlled and managed
firms (first stage), ownership and management by extended
family (second stage), and ownership by extended family,
professionally managed firms (third stage). It seems reason-
able to expect that personal attachment to the firm, self-iden-
tification with the firm, the "utility generated by the ability to
exercise authority" (Schulze, Lubatkin, and Dino, 2003a: 182),
social capital and such—socioemotional wealth—should be
stronger in the founding-family-controlled and managed firms
(stage one) and that it should be relatively lower as the firm
moves into later stages, namely, ownership and management
by non-founding extended family (stage two) and ownership
by extended family members who are not involved in the
firm's management (stage three). Hence, independent of
financial considerations, losses in socioemotional wealth
should weigh less heavily on a family firm's willingness to
give up control as it moves from stage one through stage
three. Thus,

Hypothesis 2: The stronger the role of the family, the more likely
the firm is to strive to protect its socioemotional wealth, such that
willingness to give up family control is lowest at the founding-family-
controlled and managed stage, moderate at the non-founding
extended-family-owned and managed stage, and highest at the
extended-family- owned and professionally managed stage.

Balancing Risks and Continued Family Control

As table 1 shows in its summary of studies of risk in family firms, there is broad agreement that family firms tend to be more risk averse in their business decisions than non-family firms. The predominant theoretical explanation for this comes from some variant of agency theory (Gomez-Mejia, Nunez-

Table 1

Summary of Representative Studies Examining Business Risk in Family Firms

Authors	Definition of business risk	Key measures	Sample	Results
Donnelly (1964)	Willingness to innovate	Self-report	Anecdotal	Lower innovation in family firms
Levinson (1983)	Willingness to innovate	Self-report	Anecdotal	Lower innovation in family firms
Benson (1991)	Willingness to innovate	Self-report	Anecdotal	Lower innovation in family firms
Daily & Dollinger (1991, 1992)	Miles & Snow's "prospector" strategy	Self-report	486 small manufacturers in Indiana	Family firms tend to adopt a conservative "defender" orientation and avoid growth-oriented strategies
Galve-Gorriz & Sala-Fumas (1996)	Risk exposure of owner's portfolio	Firm's rate of growth debt	81 non-financial firms quoted in Spanish stock market	Family firms limit growth rates and avoid debt
Mishra & McConaughy (1999)	Risk exposure of owner's portfolio	Debt	*Business Week* sample of 1000 firms in 1987	Founding-family-controlled firms use less debt
Morck, Strangeland, & Yeung (2000)	Investments in innovation	Research and Development (R&D) expenditures	Publicly traded Canadian firms controlled by heirs	Heir-controlled firms invest less in R&D than benchmark non-heir-controlled firms of same age, size, and in same industry
McConaughy, Mathews, & Fialko (2001)	Risk exposure of owner's portfolio	Capital structure or the proportion of debt to equity	Biographical sketches of CEOs provided by *Business Week* in 1997	Debt-to-asset ratio of founding-family-controlled firms less than a third that of a matched sample of firms whose managers are not family members
Gomez-Mejia, Nunez-Nickel, & Gutierrez (2001)	Variation of performance outcomes	Coefficient of variation	276 Spanish newspapers	Family firms more likely to terminate top executives when the coefficient of variation increases
Athanassiou et al. (2002)	Pursuit of high-risk/high-return strategies	Self-report	42 Mexican family businesses	Family firms place much higher importance on survival and family employment opportunities than trying to maximize profitability or market returns
Schulze, Lubatkin, & Dino (2003a)	Risk exposure of owner's portfolio to unfavorable market conditions	Debt-to-equity ratio, growth rate of firm's market	3,860 firms in survey by Arthur Andersen Center for Family Business	Family firms are more likely to use debt as the growth rate of the firm's market increases
Gomez-Mejia, Larraza-Kintana, & Makri (2003)	Systematic (macroeconomic or industry-wide forces) and unsystematic (conditions unique to the firm) risk	Variability in firm's stock market returns	253 publicly traded family-controlled firms	Family firms penalize non-family executives in their pay as firm risk increases

Nickel, and Gutierrez, 2001; Chua, Chrisman, and Sharma, 2003; Gomez-Mejia, Larraza-Kintana, and Makri, 2003; Villa-longa and Amit, 2006). Briefly, family principals have most of their wealth tied to one company and cannot easily diversify their portfolio. Hence, they largely depend on one organiza-tion for their welfare, so that their risk is highly concentrated. In response to this vulnerability, family executives place a high value on avoiding business risk because the possibility of negative outcomes more than outweighs the benefits of any potential returns. But this widely held view does not con-sider the possibility of socioemotional losses for family mem-bers. Depending on the type of risk being considered, family firms could be both risk willing and risk averse at the same time. They might be willing to take risks that incur a perfor-mance hazard but not be willing to take venturing risks.

Performance hazard. A long stream of research that has flowed from Kahneman and Tversky's (1979) prospect theory (Bowman, 1982, 1984; Fiegenbaum and Thomas, 1986, 1988; Fiegenbaum, 1990) and Cyert and March's (1963) behavioral theory of the firm (e.g., Singh, 1986; Bromiley, 1991; Miller and Chen, 2004) can help us understand why family firms may be loss averse and, hence, risk willing when it comes to decisions affecting their socioemotional endow-ment, even if this may not be economically rational from a business risk standpoint. These behavioral perspectives relax the inflexible assumption from agency theory that decision makers hold consistent risk preferences and instead propose that decision makers take a contingency-based view to allow for the possibility of varied risk preferences, depending on the context being faced.

According to behavioral theory, a decision maker's risk prefer-ences change with the framing of problems. Problems are framed as either positive or negative using a reference point to compare anticipated outcomes from available options. Thus problems can be framed as a choice among potential gains or as a choice among potential losses. Behavioral theo-ry predicts that decision makers prefer to avoid a loss even if this means accepting a higher risk; and hence, the "risk pref-erences of loss-averse decision makers will vary with the framing of problems in order to prevent losses to accumulat-ed endowment" (Wiseman and Gomez-Mejia, 1998: 135). From this vantage point, risk bearing is subjective, represent-ing perceived threats to a decision maker's endowment— what the person believes is important to his or her welfare, is already accrued, and can be counted on.

Applying the logic of behavioral theory, family firms are likely to frame relinquishing their socioemotional wealth as a cru-cial loss and are thereby likely to accept threats to the firm's financial well being (i.e., a greater probability of failure and below-target performance) to prevent that loss. Thus, con-trary to the conventional agency-based view, we suggest that family firms are loss averse with respect to socioemotional wealth and are willing to face a significant performance haz-ard to preserve that wealth. This creates an apparent paradox in that organizational failure implies the loss of all socioemo-tional wealth, yet this is the gamble that these family firms are willing to take, perhaps believing that this risk can be

managed, hoping for the best, namely, continuity of the firm under the family's stewardship. This is consistent with March and Shapira's (1987) and Shapira's (1992) findings that executives often justify their risky decisions by expressing a belief that risk is not exogenous and can be managed. The preceding arguments suggest the following hypotheses:

Hypothesis 3a: Family firms are more willing to accept a greater probability of organizational failure than non-family firms in order to retain family control.

Hypothesis 3b.1: Family firms are more willing than non-family firms to accept below-target performance relative to their own past performance in order to retain family control.

Hypothesis 3b.2: Family firms are more willing than non-family firms to accept below-target performance relative to the performance of referent firms in order to retain family control.

Venturing risks. The basic behavioral model proposes that organizations tend to initiate searches for alternative strategies or routines (what we call venturing risks) when their performance falls below their target or "aspiration" level, and the opposite is true when their performance is above this target. For instance, Singh (1986) argued that when faced with below-target performance, firms will pursue projects with higher outcome variance because projects with lower variance would most likely preserve below-target performance. Similarly, Wiseman and Bromiley (1996: 530) argued that "firms facing a loss context (where expected performance falls below performance targets) . . . may opt for projects of higher risk where that higher risk translates into greater variance in project outcomes." Consistent with this view, managers interviewed by Shapira (1992) and MacCrimmon and Wehrung (1986) reported that riskier choices that involve greater variance in expected results are more warranted when managers have the potential to fail to meet targets than when they are likely to meet their targets.

Previous empirical studies by Bowman (1982, 1984), Fiegenbaum (1990), Fiegenbaum and Thomas (1986, 1988), and Bromiley (1991) used performance-variance measures of risk to support this basic model: organizations whose performance falls below target tend to take on greater risk, and those whose performance is above target tend to take less risk. For underperforming firms, venturing behaviors that might increase performance variability may improve their chances of attaining their target. As noted earlier, targets may be set using the firm's past performance or the performance of other similar firms in the industry. Hence,

Hypothesis 4: There is a U-form relationship between distance from the aspiration level (either in terms of discrepancy from a historical performance target or the performance of referent firms) and performance variance so that the latter increases as organizational performance diverges from the aspiration level in either direction.

March and Shapira (1987, 1992) provided further theoretical extensions of the basic behavioral model by making an important prediction concerning firms that perform below their aspiration level. They argued that firms face alternative

reference points, aspirational vs. survival, and the willingness to undertake projects with high outcome variance increases only when the former is most salient. As the firm approaches a situation in which the probability of business failure is high, the focus of attention then changes from reaching the aspiration level to one of ensuring the firm's survival. Hence, the tendency to choose investments with high performance variance, as basic behavioral theory would suggest, is attenuated by a heightened awareness of danger when the probability of failure increases. This argument is similar to that of the "threat rigidity response" made by Staw, Sandelands, and Dutton (1981: 502), who proposed that risk taking decreases under threats to survival.

Although the basic behavioral model—which predicts high performance variance for those below target and low performance variance for those above target—has found overwhelming empirical support in many studies, March and Shapira's extensions have received little attention. Miller and Chen (2004) in a recent study designed to meet this challenge, found, contrary to March and Shapira's prediction, that organizations showed increased performance variance as they neared bankruptcy. Miller and Chen suggested that this result might have been due to the nature of their sample (large publicly traded manufacturing firms), in which the limited liability feature of equity claims truncates the distribution of downside outcomes by transferring the risk of non-payment of debts from shareholders to creditors. In their words, "this feature provides an incentive to increase risk when a firm is near bankruptcy" (Miller and Chen, 2004: 111). In any event, there is a need to further test March and Shapira's propositions where this confounding effect is not present. This test also serves as a platform to examine the moderating role played by family ownership, as discussed in hypotheses 6 and 7. Hence, following March and Shapira's extensions of the basic behavioral model, we hypothesize that:

Hypothesis 5: The higher the organization's probability of failure (i.e., as the threat to survival increases) the lower the performance variance.

The above predictions apply to all firms, but family status should also exert an independent influence here. If family firms voluntarily choose to trade a greater probability of failure in exchange for preserving family control of the organization (as per hypothesis 3a), and if a greater probability of failure is associated with lower performance variance (as per hypothesis 5), then by logical extrapolation, March and Shapira's model would predict that family firms on average should exhibit lower performance variance. Thus,

Hypothesis 6: Family firms will show lower performance variance than non-family firms.

Continuing along the same vein, if family firms are more willing to tolerate below-target performance as a condition of retaining control of the firm (as per hypothesis 3b.1 and 3b.2), and because preserving that control is more salient to them than meeting a performance target, it seems reasonable that they would avoid high-variance investments that

might further jeopardize their self-chosen vulnerable position. In other words, rather than pursuing opportunities that may have upside and downside potential as the distance from the performance target grows, family firms would tend to remain steadfast in their position. Unconstrained by the need to safeguard a socioemotional endowment, non-family firms can be more single-minded in the search for and execution of high-performance-variance strategies as the gap between performance and the target widens. Another way of looking at this is that the type of risk a firm focuses on depends on family status. Non-family firms performing below target engage in projects with greater outcome variance (venturing risk) to avoid continued financial losses, as shown by Fiegenbaum and Thomas (1988). Yet family firms are willing to accept below-target performance and a higher probability of failure (a performance hazard) to avoid socioemotional losses. Hence, we expect family firms to exhibit lower venturing risk as the distance to the performance target increases than non-family firms:

Hypothesis 7: The relationship between the distance to the performance target (either historical or relative to referent firms) and performance variance is lower among family than non-family firms.

METHODS

Sample and Setting

Our database contains information on all olive oil mills that have operated in the province of Jaén (Spain) during the period between 1944 and 1998. The mills extract and store virgin olive oil, with extraction being the fundamental activity. Olives are the sole raw material and critical resource for the operation of the mills, which requires no specialized workforce.

One thousand two hundred and thirty-seven firms (N = 1,237) were considered as family owned at some point during the 54-year time span, which is defined by government as all those in which a particular family has undivided property rights over the mill's assets. This information, as noted below, was obtained from government mandated registries updated annually. Although detailed ownership percentages by individual parties are not available, for all those mills that are family owned, the registry (which collects these data once a year) identifies three mutually exclusive categories: (1) Mills that are owned and operated by the founding family. To be designated as such, two criteria must be met. First, at the time the report is filed, the family owners must be the same as those who appeared in the original title document. Second, the original founders must still be physically and legally responsible for the firm. There were 1,086 firms at this stage at some point during 1944–1998; (2) Mills that are owned and managed by non-founding extended family. These are firms that are owned by relatives of the original founders and who hold top management positions in the firm under a "joint property" or "community property" legal status. Almost all of these firms have names such as "Brothers of," "Heirs of," or "Sons of," indicating the nature of blood ties between current owner managers and original founders. There were 241 firms at this stage at some point during

1944–1998; and (3) Mills that are owned by non-founding extended family members but that are managed by hired professional executives. These non-family executives have operational responsibility for the firm on behalf of absentee family owners. There were 80 firms at this stage at some point during 1944–1998.

If the mill is *not* family owned (i.e., it does not fall into one of the three family ownership stages noted above), it is classified into one of two mutually exclusive categories: those that are corporations, owned by multiple non-related investors and run by professional managers (229 firms), or cooperatives (320 firms). For reasons discussed below, a firm's decision to become part of a cooperative is a unidirectional one: the choice faced by an independent firm (family-owned or corporate) at any one point during the 54-year period is whether or not to become part of a cooperative; the cooperative cannot "turn the clock back" and become a family or corporate-owned firm.

Joining a cooperative is a voluntary act on the part of the mill, so that the decision to join or remain autonomous rests entirely on the firm's owners. All mills have an equal chance of joining the coop, and upon signing the membership documents, the new member has the same rights and obligations as any other member. Except in some very unusual circumstances, the coop cannot deny entry to an independent mill that wishes to become part of the coop. In other words, the final decision to be "in or out" is taken by the mill, not the coop. There are two reasons for this. The first is that to be recognized as a coop and receive the substantial tax incentives described below, Spanish legislation (known as Ley General de Cooperativas) explicitly requires a "voluntary and open membership" clause in the coop's constitution. This clause must clearly state that "this is a voluntary organization, open to all persons able to use its services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination." Spanish law makes it very explicit that the only "fair cause" to deny admission to a prospective member is when such a party will not contribute to the "corporate purpose" of the coop, for instance, an applicant who is in a different line of business than that of the coop. The coop rarely rejects an applicant. Even then, procedures are in place to protect the applicant from arbitrary judgments. If the board of the coop rejects an applicant's petition to join, the coop is required to provide a written report justifying the reason for the denial. The rejected applicant can then appeal its case to the general assembly of all members, who might overturn the board's decision and approve the petitioner's request. As a last recourse, the petitioner may file charges in court against the coop for failing to meet the "fair cause" rejection criterion.

A second reason is that, legal issues aside, coops are interested in getting new members because they can secure more input (olives) and hence gain a competitive advantage in this commodity market. Due to non-compete agreements, to be discussed later, new entrants usually transfer property rights of the mill's plant and equipment to the coop. This allows the coop to process more olives, increasing the vol-

ume of oil that can be delivered to market. By doing so, the coop may also preempt competitors from gaining ground in the same location. And as long as the prospective entrant can bring new olive crops as inputs into the coop, the coop will benefit. The new entrant will be compensated in the same way as any other member, based on tons of olives delivered to the coop. Furthermore, new entrants are not required to pay an initiation fee, and contributions to cover the coop's administrative expenses are very modest, typically, six euros per ton of olives turned into the coop. Hence, affordability is not much of an issue here.

The coop brings several financial advantages to its members. These are well known to the mill owners, most of whom live in small agricultural towns where this information is common knowledge. First, significant tax benefits accrue when becoming a member of the cooperative; thus there is a strong fiscal inducement to join. Cooperatives have enjoyed extensive tax benefits in Spain for the last 80 years. The most recent regulation concerning the tax status of cooperatives, known as Law 20, completely exempts coops from taxes during the first ten years, and after this grace period is over, they only pay 50 percent of the tax rate that an equivalent non-coop organization would have to pay. The regional government also provides subsidies from time to time to the cooperatives to purchase equipment, facilities, chemicals and the like. The rationale for these subsidies is that it helps the cooperatives reduce unemployment in an area (Andalucia) that has traditionally suffered from a chronic unemployment problem. Second, the cooperative enjoys a substantial vertical integration of inputs (olives), process (machinery, equipment, and technology to transform olives into oil), and output distribution channels (to sell and deliver olive oil to various markets). It also promotes horizontal integration among input suppliers, who are also members of the coop. Third, because coops enjoy greater economies of scale than individual oil mills, they tend to be more efficient. Fourth, coops provide substantial technical, managerial, and marketing support to their members. Fifth, the coop generally provides its members with access to better financing through alliances with local credit unions (or "Caja Rurales"). Family mills that decide to remain independent may be forced to depend exclusively on family savings as a source of capital. Sixth, the cooperative guarantees a price per ton of olives to its members, who are compensated in direct proportion to the total weight of the olives they bring into the coop. Hence, price uncertainty, a major risk concern for commodity producers, is virtually eliminated. Seventh, the coop handles distribution and marketing of the product to external buyers, reducing the possibility that unforeseeable events (e.g., a machine breakdown) may retard scheduling and reduce profits. Lastly, given its larger size, the coop has greater bargaining power than do individual oil mills to secure more favorable terms from input suppliers (e.g., providers of fertilizers, equipment, and materials) as well as buyers.

In terms of our hypotheses, all of the benefits noted above should translate into a lower performance hazard for the olive oil mills that decide to join the coop. These are particularly

important in an industry in which there are many unforesee-able factors, such as climate, diseases, and demand changes, that may have an unexpected negative effect on firm performance. Further, olive trees are a long-term invest-ment: it may require ten or more years before they produce any yield, and hence financial returns lie in an unforeseeable future.

Although a family-owned mill can greatly reduce its perfor-mance hazard by voluntarily joining a cooperative, because of tax advantages, guaranteed minimum prices, technical sup-port, and such, the family will also lose control of the firm. In terms of our theoretical model, this means that the family faces a stark choice of either reducing its performance hazard by joining the coop and losing family control of the firm or retaining full control of the mill, remaining independent but accepting a higher performance hazard by going it alone. There are five key reasons why a family-owned mill would have to relinquish control of the firm, and hence lose its socioemotional endowment, by joining the coop. The first two are legal, while the last three pertain to managerial issues.

First, firms wishing to join a coop need to sign an exclusive membership agreement with one particular coop. The agree-ment is irrevocable, so once this step is taken, the family firm cannot go back to being autonomous, permanently changing the family firm's legal standing from a privately owned independent firm to being a part of the cooperative. After joining, the family must abide by the conditions, rules, and directives imposed by the coop, including removal of the family name.

Second, as a unit of the coop, the mill must turn in all of its produce to the coop and cannot search for alternative outlets. This non-compete agreement is explicitly codified in Spanish legislation, which demands that as a condition of joining the coop, the firm cannot conduct parallel activities that may pose a threat to the cooperative.[1] And although a mill is not forced to sell its plant and equipment to the coop as a condi-tion of its membership, it cannot rent it or sell it to any other entity because this would be a violation of the non-compete clause. For this reason, in almost all cases in which a mill makes the decision to join the coop, it signs over property rights to the coop, selling its plant and equipment to the coop. This effectively handcuffs the family mill to the coop in a resource dependent relation.

Third, corporate governance of the coop ensures that family influence completely vanishes, for all practical purposes. Sev-eral governance features account for this. The coop appoints a chief executive officer (CEO), who is a professional execu-tive accountable to a board. The board, which is usually com-posed of 8–10 members, is elected from the coop members, but no single firm can have more than one member on the board. Furthermore, an olive mill that has just joined a coop-erative must wait at least a year before being able to place a representative on the governing board. Major decisions con-cerning policy, rules and procedures, relations with external parties (such as the government and financial institutions),

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Non-compete agreements are explicitly outlined in the following legal documents issued by the Spanish government: Intro-duction to Law of Cooperation 1942, Arti-cle 10d of Cooperative Law of 1974, and Article 34, section 2e of Cooperative Law of 1987.

contractual obligations, and the like must be approved by the entire assembly, consisting of all members eligible to vote. Each family-owned mill that joins the coop can exercise one vote in the general assembly, the same as any other member. This "one member one vote" rule applies to all firms that are part of the cooperative, regardless of size, wealth, local influence, or other idiosyncratic firm factors. Because each cooperative on average includes approximately 100 members, the power that may be exercised by any particular family in the assembly is minimal, limited to a maximum of one vote. Simply put, by entering the coop, a family goes from enjoying total executive discretion in its old firm to a diluted power-sharing arrangement in which the family's voice and desires count the same as those of any other member with a right to vote.

Fourth, unlike an independent mill, in which the family can unilaterally decide on the technology used, cultivation methods, quality features, the price at which it is willing to sell olives, the use of pesticides, management policies, and the like, by joining the coop, the firm must abide by the directives established by the coop's CEO, board, and general assembly. Lastly, the coop uses a team of inspectors (*interventores* in Spanish) to ensure that its mandates are followed and that financial reports are in order. In summary, when a firm joins a coop, the identity and power that previously resided within the family that owned an individual oil mill must now be collectively shared by all other firms that form part of the coop. Hence, joining the coop represents a loss for the family firm in socioemotional terms.

Data Sources

The authors gathered all the data manually from government registries. Each olive oil mill and coop is required to file an annual report, as mandated by the Andalusian Regional Government, one of the main olive oil producing regions in the world. These annual reports come in two different forms. The first report is called the "Registry of Agricultural Firms of the Agricultural and Fisheries Department in the Province of Jaén." This data source contains annual information for each oil mill for the entire 54-year period. Because inscription in the registry is a legal requirement, we had access to the entire population of mills in the region. Since 1944, the administrators of the registry have gathered and updated data annually for each olive mill in situ. If the mill failed to cooperate or provided misleading information, it could receive major sanctions. The second report is called the "Registry of Cooperatives of the Trade and Industry Department in the Province of Jaén." This registry provides information on each cooperative operating in the region in the same 54-year period, including a list of firms that decided to join and when. For some of the control variables, these two reports were complemented by other data sources, as noted below.

Measures of Variables

Loss of control was measured each year as a dichotomous variable. An olive oil mill was coded as "1" on this variable whenever it voluntarily decided to change status from being

a privately owned independent firm to being a cooperative, an exclusive agreement that transfers power from the mill owners to the coop governance structure. We coded all those mills that decided to remain independent (i.e., not part of a cooperative) in a given year as 0 and those that decided to transfer control over to a cooperative as 1. We used this loss of control measure as a dependent variable to test hypotheses 1 and 2 using an event history analysis.

Performance hazard. As noted earlier, performance hazard was conceptualized as the possibility of negative outcomes. As per our theoretical arguments, family firms prefer to retain family control and, hence, preserve their socioemotional wealth, even if this means accepting a greater likelihood of below-target performance and a greater probability of business failure in the future. We measured the performance hazard in several ways.

Because the extent to which an organization meets its performance target cannot be measured directly, we used two common proxies to measure the distance between performance and target, or attainment discrepancy (Cyert and March, 1963). The first one, *historical target achievements,* consists of a comparison of current with past performance. From this perspective, the greater the magnitude of performance shortfalls, or performance discrepancy, between periods, the greater the performance hazard. We assessed this by a panel data analysis that calculated the percentage increase or decrease in tons of olives sold (natural logarithm in tons of olives sold at t + 1 divided by tons of olives sold at t). A score of 0 means that the target was achieved. The magnitude of positive (above 0) or negative (below 0) scores indicates the distance from achieving the target. Earning records are not available, but because olives can be considered a commodity, this is a reasonable proxy for whether the firm is facing declining (below-target) or increasing (above target) revenues.

The second measure of target achievement, *referent-target achievement,* consists of a comparison of the focal firm's performance in each time period with the average performance of other firms in the sector in the same time period. We calculated this variable for each firm as the annual percentage difference in tons of olives (in logarithmic form) sold by that firm and the average sold by other similar oil mills. The resulting magnitude of positive or negative percentage scores indicates the extent to which the firm fell behind or exceeded the performance target of referent firms in a particular year. We controlled for the number of employees in all equations, as an indicator of firm size. No data were available on the number of acres in cultivation.

The third indicator of performance hazard captures the likelihood that the firm will cease operations in the future. We used a standard econometric approach to estimate the probability of failure, namely, an event history analysis in which the endogenous variable is the duration or waiting time until the firm disappearance event, if any, occurs. In this kind of analysis, one estimates an instantaneous hazard rate, mathematically defined as:

$$r(t) = time_{\Delta t \to 0} PR[(event\ t,\ t + \Delta t/no\ event\ at\ t)/\Delta t]$$

Where t is the waiting time and r(t) is the probability that an olive oil mill fails between t and t + Δt, given the organization was operating at t (see Ingram and Inman, 1996; Barnett, 1997; Ranger-Moore, 1997; Silverman, Nickerson, and Freeman, 1997).

Because there is some debate about the appropriate parametrizations of waiting time (Ingram and Baum, 1997), we used a semiparametric Cox model (Cox, 1972) in which it is not necessary to choose any distribution. The standard Cox model continues to be the most frequently used model for duration data (Powers and Xie, 2000: 174). The expression of the hazard rate in this model is:

$$r(t) = r_o(t)\ exp[x_i(t)\beta]$$

Thus, the Cox model depends on an unspecified baseline hazard rate, $r_o(t)$, and a set of time varying variables $x_i(t)$. β is the vector of parameters to estimate. If β has a positive sign, the probability of failure will increase, and conversely, if the sign is negative, both will decrease. Estimates of the models were obtained using maximum partial likelihood in the STATA 8.0 program (Stata Corporation, 2003).

Miller and Leiblein (1996) and Miller and Reuer (1996) have used the term "downside risk" to refer to the negative semi-variance of performance outcomes, or the observed deviations of performance outcomes below the performance target utilizing root lower partial moments. They experimented with seven different targets to make this calculation, e.g., "firms update their target levels annually and set them equal to their own performance the previous year," "firms update their target levels annually and set them equal to the average performance" in all their sectors in the previous year, and such (Miller and Leiblein, 1996: 101–102). We did not use these measures for two reasons. First, theoretically it made more sense in our study to examine the extent to which family firms experienced hazard in the form of lower subsequent performance, rather than a negative semi-variance, and a higher probability of failure as a price for continued family control. Second, we calculated all seven "downside risk" measures proposed by Miller and colleagues in our data and found that they all load on a single factor, with average inter-correlations among these measures in the high 90s. Most importantly, we found that the performance semi-variance (deviations below target) and overall performance variation (performance variation above and below target) correlated .87 (further details on these results are available from the authors). Hence, we could not meaningfully differentiate between these semi-variance measures and the coefficient of variation, which is based on the entire distribution of performance outcomes and which we used as an indicator of venturing risk, as noted below. This is not the case, however, with our measures of performance hazard, as the correlations among themselves and the coefficient of variation are much

lower, as reported below, and thus they are not redundant. Furthermore, our measures of performance hazard are far more parsimonious; using multiple downside-risk measures would greatly increase the complexity of the analysis and interpretation of results.

Venturing risk. We calculated the coefficient of variation for each firm as a measure of venturing risk by dividing the standard deviation in tons of olives sold by the average tons of olives sold. The coefficient of variation, which normalizes the standard deviation of performance by mean performance (cf. Miller and Reuer, 1996) is the recommended statistic to isolate real risk from other dimensional effects when comparing the variability of several batches of data with different distributions across various time periods (Berenson and Levine, 1993: 55-56; Nickel and Rodriguez, 2002). As one would expect, there is a high correlation between the absolute standard deviation and the mean corrected standard deviation, or the coefficient of variation. An r^2 of .71 suggests that these measures are largely similar but not redundant.

Family status. We created two sets of annual variables to measure family status at the start of each year. The first one, *family owned,* was measured as 1 if the mill remained in family hands or 0 if the mill became part of a cooperative. The second one, *family stage,* was obtained from the registry for those mills that were designated as *family owned* in terms of the three mutually exclusive categories described above: *Family Stage I,* corresponding to those that are owned and managed by the founding family (1 if yes, 0 otherwise); *Family Stage II,* corresponding to those owned and managed by the non-founding extended family (1 if yes, 0 otherwise); and *Family Stage III,* corresponding to those owned by the non-founding extended family but managed by hired non-family executives (1 if yes, 0 otherwise).

We also included a number of control variables in the study that could potentially affect the dependent variables; including them in the equations serves to rule out alternative explanations to those that are formally hypothesized. Unless indicated otherwise, all of them were recorded annually from the government registries noted above. We controlled for the *Aggregate supply,* a measure of the total annual olive harvest (in million kilos) for the entire country, capturing the status of the commodity supply market for olives on a national level in a particular year. Relatedly, for each year, we also calculated the standard deviation of the aggregate supply for the prior five years, which serves as a proxy for cyclical gyrations at the industry level. *Ownership of means of production* is a dummy variable that captures whether the firm owns its plant and equipment (coded as 1) or leases it (coded as 0). *Organizational size* is the number of workers employed by the oil mill. We controlled for *technology* with three measures recorded in the registry that reflect the mill's technological sophistication. *Use of traditional technology* means that oil is obtained by mechanically pressing the olives (coded 1 for yes, and 0 for no). *Use of advanced technology* means that the mill uses more sophisticated centrifugation equipment to extract the oil, recorded as a dummy (1 if yes, 0 if no). We included both types of extraction methods because

an oil mill could use more than one in its production process. The third technology-related variable, *degree of mechanization,* indicates the potential productivity of workers, measured as the ratio of the mill's installed power to the number of employees.

Density is the total number of olive oil mills in the population at a national level at the start of each year and controls for one source of intrapopulation competition (Hannan, 1989). *Institutional support* is a control variable that captures the transfer of funds from the government to cooperatives, which varies by historical periods in the 54-year time span. Because the actual amount was not available to us, we measured it as a dummy variable taking a value of 1 if subsidies were provided during the particular time in question and 0 otherwise. We controlled for *organization age* by measuring the number of years elapsed since a firm's founding and the beginning of the focal year, which is necessary to overcome truncated data in lifetime models (Carroll and Hannan, 2000); for family firms, it also implicitly controls for family tenure. We used a dummy variable, *Franco era,* to capture the political regime in power at the time. During the conservative reign of Generalissimo Francisco Franco from 1939 to 1975 (coded as 1) the country was run in a dictatorial centralized fashion. Upon his death in 1975, Spain became a representative democracy (coded as 0). *Number of previous coop transformations,* the total number of olive oil mills that have joined a coop in the focal firm's district during the prior five years, serves as a proxy for highly localized norms and practices concerning coop membership. The entire province of Jaén, which has 7,288.33 square miles, is divided into nine districts. *Gross national product* is a macroeconomic variable that serves as an indicator of the country's wealth for each year included in the study. *Cubic meters (M³) of rainwater,* the availability of rainwater for each year considered in the study, serves as a proxy for nature's role in facilitating or hindering (during dry spells) the cultivation of olives. The annual cubic meters of rainwater for the Province of Jaén was obtained from Spain's National Institute of Meteorology.

Endogeneity. Firms may face unchosen risks as a consequence of unobservable organizational or environmental characteristics that are not captured in the control variables included in the model (for general discussion concerning endogeneity, see Heckman, 1979; Hsiao, 1998; Hamilton and Nickerson, 2003). Heckman (1979) demonstrated that this problem can be tackled by including the inverse of Mill's ratio in the models as a control variable. To calculate this variable, we have followed the empirical application developed by Shaver (1998: 581): we estimated one probit model for each period, in which family (coded as 1) versus non-family firm (coded as 0) is the endogenous variable. If we consider that these models have the following structure, Family firm/Non-family firm = y'w + ε, we can calculate the new control variable as a function of the following criteria:

Endogeneity control = $\phi(y'w)/\phi(y'w)$, if the firm is family owned.

Endogeneity control = -$\phi(y'w)/[1 - \phi(y'w)]$, if the firm is not family owned.

The exogenous variables (w) in these models refer to the unobserved characteristics that may influence observed risk-taking behaviors.

RESULTS

Table 2 shows the intercorrelation matrix for all variables among family-owned mills. Table 3 presents the equivalent intercorrelation matrix for all firms that are not family owned. Because data are recorded for each separate year, the correlation matrices are calculated based on the mean score for each variable for every firm during the 54-year period. These tables show that for both samples, the probability of failure decreases as the coefficient of variation decreases and (historical and referent) target achievement improves. The negative association between firm size and the probability of failure in both samples suggests that size provides oil mills with slack resources to weather threatening conditions, a finding consistent with earlier work by organization theorists (Jones, 1998). The correlation between loss of control with probabili-

Table 2

Correlations, Means, and Standard Deviations for Family-owned Olive Oil Mills*

Variable	Mean	S.D.	1	.2	3	4	5	6	7	8	9
1. Probability of failure	.10	.06									
2. Coefficient of variation	.05	.18	-.21								
3. Control loss	.001	.0001	.07	-.01							
4. Historical target achievement	.01	.10	-.18	.37	-.03						
5. Referent target achievement	-.34	.61	-.60	.14	.01	.08					
6. Aggregate supply (millions)	568555	329763	-.10	.11	-.27	.04	-.10				
7. Ownership of means of production	.79	.40	-.08	-.00	.12	-.00	.04	-.04			
8. Organization size	9.00	7.61	-.27	.05	.02	.02	.48	.07	.02		
9. Use of traditional technology	.95	.21	.19	-.13	.16	-.04	.05	-.32	.00	-.10	
10. Use of advanced technology	.02	.16	-.26	.12	-.15	.04	-.02	.35	-.00	.00	-.77
11. Degree of mechanization	4.41	6.02	-.31	.15	-.21	.07	-.03	.43	.01	-.10	-.56
12. Density (thousands)	833.63	256.40	-.23	-.11	-.01	-.04	.10	-.48	.00	-.12	.32
13. Institutional support	.60	.48	-.28	-.11	.39	-.02	.06	-.26	-.02	-.09	.20
14. Organization's age	36.54	22.55	-.15	.09	-.48	.04	-.08	.20	-.07	.07	-.10
15. Franco era	.85	.34	.05	-.12	.35	-.05	.13	-.57	.06	-.12	.40
16. Number of previous coop transformations	.43	.88	-.17	-.03	.54	-.00	.03	-.08	-.03	-.03	.07
17. Gross national product	21185.8	16436	-.13	.17	-.51	.07	-.18	.63	-.10	.12	-.42
18. M³ of rainwater	555.13	177.35	-.08	.00	-.14	.00	-.01	.23	-.04	-.01	.01
19. Aggregate supply standard deviation	210477	98468	-.10	.11	-.24	.04	-.10	.51	-.01	.05	-.29
20. Endogeneity control	-.01	.05	.06	.01	.02	.02	-.00	.03	.05	.01	-.04

Variable	10	11	12	13	14	15	16	17	18	19
11. Degree of mechanization	.64									
12. Density (thousands)	-.33	-.42								
13. Institutional support	-.21	-.26	.82							
14. Organization's age	.10	.15	-.21	-.12						
15. Franco era	-.42	-.51	.75	.50	-.27					
16. Number of previous coop transformations	-.07	-.09	.37	.35	-.04	.18				
17. Gross national product	.45	.56	-.73	-.47	.34	-.84	-.16			
18. M³ of rainwater	-.01	-.01	.13	.12	-02	-.01	-.01	.01		
19. Aggregate supply standard deviation	.31	.36	-.35	-.21	.15	-.45	-.12	.50	.00	
20. Endogeneity control	.04	.05	-.17	-.17	-.04	-.10	-.06	.08	-.04	.03

* Correlations ≥ I.01I are significant at $p < .00001$.

Table 3

Correlations, Means, and Standard Deviations for Non-Family Owned Olive Oil Mills*

Variable	Mean	S.D.	1	.2	3	4	5	6	7	8	9
1. Probability of failure	.05	.06									
2. Coefficient of variation	.13	.25	-.27								
3. Control loss	.10	.00	.23	.10							
4. Historical target achievement	.03	.17	-.18	.33	-.26						
5. Referent target achievement	.07	.70	-.62	.24	.03	.13					
6. Aggregate supply (millions)	829619	472732	-.24	.09	-.24	.03	-.12				
7. Ownership of means of production	.91	.28	-.23	.05	.13	.03	.15	.07			
8. Organization size	16.79	14.40	-.28	-.01	-.02	.00	.60	-.07	.13		
9. Use of traditional technology	.73	.44	.44	-.20	.21	-.07	-.01	-.47	-.11	.12	
10. Use of advanced technology	.20	.40	-.38	.17	-.18	.06	-.08	.44	.09	-.19	-.83
11. Degree of mechanization	10.73	13.89	-.41	.22	-.20	.09	.03	.52	.07	-.22	-.72
12. Density (thousands)	606.23	307.34	.14	-.06	-.01	-.00	.18	-.55	-.14	.02	.49
13. Institutional support	.32	.46	.06	-.03	.36	-.00	.15	-.44	-.13	-.00	.39
14. Organization's age	38.60	26.23	.02	.01	-.27	.00	-.23	.18	-.04	-.13	-.06
15. Franco era	.48	.49	.23	-.09	.34	-.02	.17	-.57	-.12	.06	.54
16. Number of previous coop transformations	.28	.73	.04	-.00	.62	.01	.05	-.18	-.04	-.02	.18
17. Gross national product	40777	20670	-.30	.11	-.42	.03	-.18	.68	.11	-.07	-.63
18. M³ of rainwater	559.04	163.69	.01	-.01	-.06	-.02	.02	.16	-.04	-.01	.08
19. Aggregate supply standard deviation	267699	140293	-.26	.14	-.24	.03	-.10	.69	.05	-.08	-.42
20. Endogeneity control	.03	.34	.04	.01	-.28	.06	-.04	-.06	-.06	-.04	.05

Variable	10	11	12	13	14	15	16	17	18	19
11. Degree of mechanization	.69									
12. Density (thousands)	-.44	-.48								
13. Institutional support	-.34	-.38	.92							
14. Organization's age	.03	.08	-.24	-.21						
15. Franco era	-.48	-.52	.85	.70	-.23					
16. Number of previous coop transformations	-.16	-.18	.44	.45	-.08	.33				
17. Gross national product	.57	.65	-.88	-.75	.27	-.85	-.36			
18. M³ of rainwater	-.06	-.05	.20	.25	-.03	.05	.04	-.14		
19. Aggregate supply standard deviation	.38	.45	-.37	-.23	.15	-.48	-.15	.55	.15	
20. Endogeneity control	-.04	-.05	.12	.11	.00	.09	.24	-.10	.00	-.05

* Correlations ≥ I.01I are significant at $p < .00001$.

ty of failure (positive) and historical target achievement (negative) tends to be higher among non-family-owned olive oil mills than among those that are family owned (the differences are statistically significant at $p < .001$). This suggests, consistent with our hypotheses, that non-family firms are more willing to give up control in order to reduce the performance hazard.

In testing hypothesis 1, that family firms will prefer to retain control, the dependent variable was loss of control (i.e., joining the coop), and the predictor of interest was whether the firm was family owned (coded as 0) or not (coded as 1). The event history analysis using a Cox model summarized in model 1 of table 4 shows that there is a strong negative relationship between family ownership and willingness to cede control ($p < .0001$), which provides strong support for hypothesis 1.

In testing hypothesis 2, the dependent variable was also loss of control (i.e., joining the coop), and the three predictors of interest corresponded to each of the family stages. In a Cox model, this hypothesis would be supported if the coefficient were negative and showed a statistically significant declining

Table 4

Cox Models Predicting Control Loss (Joining a Coop) of Olive Oil Mills Based on Family Status*

Variable	Model 1	Model 2
1. Probability of failure	-.01	-.01
	(.01)	(.01)
2. Historical target achievement	-.18	-.17
	(.15)	(.15)
3. Referent target achievement	.18*	.18*
	(.08)	(.08)
4. Aggregate supply (millions)	1.22	1.24
	(.65)	(.65)
5. Aggregate supply S.D. (millions)	1.05	.91
	(2.22)	(2.22)
6. Ownership of means of production	.11	.09
	(.19)	(.19)
7. Organization size	.01	.00
	(.01)	(.01)
8. Use of traditional technology	.21	.20
	(.75)	(.75)
9. Use of advanced technology	-1.00	-.97
	(1.23)	(1.22)
10. Degree of mechanization	-.00	-.00
	(.02)	(.02)
11. Density (thousands)	.00	.00
	(.00)	(.00)
12. Institutional support	-.17	-.13
	(1.21)	(1.23)
13. Organization age/100	.00	.00
	(.01)	(.01)
14. Franco era	-.26	-.26
	(.91)	(.91)
15. Number of previous coop transformations	.44****	.44****
	(.05)	(.05)
16. Gross national product	-.00	-.00
	(.00)	(.00)
17. M³ of rainwater	-.00	-.00
	(.00)	(.00)
18. Family owned	-4.47****	
	(.23)	
19. Family Stage I		-4.86****
		(.29)
20. Family Stage II		-3.68****
		(.39)
21. Family Stage III		-3.19****
		(.59)
χ^2	759.19****	768.15****
Degree of freedom	18	20

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; **** $p \leq .0001$.
* Standard errors appear in parentheses.

magnitude moving from Stage I (founding-family-controlled and managed) to Stage II (non-founding extended family owned and managed) to Stage III (extended family owned and professionally managed). As shown in model 2 of table 4, there is strong support for hypothesis 2. There is a declining magnitude in the loss-of-control coefficients, meaning that more firms are willing to join the coop as one moves from Stage I (row 19) to Stage II (row 20) to Stage III (row 21). The differences in magnitude between the three coefficients (i.e., one for each family stage) are statistically significant at $p < .0001$. Though different in their magnitude, as hypotheses 2 predicted, all three family coefficients are also negative and highly statistically significant, which is consistent with hypothesis 1.

Table 4 also shows that there is a very strong positive relationship between the number of previous coop transformations in a particular district (row 15) with a focal firm's decision to join a coop. This suggests that local norms play an important role in these decisions, although family status exerts a strong independent effect even after partialling out the influence of this and other control variables.

To test hypotheses 3a, 3b.1, and 3b.2, we calculated three regression models, corresponding to the three performance hazard measures as dependent variables, as shown in models 1–3 in table 5. The first is a Cox model in which the dependent variable is probability of failure at t + 1 and the predictor is whether or not the family-owned firm chose to remain independent (i.e., retain control) or join the cooperative (i.e., relinquish control) at t. The second and third models in table 5 consist of a data panel regression predicting historical (model 2) and referent (model 3) target achievement at

Table 5

Performance Hazard Assumed by Olive Oil Mills Based on Family Ownership*

Variable	Cox regressions predicting probability of failure Model 1	Data panel regressions predicting historical target achievement Model 2	Data panel regressions Predicting referent target achievement Model 3
1. Aggregate supply (millions)	−1.29••••	−.00	−.17•
	(.26)	(.00)	(.07)
2. Aggregate supply S.D. (millions)	2.80•••	.00	−.85••••
	(.88)	(.00)	(.02)
3. Ownership of means of production	−.27••	.00	.03••••
	(.10)	(.00)	(.00)
4. Organization size	−.09••••	.00••••	.01••••
	(.01)	(.00)	(.00)
5. Use of traditional technology	−.36	−.00•	−.10••••
	(.39)	(.00)	(.01)
6. Use of advanced technology	−.90	−.00	−.13••••
	(.54)	(.00)	(.01)
7. Degree of mechanization	−.14••••	.00••••	.01••••
	(.01)	(.00)	(.00)
8. Density (thousands)	−.00•	.01	.00
	(.00)	(.00)	(.00)
9. Institutional support	.02	−.00	.01
	(.40)	(.00)	(.00)
10. Organization age	.00	.00•••	−.00•••
	(.00)	(.00)	(.00)
11. Franco era	1.94••••	.00	.01
	(.29)	(.00)	(.00)
12. Number of previous coop transformations	−.01	.00	.00•••
	(.08)	(.00)	(.00)
13. Gross national product	.00	.00	−.00••••
	(.00)	(.00)	(.00)
14. M³ of rainwater	.00••••	−.00	.00
	(.00)	(.00)	(.00)
15. Endogeneity control	.32	.03••••	−.04••••
	(.17)	(.00)	(.00)
16. Family owned	.66••••	−.01••••	−.17••••
	(.12)	(.00)	(.00)
17. Constant		.00	.00••••
		(.01)	(.02)
χ^2	449.8••••	490.85••••	14241.2••••
Degree of freedom	16	16	16

• $p \le .05$; •• $p \le .01$; ••• $p \le .001$; •••• $p \le .0001$.
* Standard errors appear in parentheses.

t + 1; as in the first regression, the predictor of interest is continued family control versus relinquishing control by joining the coop at t. These three sub-hypotheses would be supported in table 5 if the coefficient for the family-owned variable were positive for probability of failure (model 1) and negative for the two target achievement measures (models 2 and 3), meaning that the family firm faces a greater performance hazard by choosing to retain control instead of joining the coop. The results in table 5 show that there is strong empirical support for all three sub-hypotheses. If the family chooses to retain control of the firm, it faces a dual peril: the probability of failure is much higher, and target achievement tends to be much worse, either in comparison to the firm's past performance or relative to the performance of referent firms.

Hypothesis 4 proposed a U-shaped relationship between venturing risks (as measured by the coefficient of variation) and divergence from the aspiration level (as measured by the discrepancy in percentage terms between performance at t + 1 and performance at t, the target achievement, which of course would be negative if performance declines and positive if performance improves. To test this hypothesis, we calculated a data panel regression by first entering the two target achievement measures, historical and referent, and then their squared term as independent variables, with the coefficient of variation as the dependent variable. The results for the squared target achievement measures in rows 19 and 20 of table 6 show that the non-linear relationship between target achievement and the coefficient of variation is highly significant for both historical and referent attainment discrepancy.

Hypothesis 5, which proposed an inverse relationship between the probability of failure and the coefficient of variation, also finds strong support in table 6. In contrast to the study by Miller and Chen (2004), this provides strong support to March and Shapira's notion that investments in projects with higher outcome variance (i.e., venturing risks) diminish as the threat to survival increases. Because family-owned firms are expected to have a higher probability of failure (as per hypothesis 3a), we would then expect to find that these firms would show a lower coefficient of variation than non-family firms. This prediction, formalized in hypothesis 6, finds strong support in row 21 of table 6.

Hypothesis 7 tests whether family ownership moderates the expectations of the behavioral model (as per hypothesis 4) of a non-linear relationship between distance from the aspiration level (or target achievement) and risk taking (as measured by the coefficient of variation). This relationship finds strong support in the corresponding interaction term for historical target achievement and family ownership shown in row 23 of table 6. This interaction is plotted in figure 1, with distance to historical target achievement along the horizontal axis and the coefficient of variation along the vertical axis. While both family and non-family curves in figure 1 have a shape similar to that reported by Fiegenbaum and Thomas (1988), the curve relating venturing risks (coefficient of variation) to distance to the historical performance target is lower for family than non-

Table 6

Panel Regression Predicting Venturing Risks Assumed by Olive Oil Mills Based on Family Ownership*

| Predictor variable	Coefficient of variation
1. Probability of failure	-.07••••
	(.03)
2. Historical target achievement	.16••••
	(.02)
3. Referent target achievement	.17••••
	(.00)
4. Aggregate supply (millions)	-1.90••••
	(.45)
5. Aggregate supply S.D. (millions)	1.04••••
	(.13)
6. Ownership of means of production	.00
	(.00)
7. Organization size	-.00••••
	(.00)
8. Use of traditional technology	-.01•
	(.00)
9. Use of advanced technology	.03••••
	(.00)
10. Degree of mechanization	.00
	(.00)
11. Density (thousands)	.01
	(.01)
12. Institutional support	-.01••••
	(.00)
13. Organization's age	.00••••
	(.00)
14. Franco era	.02••••
	(.00)
15. Number of previous coop transformations	.00
	(.00)
16. Gross national product	.00••••
	(.00)
17. M^3 of rainwater	.00
	(.00)
18. Endogeneity control	-.00
	(.00)
19. Historical target achievement^2	.34••••
	(.02)
20. Referent target achievement^2	.03••••
	(.00)
21. Family owned	-.02••••
	(.00)
22. Historical target achievement × Family owned	.18••••
	(.03)
23. Historical target achievement^2 × Family owned	-.14••••
	(.03)
24. Referent target achievement × Family owned	-.05••••
	(.00)
25. Referent target achievement^2 × Family owned	-.00
	(.00)
26. Constant	.03••••
	(.01)
χ^2	8781.99••••
Degree of freedom	25

• $p \le .05$; •• $p \le .01$; ••• $p \le .001$; •••• $p \le .0001$.
* Standard errors appear in parentheses.

family firms. As can be seen in row 25 of table 6, the interaction term is not statistically significant when target achievement is measured in terms of discrepancy from the performance of referent firms.

Figure 1. Interaction effect of family ownership and historical target achievement on coefficient of variation.*

Historical Target Achievement

— Non-Family Firms — Family Firm
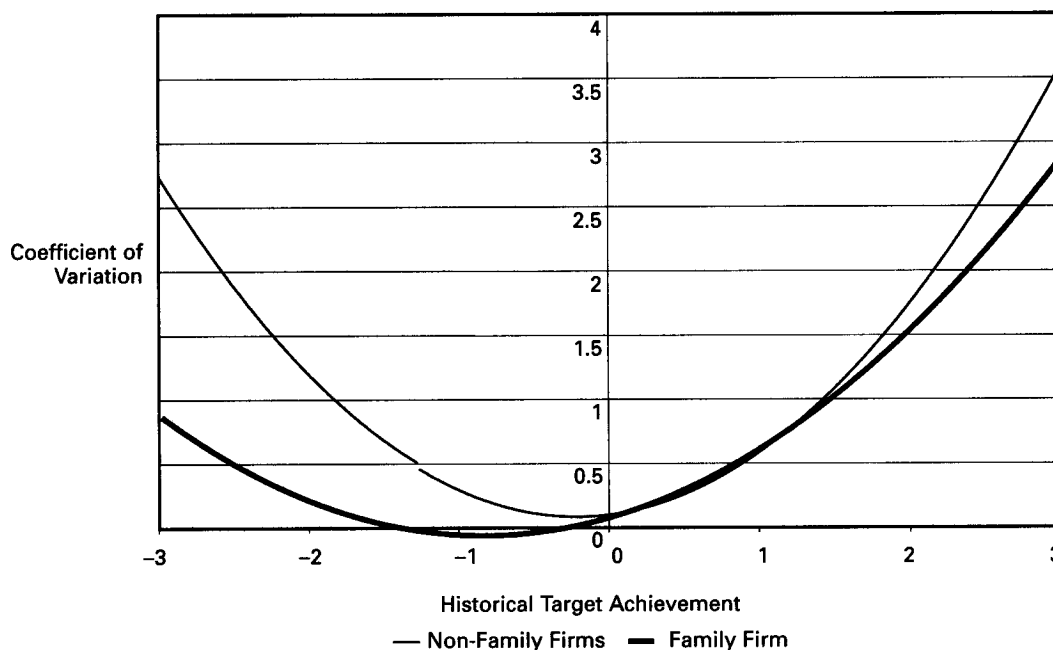
* For both figures, the historical target achievement (horizontal axis) corresponds to percentage changes in
tons of olives sold (which could be either positive or negative) between t and t+1, with 0 = target achievement
or no observed changes, 1 = 100% change, 2 = 200% change, 3 = 300% change, and 4 = 400% change.

DISCUSSION

We have argued that family firms frame the relinquishing of
socioemotional endowment as a major loss and, consistent
with a behavioral perspective, are willing to accept a greater
performance hazard to mitigate that loss. This is in contrast
to much of the prior literature, which has proposed that as a
result of highly concentrated undiversified assets, family
firms are more risk averse. Specifically, we have shown that
when family firms are faced with a strategic choice dilemma
that involves (1) a high degree of certainty of improved finan-
cial gains and a better probability of survival, but loss of fami-
ly control (i.e., joining the coop), and (2) a greater risk of
declining performance and catastrophic business failure, but
retention of family control (i.e., choosing to remain indepen-
dent and not join the coop), the clear winner is the "risk will-
ing" decision. At the same time, these firms tend to avoid
investments that increase their performance variability even
under a negative framing (performance lower than a historical
referent point), as this might exacerbate the performance
hazard that they have freely accepted in exchange for contin-
ued family control.

More fine-grained findings of this study also support the
above interpretation. Namely, our results show that willing-
ness to give up family control is lowest in those stages in
which family influence is strongest, when socioemotional
endowment is highest. And consistent with our predictions,
additional analysis (available upon request) shows that as
economic prospects worsen relative to past performance, the
family firm becomes more reluctant to join the coop, and

lose control of the organization, than non-family firms. That is, family firms take bad or seemingly irrational risks to mitigate threats to their socioemotional wealth. Relatedly, our study supports behavioral predictions (cf. Fiegenbaum and Thomas, 1988) that as firms deviate from the reference point, they are more willing to invest in uncertain projects (i.e., those with high performance variance) and March and Shapira's hypothesis that as the probability of failure increases, firms become more conservative. But the sensitivity of the performance variance to the distance from the historical performance target is lower among family than non-family firms, and family firms are less willing to engage in projects with high outcome variance (i.e., they exhibit lower venturing risk) than non-family firms.

Much of the literature in entrepreneurship suggests that "risks—perceived and real—abound at every stage of the entrepreneurial process" (Zahra, 2005: 25). Presumably, this should be more evident at the founding-family stage. In our study, we did not find significant differences by family stage for any of the business risk measures (results available upon request). Perhaps this is due to the fact that many of the founders in our sample are "necessity entrepreneurs," who become business owners because other employment options are either absent or unsatisfactory, rather than "opportunity entrepreneurs," who try to exploit a perceived business opportunity.

We reinterpreted much of the prior findings and theoretical justification for those findings, which argued that family firms are inherently more risk averse because of undiversified wealth. Based on our theoretical logic and empirical results, we suggest that this is not the case. In fact, results suggest that these firms are willing to accept a performance hazard in order to retain family control and, in doing so, avoid high variance projects that might exacerbate this hazard. We also expand research on prospect theory and the behavioral theory of the firm into a new domain, incorporating notions of socioemotional utility in how decisions are framed within the context of family firms. Our findings have important practical implications, because organizational risk preferences may affect new product introductions, capital expenditures, entry into new markets, the willingness to use non-traditional methods, investment policies, and the like (Larraza-Kintana et al., 2007).

Having access to 54 years of data for 1,237 firms allowed us to circumvent the drawbacks associated with much of the cross-sectional research on risk taking in general and family firms in particular. We were able to examine longitudinally how these firms responded in terms of venturing risks (i.e., observed variability in outcomes) when faced with below-target performance and a high probability of failure. Further, this study is one of a few on corporate governance issues that uses non-conventional data from an international setting, in contrast to heavily mined U.S.-centric data. This takes on added value given the paucity of rigorous studies on family firms (Dyer, 2003). The dominance of family firms in absolute numbers and as a percentage of business around the world suggests that more research and knowledge of family busi-

nesses could be critical to economic development on a global basis.

One implication of this study is that family firms may be just as rational as non-family firms when it comes to making risky business decisions. Yet the criteria for judging whether the decision is risky varies by the two types of firms. For family firms, a key criterion, or at least one that has a greater priority, is whether their socioemotional endowment will be preserved. And as we have shown here, these firms are quite willing to face a greater performance hazard so as not to jeopardize that endowment. For non-family firms, financial criteria seem to be most important when it comes to assessing the value of a business decision, as they are less driven by the need to protect their socioemotional endowment.

Our study suggests that we need to reinterpret the arguments and empirical findings of March and Shapira (1987), Fiegenbaum and Thomas (1988), Wiseman and Bromiley (1996), and Miller and Chen (2004), among others, given that predictions about risk-taking behaviors depend on the type of risk on which the entity examined focuses. For instance, a firm that performs below target takes riskier actions, as evidenced by greater performance variability, to prevent financial losses (see Fiegenbaum and Thomas, 1988). Yet family firms are willing to risk financial losses and bear a greater probability of failure in order to maintain control of the firm. Both types of firms are taking major risks, hoping not to fail, although the nature of the risk and the referent point being used (financial versus socioemotional) are very different. This suggests that behavioral and agency models should be expanded to consider the role of non-financial issues (for related discussion, see Gomez-Mejia, Wiseman, and Johnson Dykes, 2005; Gomez-Mejia and Wiseman, 2007).

The differences between family and non-family firms reported here cannot be satisfactorily explained by standard economic accounts of a firm's behavior. Using the terminology of Meyer and Zucker (1990: 68), it seems that many family firms live in a state of "permanent failure," which they define as "a condition characterized by sustained low performance and high persistence." Perhaps family firms are able to do this because they have access to what some refer to as patient capital or survivability capital (see Sirmon and Hitt, 2003) that other firms may be unable to access. For instance, these firms may be able to call on extended family members for help in times of crisis, hire relatives who are willing to work at below-market wages (Gomez-Mejia, Larraza-Kintana, and Makri, 2003), or receive a loan from the collective pool of family savings as needed so that the firm does not have to tap independent debt holders who want the debt repaid along with interest in a specified period of time. Even if this were the case, however, the probability of failure of family firms is higher than that of non-family firms.

Cyert and March (1963) hypothesized that firms set their aspirations or targets based on their own past performance and the experience of referent firms, but as Miller and Chen (2004) noted, "it remains unclear how firms weigh their own performance and the performance of other firms when deter-

mining their aspiration level." In general, we found that attainment discrepancy relative to the firm's own past performance is a better predictor of venturing risks and serves to distinguish better between the behaviors of family and non-family firms. Perhaps the relatively simple firms in this study prefer to use a rule of thumb of "how well we are doing now in comparison to how well we did before" when considering risky decisions, market data on the performance of referent firms may be difficult to find, or these firms are less concerned with market pressure because they are not publicly traded.

This study has some important limitations. These include the absence of information about ownership distribution within each firm, potential problems with extending findings beyond the boundaries of one industry in a particular region of the world, reliance on archival data sources to infer reasons as to why firms behave in a particular manner, and the use of relatively simple firms, which may raise concerns about generalizability. At the same time, most of these limitations have a "silver lining," as discussed earlier, for instance, greater control of confounding variables and access to a large sample over a long period of time. They also raise several interesting issues that provide fertile ground for future research.

Explaining the anomalies. As in most social science research, the main conclusions of this study pertain to group differences (e.g., family vs. non-family firms) on the variables of interest (e.g., remaining autonomous versus joining a coop). And while the observed differences may be highly significant, the exceptions to the general trend may be just as intriguing and theoretically important. Although they constitute a smaller proportion, there are many family firms, including some that should be at the high end of socioemotional endowment (such as those in the founding-family stage) that appear to make business decisions with financial rather than socioemotional criteria in mind. This raises the question of what explains the behavior of those that do not fit the norm. Are there some unique attributes in terms of leadership style, educational background, personality traits, or family dynamics that explain why some family firms are capable of making business decisions with financial rather than socioemotional criteria in mind? It is also possible that a firm's choice about remaining independent or joining the coop may be partly a product of earlier strategic decisions (e.g., land purchases) or resource availability (e.g., inherited family wealth) that could not be considered in this study because the data are not available.

Self justification. Our study shows that many family firms consciously make a decision that places the organization at peril of total ruin through its failure to survive, which of course would imply not only the disappearance of all firm-specific socioemotional endowment but also the loss of financial assets. Beyond the cognitive arguments advanced in this paper to explain this behavior, family executives may engage in self-delusion or believe that they have more control over the situation than they really have, thereby failing to gauge the true risks involved. As March and Shapira (1987: 1404) noted, based on field interviews with managers, "deci-

sion makers sometimes deny risk, saying that there is no risk or that it is so small that it can be ignored. A common form of denial involves acceptance of the actuarial reality of the risk combined with a refusal to associate that reality with one's self." Perhaps the felt need to preserve the socioemotional endowment in family firms reinforces this tendency to see risk as controllable and as a danger applicable to someone else. Hence, these family executives may be guided by a false sense of security, confident that risk is manageable and that they can muster the skills and information needed to reduce uncertainty.

Contextual ambiguity. One of the strengths of the present study is that information about the financial benefits and the risk-reduction properties of a particular strategic choice (i.e., joining the coop) are well known to the firms involved. The loss of family control associated with that strategic choice is also plain for everyone to see. Hence when a firm foregoes the advantages of that strategic choice (i.e., coop membership) in order to maintain independence (and thus bear greater risks), the decision cannot be blamed on ignorance or faulty data. Of course, in most cases, the decision choice is not as clear cut as it is for olive oil mills. Decisions concerning R&D investments, entering new markets, capital expenditures, debt financing, and the like involve more ambiguity in terms of the associated financial risks, returns, and potential loss of family control (Makri, Lane, and Gomez-Mejia, 2006). It would be useful to reconsider the hypotheses and empirical findings of this study by taking into account contextual ambiguity, for instance, if family firms become more risk averse or risk willing in their business decisions when the threat to socioemotional wealth is vague and difficult to discern.

Multiple stakeholders. The organizations included in this study are relatively simple. Though we did not have precise ownership data for each family member, there is little doubt in our mind that the family, either in its nuclear or extended form, was the sole firm owner. By contrast, as documented by Gomez-Mejia, Larraza-Kintana, and Makri (2003), the typical large family firm in North America tends to be rather heterogeneous in its ownership structure, often involving institutional investors, banks, and non-family owners, all of whom are residual risk bearers and residual claimants. These parties as well as capital markets may exert their own unique influence over family and non-family firms. As an extension of the current study, it would be interesting to analyze the extent to which mixed ownership configurations affect the family firm's business risk decisions in tandem with concerns about its socioemotional endowment.

Innovation. Most of the literature on family firms and innovation we discussed earlier suggests that family firms are less innovative because they prefer to avoid the risk of failure associated with the new and untried. In fact, Morck and Yeung (2003: 377) claimed that low business innovativeness and family dominance go hand in hand and that "old, moneyed families block creative destruction among their own firms." One question that arises in the context of this study is if lower levels of innovation result from the fear of losing

family control rather than from an aversion to financial risk. For instance, innovation often requires acquiring expertise from outside the firm (i.e., non-family) and giving more autonomy to knowledge-intensive managers who often cannot be groomed from within the family firm. For some family firms, maintaining family control may be a higher priority than innovating.

We have argued and found empirical support for the idea that family firms are risk willing and risk averse at the same time because a prime motivation of owners is to preserve their socioemotional wealth. Other authors have argued that family altruism (attending to the welfare of next of kin) represents a form of agency problem endemic to these organizations that often leads family firms to make decisions that are economically irrational (Schulze, Lubatkin, and Dino, 2003b). Perhaps a more accurate depiction is that an important criterion of success for these firms is that they be able to exercise family influence and avoid socioemotional losses, which might prompt owners to make risky business decisions with a high probability of negative outcomes. From the owners' point of view, this could be seen as a rational strategy to pursue a key non-financial objective despite its potential downside. Thus many family firms around the world emerge and survive through generations not because they are the most efficient or most profitable form of organization but because they meet the socioemotional needs of their owners. Society could benefit to the extent that these firms employ a high percentage of the population, and the owners' drive to create and sustain the family's socioemotional endowment, while perhaps receiving modest returns, makes this possible. The situation, of course, becomes considerably more complex when the family is no longer the sole owner, and other principals with different objectives, such as institutional investors, enter the picture. But this type of ownership structure applies to a small proportion of family firms, particularly outside North America. Globally, family-controlled firms are an integral part of the fabric of their local and national economies, and we need more studies, building on this one, that take their differences into account.

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