Can we afford it? Investment decisions of family and nonfamily owners.

By: Dianne H.B. Welsh and Thomas Zellweger

Welsh, D.H.B. & Zellweger, T. (2010, July). Can we afford it? Investment decisions of family and nonfamily owners. *Academy of Entrepreneurship Journal*, 16 (2), 21-41

Made available courtesy of Allied Academies:
http://www.alliedacademies.org/public/journals/JournalDetails.aspx?jid=6

*****Reprinted with permission. No further reproduction is authorized without written permission from Allied Academies. This version of the document is not the version of record. Figures and/or pictures may be missing from this format of the document.*****

Abstract:
This study focuses on an issue particularly relevant in these difficult financial times. Can family businesses afford the risk associated with making investments that could generate higher returns? Studies examining financing behavior of family firms report higher control risk aversion than nonfamily firms, whereby control risk is measured through leverage levels. We found that family firm owners' degree of control risk aversion depends on reference points. Investment alternatives implying higher leverage levels become significantly more attractive to family owners when considered from a secure reference point with low leverage levels, than when the same investment alternatives are assessed from a less secure reference point with higher leverage levels. Implications are discussed.

Article:
Studies examining leverage levels of family firms report a rather unanimous picture: be they large or small, publicly quoted or privately held, family firms exhibit lower leverage levels and hence control risk than their nonfamily counterparts (e.g., Agrawal & Nagarajan, 1990; Villalonga & Amit, 2006; Mishra & Mc Conaughy, 1999; Gallo & Vilaseca, 1996). While these findings are consistent with the stereotype of the financially conservative and risk averse family firm, they also suggest that the majority of these firms have a suboptimal capital structure that relies heavily on internally generated capital, which not only inflates these firms' average cost of capital and hence suppresses their value but also limits the rate of firm growth to the growth of internally generated assets (Schulze & Dino, 1998). These preconditions seem to make family firms ripe candidates for underinvestment which undermines their competitive position and, ultimately, threaten their very survival.

However, the predominant role of family firms in the economic landscape stands in strong contrast to these predictions. In fact, the role of family firms at the forefront of many industries challenges the assumption that these firms should be permanently risk averse. In fact, risk taking and funding of risky investments such as R&D, are necessary for a firm's long term survival (Gedajlovic, Lubatkin & Schulze, 2004). In this context, our study sets out to shed light on the risk taking propensity of family firm owners, thereby focusing on the control risk propensity of family firm owners, measured in terms of the leverage levels of the firms they control (Mishra & Mc Conaughy, 1999).

More specifically, we investigate whether family firm owners, at any time, display strong preferences for investments that are characterized by low leverage levels, or whether there are specific situations where family firm owners are willing to take additional control risk in terms of investments implying higher leverage levels, for example to tackle growth opportunities that ultimately assure the family firm's continuity and protect the family's wealth, given the pivotal role of adaptation and risk taking for long-term business survival. To answer this research question we draw from prospect theory (e.g. Thaler, 1980; Tversky & Kahneman, 1991) that reaches beyond the paradigm of pure financial rationality and the sole relevance of exogenous determinants of decision taking, such as the risk - return profile of the investment (Cho, 1998). The use of prospect theory seems warranted since managerial preferences may provide a behavioral basis for the understanding of capital

structure of firms (Barton & Gordon, 1988), and since family firms have been found to be influenced by personal or family-induced biases and preferences (e.g., Kellermanns, 2005; Gomez-Mejia et al., 2007).

A constitutional element of prospect theory is that individuals tend to make decisions based on reference points. In light of the undiversified holdings of family owners (Anderson, Mansi & Reeb, 2003) and the strong attachment they display to their current activities (Sharma & Manikutty, 2005; Zellweger & Astrachan, 2008), we expect that these owners evaluate investment alternatives that imply differing leverage levels based on reference points, considering "Can we afford it?". In contrast, we expect that nonfamily owners will evaluate the same investment alternatives independent from endowment considerations and reference points due to the opportunity to hold more diversified assets and less emotional attachment to the business.

In exploring investment decision making of family and nonfamily owners through the lens of prospect theory, we add to the literature in four important ways. First, we add to the growing body of literature applying prospect theory to the case of family firms (e.g. Gomez-Mejia et al., 2007; Zellweger & Astrachan, 2008) and provide direct evidence of endowment considerations of family owners as opposed to non-family owners, using an experimental research design. Thereby, we not only add to the family business literature but also to endowment literature by showing that the type of individual with his or her emotional ties to an asset may impact the strength of the endowment effect. Second, we add to the question whether family firms and family firm owners really are averse to increased leverage levels and control risk. We provide a more fine-grained perspective on control risk aversion of family firm owners by showing that this aversion for increased leverage levels depends on reference points. Third, our data stemming from Europe and the United States, we provide preliminary evidence to cultural boundaries to the endowment effect, as suggested by Huck, Kirchsteiger and Oechssler (2005). Finally, our study talks to the literature on financing of family firms (e.g., Villalonga & Amit, 2006; Mishra & Mc Conaughy, 1999; Gallo & Vilaseca, 1996). For researchers and practitioners our findings are insightful to understand when family firms are likely to opt for investment decisions with higher levels of leverage, or when they prefer investments with lower control risk.

Our paper is structured as follows. First, we discuss the theoretical foundations of our paper and develop a set of hypotheses. We then introduce the experimental methodology that refers to the original works by Tversky and Kahneman (1991). Subsequently, we perform our analysis using a sample of 181 owners and then conclude with the interpretation of results and guidance for future research.

THEORETICAL FOUNDATIONS AND HYPOTHESES

In their path-breaking work, Tversky and Kahneman (1991) suggest that the outcome of risky prospects are evaluated using a value function that is common to most individuals. The theory centers around the concept of subjective value - gains or losses are defined in terms of a reference point (Myagkov & Plott, 1997). A key assumption of prospect theory is that the function relating losses to subjective value is steeper than the function relating gains to subjective value. This means that for any given magnitude, losses tend to "loom larger" than gains in the thinking of individuals and in their decisions. For example, a loss of US$1,000 is felt more strongly (has a larger negative value) than a gain of US$1,000, even though the amounts involved are identical (Baron, 2004). This most distinctive prediction of prospect theory arises from a property of preferences called loss-aversion: the response to losses is consistently much more intense than the response to corresponding gains, with a sharp kink in the value function at the reference point (Tversky & Kahneman, 1991). Loss aversion implies that the same difference between two options will be given greater weight if it is viewed as a difference between two disadvantages relative to a reference state than if it is viewed as a difference between two advantages relative to the reference state (Tversky & Kahneman, 1991). Accordingly, the actual decision is impacted by the reference state that induces loss averse behavior.

There is a strong link between prospect theory and management practice. One such implication pertains to the organization's willingness to innovate (Porter & McIntyre, 1984) and in more general terms, to undertake decisions that depart from the reference point. Owners whose decision making is affected by reference points

display a tendency to consider "what is, must be best", which hinders timely adaptation to changing environments just as proactive moves and risk taking.

Although there are several different ways in which risk taking is defined in the literature, this is the dominant belief in family business research, asserting that over time family firms often become conservative, unwilling or unable to take risks (Autio & Mustakallio, 2003; Zahra, Hayton & Salvato, 2004). Founders of family firms, who desire to build a lasting legacy, may become more conservative in their decisions because of the high risk of failure of their ventures (Morris, 1998), as well as the risk of destruction of family wealth (Sharma, Chrisman & Chua, 1997). Family firms have also been seen to choose conservative strategies as a result of their organizational cultures (Dertouzos, Lester & Solow, 1989). Naldi, Nordqvist, Sjoberg and Wiklund (2007) suggest that family firms take risk to a lesser extent than nonfamily firms. Management literature proposes the following definitions of risk: Business risk, resulting from variability in a firm's performance (Zahra, 2005); Ownership risk, the risk related to holding an undiversified share of equity (Fama & Jensen, 1983); Control risk, the risk of losing control over the company through excessive leveraging (Mishra & Mc Conaughy, 1999); Financial risk, used synonymously with control risk (Schulze & Dino, 2004). Since we are investigating the risks associated to leveraging, we consistently use the term "control risk" in this study

Applying prospect theory to the case of corporate owners' risk taking propensity, literature suggests that owners should immediately display loss averse and reference point dependent behavior once they have endowed a possession (Boven, Loewenstein & Dunning, 2003) - whether the owner is controlling a family or a nonfamily firm. However, we expect that such an effect will be particularly strong in the context of family owners and family firms, for two main reasons.

First, we argue that family owners have a stronger tendency to be affected by reference point consideration and hence loss averse behavior due to their large undiversified assets tied to the organizational ownership and ineffective separation of business and personal assets.

In fact, even in an agency world one would argue that a firm's risk taking propensity should be influenced by its ownership structure (Wright, Ferris, Sarin & Awasthi, 1996). Zajac and Westphal (1994) argue that individuals become risk averse and prefer lower leverage levels as their ownership in the firm increases, since the owner bears the full financial burden of failed investment (Gedajlovic, Lubatkin & Schulze, 2004). Complementing this line of thinking, prospect theory predicts that since individuals tend to evaluate options with regards to potential losses, and tend to overvalue a potential loss in comparison to an equal potential gain, the potential loss might loom particularly large in light of the consequences for undiversified family owners. Beyond financial damages, business families might also face serious personal and family reputational damages if failing (Dyer & Whetten, 2006). Moreover, it can be expected that such a reference point dependency might be particularly powerful in case investments not only affect the business but also the private sphere. Many family owners not only have a large fraction of their fortune invested in the firm but also experience an ineffective separation between private and business wealth, represented for example by pledging personal collateral or guarantees to secure debt on the side of the firm (Voordeckers & Steijvers, 2006). In sum, due to undiversified holdings and ineffective separation between personal and business finances we expect that the reference points bias the family firm owners' investment preferences, leading them to particularly weigh the potential loss when evaluating investment options.

The second reason why family owners are susceptible to be affected by reference point dependent decision-making relates to the observation that for family owners their stake in the family firm not only has financial meaning. In fact, there is strong evidence in family business literature suggesting that these owners feel attached to their firms since the ownership is representative of a family's business legacy and status in the community (Sharma & Manikutty, 2005). Recent literature tapping into the prospect theory suggests that family firm ownership is capable of creating emotional attachment to the ownership stake on the side of the owner (Gomez-Mejia et al., 2007; Zellweger & Astrachan, 2008), whereby attachment is seen as a psychological extension to the endowment effect (Ariely, Huber & Wertenbroch, 2005). More specifically, it has been reported that

incumbents in family firms have problems in letting go, since they have endowed the emotional benefits from ownership, such as stature in the community (Le Breton-Miller, Miller, & Steier, 2004). Belk (1991) suggests that the strength of attachment may be indicated by behavioral tendencies such as willingness to sell possessions only above market value and can hence create endowment. Furthermore, possession attachment literature reports that people are particularly reluctant to give up affect-rich possessions, which have been endowed with a specific meaning through continuous caring and interaction or through the fact that they are representative of relatives (Schultz-Kleine & Menzel-Baker, 2004). Similarly, researchers in the fields of economic psychology report that people react to positive emotions with increased endowment considerations, which is seen as an effective response to these emotions (Lin, Chuang, Kao & Kung, 2006).

In light of the emotion-dense setting of most family firms, we expect that family firm owners should experience affective ties to their firms and hence exhibit heightened endowment considerations and loss aversion. Even though family firms can be plagued with conflicts, which could eventually lead to a reverse endowment effect (Lerner, Small & Loewenstein, 2004), the altruism based family relationships (Schulze, Lubatkin & Dino, 2003) and the stewardship rich context in most family firms (Eddleston & Kellermanns, 2006) should normally lead to positive endowment considerations and hence loss aversion. What is more, although the endowment effect can appear instantaneously (Kahneman, Knetsch & Thaler, 1991), research indicates that it increases over time (Boyce, Brown, McClelland, Peterson & Schulze, 1992) and that loss aversion might increase with experience, since thoughts might become increasingly channeled by past experience (Burmeister and Schade, 2007; Shepherd et al., 2003). This insight is further support for the argument that family firm owners should be particularly inclined to display loss aversion when evaluating investment decisions and associated risks.

In contrast to family owners, we expect that nonfamily owners display different preferences. Weber and Camerer (1998) show that stock market traders can still be biased by reference point dependent decision-making. Nevertheless, we expect that nonfamily owners when compared to family owners are bound to the firm to a much lower degree, and since the owners are normally less emotionally tied to their investment, we hypothesize that their investment preferences will be less influenced by personal preferences and biases. Accordingly we see such investor behavior more in line with the predictions of traditional financial theory, which postulates that investments are solely based on net present value and risk - return considerations and hence in line with financial preferences (Savage, 1954).

In sum, our considerations on undiversified ownership stakes and vanishing boundaries between business and personal finances, just as our reflections on emotional attachment lead us to hypothesize that investment decisions of family firm owners in contrast to their nonfamily counterparts will be particularly influenced by reference points, as opposed to their nonfamily counterparts.

Hypothesis 1: Family owners make investment decisions depending on reference points. In contrast, investment decisions of nonfamily owners are unaffected by reference points.

Based on prospect theory, Tversky, Sattath and Slovic (1988) have proposed that decision makers not only perceive losses and gains differently but also weigh an input higher if it is compatible with a desired output. Building on these premises and the fact that family owners are specific shareholders, we expect that family owners will evaluate investment alternatives differently, depending on the specific characteristics of the reference point. Family owners have been reported to display a strong preference for continuous family control and for autonomy in decision-making (Ward, 1997), which impacts the utility the owners feel towards debt (Romano, Tanewsky & Smyrnios, 2000). These goals seem to have a pivotal role in determining the exact shape of family owners' value function.

There is both conceptual and anecdotal evidence that family firms are unwilling to take investments that lead to a heightened leverage and hence control risk even if such an investment provides the opportunity to harvest higher returns on the remaining invested equity capital (Kellermanns, 2005; McMahon & Stanger, 1995). This is in line with Zellweger and Nason's (2008) perspective on substitutional relations between different

performance outcomes in family firms. Based on these studies that report that family firms exhibit strong preferences for continued family control and autonomy, we expect that family owners have an absolute preference for investments with a low control risk profile, even at the cost of a reduced return on their invested capital, given the compatibility of the investment profile with their specific preferences.

Beyond this normative assumption on investment preferences due to compatibility of investment profile and desired output, we hypothesize that the relative unattractiveness of investments with a higher control risk profile will depend on the reference point. In light of a reference point characterized by low control risk, and hence a preferable reference point given the inclination of family owners, these shareholders are expected to display a heightened willingness to opt for riskier investment alternatives and hence accept higher leverage levels. From such a "secure" vantage point, family owners should be more inclined to venture into riskier investment strategies.

In contrast, from a more exposed reference point, characterised by already increased leverage levels, we expect that family owners will be particularly hesitant to opt for risky investment alternatives. This view of investment decision making is in accordance with the findings by Leary and Roberts (2004) who report that owners tend to actively rebalance their leverage levels to stay within an optimal range of indebtedness. The probability of further leveraging increases (diminishes) if leverage level is low (high). Leary and Roberts (2004) report an asymmetrical adaptation of leverage, which means that firms are rather concerned with high than with low leverage, which is in line with what has been labelled Dynamic Pecking Order Theory (Fischer et al., 1989). Given the preferences of most family firms for independence and autonomy, such behaviour should be particularly prevalent in the context of family firms.

Consequently, extending our argument on reference point dependent preferences and goal compatibility of family owners we expect that the unattractiveness of investment alternatives leading to higher leverage levels should be decreasing, once the alternatives are considered from a secure vantage point, characterized by low leverage levels. In the opposite, we claim that the attractiveness of investment alternatives leading to lower leverage levels should be increasing, once the alternatives are considered from an insecure vantage point, with high leverage levels. In this case, family owners should be looking for investment strategies that better satisfy their independence goal, and hence strive to escape into "safe" investments for goal compatibility reasons.

In sum, we expect that these owners will actually consider the "affordability" of the investment in light of their preferences for continued family control, whereas nonfamily owners will we unaffected by such considerations. More formally stated:

Hypothesis 2: Family firm owners have a preference for investment alternatives leading to low leverage levels, whereby the relative attractiveness (unattractiveness) of low (high) leverage investment projects increases (decreases) if the project is evaluated from an insecure (secure) reference point, characterized by high (low) leverage levels.

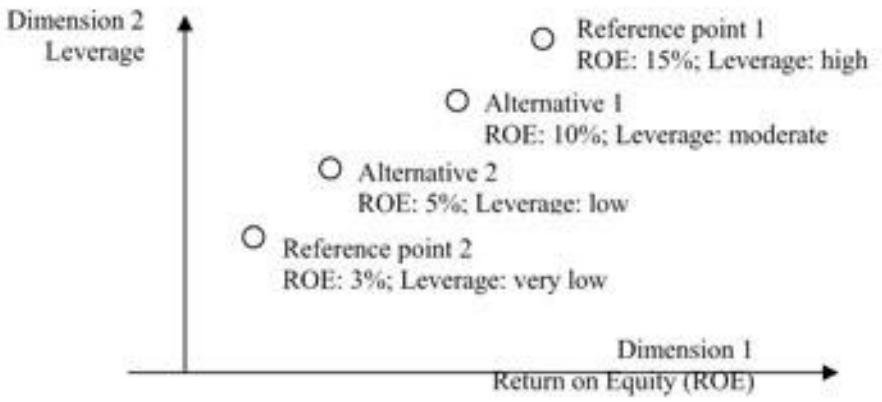
METHODOLOGY

To test our predictions on reference point dependent decision-making we opted for a research design that closely follows the methodology proposed by Tversky and Kahneman (1991: 1045).

We investigated reference point dependent decision-making in two decision scenarios. In the first scenario, we asked the owners to imagine they were controlling a firm experiencing high leverage levels and a corresponding return on equity (ROE) of 15%. Given this reference point they had to decide between two investment alternatives leading to distinct leverage / ROE combinations. The first investment alternative lead to a moderate leverage level and a ROE of 10%. The second investment alternative lead to a low leverage level and a ROE of 5%. The reference point was not given as an option.

In the second scenario the reference point was experimentally manipulated. We asked the owners to imagine their organizations were experiencing very low leverage levels and a ROE of 3%. Then, considered from this reference point, the respondents were asked to select between the same investment alternatives as the ones outlined above. As such, the basic features of the scenarios, the characteristics of the two investment scenarios were held constant, only the reference point changed.

Figure 1: Two reference points for the choice between alternative 1 and 2



In contrast to the studies by Burmeister and Schade (2007) and Samuelson and Zeckhauser (1988) we are therefore not investigating whether family owners display a status quo bias, defined as a disproportionate preference for the status quo, since the respondents had to pick one of the two alternatives and could not opt for the reference point, i.e. the status quo. Accordingly, we use a 2 x 2 experimental design in our study.

In light of our hypotheses, considerations of loss aversion and reference point dependency predict that more owners will choose the loss averse alternative 1 under reference point 1, than under reference point 2, summarized with the following frequency relations:

[h.sup.A1.sub.RP1] > [h.sup.A1.sub.RP2]

with h: frequency; A1: alternative 1; RP1: reference point 1

Similarly, more owners are expected to choose the loss averse alternative 2 under reference point 2, than under reference point 1:

[h.sup.A2.sub.RP2] > [h.sup.A2.sub.RP1]

Our hypothesis 1 predicts that the majority of family firm owners should opt in the way described above, whereas the preferences of the nonfamily owners should be unaffected by the reference point. Hypothesis 2, in turn, predicts that for family owners the relative attractiveness of alternative 1, the one with moderate leverage and a ROE of 10%, will increase once it is considered from reference point 2, the more "secure" reference point with very low leverage. In contrast, alternative 2 will become increasingly attractive for family owners once considered from reference point 1, the "insecure" reference point.

SAMPLE AND MEASURES

To test these predictions we conducted two experimental studies. In the first study we analyzed a sample of Swiss family and nonfamily firm owners. To solidify our arguments and to account for potential cultural differences that have been proposed to affect the endowment effect (Huck, Kirchsteiger & Oechssler, 2005), our

second sample investigates owners of U.S. family and nonfamily firms. Although the two studies have been performed sequentially, they are jointly analyzed below, since they used the same questionnaire and methodology.

We mailed surveys to a sample of 1200 privately held firms in Florida, Ohio, New York and Washington State and to 1215 privately held firms in Switzerland. The sample consists of 211 owners. Ninety firms originated from the U.S. and 121 from Switzerland. The return rates per country are thus 7.5% for the U.S. and 9.9% for Switzerland. The return rates are slightly higher for the Swiss sample, likely because these owners were affiliated with a Family Business Centre at a major Swiss University because of the long term relationships established with the Centre. The U.S. sample was drawn from owners that were affiliated with a regional accounting firm specializing in family businesses in the Midwest, as well as from Family Business Centers located in Florida and Washington State. Both of these Centers are less than five years old so the respondents had a shorter term relationship with the Centers. 70.9% of the respondents are men. The mean number of full time employees per firm is 90, the mean age of the respondents is 51 years. The sample consists of 141 family and 70 nonfamily firm owners, with a similar share of family and nonfamily firms in both samples. To distinguish between family and nonfamily firms we calculated the combined share the family controls in equity, board and management, indicated by the respondents. Accordingly, we measure Substantial Family Influence (SFI), as proposed by Klein (2000).

The analysis and the presentation of our findings is partly in line with Burmeister and Schade (2007). We therefore first compare basic distributions and report Chi square tests. We then determine whether the respondent opted for alternative 1 under reference point 1, for alternative 2 under reference point 2, and opted in a loss averse manner under both reference points. This provides us with three binary dependent variables, taking the value of 1 if the respondent showed a behavior consistent with predictions of loss aversion, and 0 if not. We then perform three binary logistic regressions to determine what affects a person's investment decision making. The independent variable is whether the respondent is owner of a family or a nonfamily firm.

Testing the hypotheses required that we control for the possible effects of other variables. Since performance and leverage levels vary across industries (Capon, Farley & Hoenig, 1990) we introduced four industry dummies: manufacturing, construction, commerce, and service. We furthermore controlled for size of the firms, since firm size might affect leverage levels (Garvey & Hanka, 1999). To adjust for skewness in the distribution of the size of the firms we used log (nr. of employees) in our analysis. We included age of the person as a control variable, since age may affect an owner's willingness to make risky decisions (Samuelson, 1994; Canner, Mankiw & Weil, 1997) and since endowment considerations are found to increase over time and experience (Boyce et al. 1992). We also controlled for gender in our analysis. Research on risk aversion reports that women tend to be more risk averse than men (Hartog, Ferrer, Carbonell & Jonker, 2002). Moreover, possession attachment literature proposes that women tend to display attachment to other possessions and for other reasons than men (Schultz-Kleine & Menzel-Baker, 2004). We also included the financial expertise of the owner as a control variable. For example, a financial officer might be more literate in assessing the trade off between return and control risk.

We include a categorical variable if the person worked as a CFO or indicated he/she had specific financial expertise through his work activity. This variable takes the value of "1" if the owner has such expertise, and "0" if not. Finally, we controlled for the country of origin to measure possible cultural differences regarding the endowment effect (Huck, Kirchsteiger & Oechssler, 2005) and to account for differences in interest rate levels.

RESULTS

The distribution of the answers by family and the nonfamily owners is provided in Figure 2. Family owners have a preference for alternative 2 under both reference points - the alternative with low leverage and a ROE of 5% - (See Figure 2a). 60.3% of the family owners opt for alternative 2 under reference point 1, inconsistent with our predictions on loss aversion. 52.1% of the family respondents opt for this alternative under reference point

2, consistent with our predictions. A Chi Square analysis on the distribution of the answers given by the family firm owners under reference points 1 and 2 shows significant differences (df = 1 = 42.2. p <.000) (See Table 1).

In contrast, the nonfamily owners have a preference for alternative 1 - the alternative with a moderate leverage level and a ROE of 10%. Under reference point 1, 57.7% of the nonfamily owners opt for alternative 1. Under reference point 2, alternative 1 was chosen by 50.0% of the nonfamily owners (See Figure 2b). Again, we conducted a Chi Square analysis on the distribution of the answers given by the nonfamily owners under reference point 1 and 2. The distribution of these answers was not significantly different. Apparently, the answers of the nonfamily owners are unaffected by reference points.

These results of basic distribution analysis provide preliminary evidence that whether the respondent was a family or nonfamily owner did have an impact on their preferences. We further substantiated this finding by performing the three binary logistic regressions (See Table 2).

In Model 1 we investigate a respondent's decision to opt for alternative 1 under reference point 1, hence to decide in a loss averse manner. We find that gender has a negative impact on the choice of alternative 1 under reference point 1. As hypothesized, we find that women tend to opt for alternative 2 under reference point 1 (p <.05). Moreover, cultural differences emerged. In contrast to the Swiss owners, the U.S. owners tended to prefer alternative 1 (p <.01). We find that family firm background has a negative impact on the likelihood of loss averse behaviour under reference point 1. Family firms have a significant preference for alternative 2 under reference point 1.

Table 1

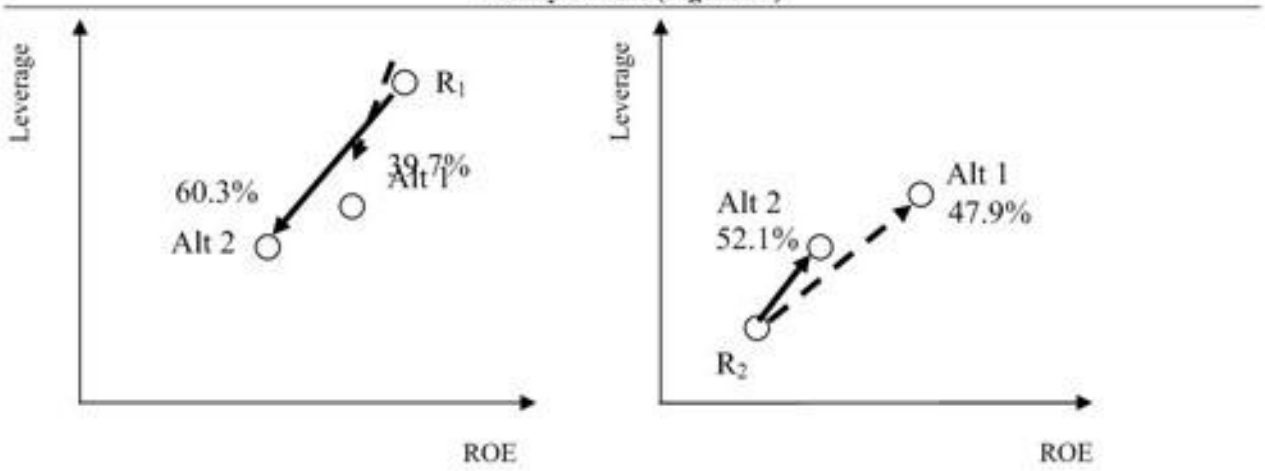
	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1 Loss averse behavior under reference point 1	0.427	0.496	1											
2 Loss averse behavior under reference point 2	0.52	0.501	-0.493***	1										
3 Loss averse behavior under both references	0.099	0.3	0.382***	0.321***	1									
4 Log (Nr. of employees)	1.491	0.623	0.085	-0.18*	0.002	1								
5 Manufacturing	0.205	0.405	0.09	-0.087	0.075	0.187*	1							
6 Construction	0.415	0.494	-0.26***	0.069	-0.161*	0.115	-0.403***	1						
7 Commerce	0.105	0.308	-0.063	-0.048	-0.049	-0.134	-0.16*	-0.269***	1					
8 Services	0.234	0.425	0.262***	0.025	0.181*	-0.216**	-0.273***	-0.458***	-0.182*	1				
9 Age	51.058	4.363	-0.045	-0.014	-0.127	-0.096	-0.035	0.045*	-0.045	0.033	1			
10 Gender	0.291	0.185	-0.022	-0.006	0.02	-0.137	-0.059	-0.152*	0.163*	0.09	-0.041	1		
11 Financial expertise	0.076	0.266	0.13	-0.051	-0.027	-0.299***	-0.091	-0.156*	0.112	0.223***	-0.036	0.22***	1	
12 Country	0.426	0.348	0.259***	-0.174*	0.024	-0.069	-0.183*	-0.25***	0.098	0.26***	0.012	0.566***	0.392***	1
13 Family Firm	0.67	0.36	-0.132	0.015	-0.187*	-0.106	-0.04	0.161*	-0.002	-0.136	0.024	0.033	0.122	0.06*

In Model 2 we determine the variables affecting an owner's choice to opt for alternative 2 under reference point 2, hence to decide in a manner consistent with prospect theory. Size of the firm (p <.05) negatively affects this decision. It appears that larger firms tend to be less loss averse. Again, the country of origin has an impact. Whereas the Swiss firms tended to prefer alternative 2, the U.S. firms rather opted for alternative 1, the alternative with higher ROE and higher control risk (p <.05). Family firm background had no impact on the choices of the owners.

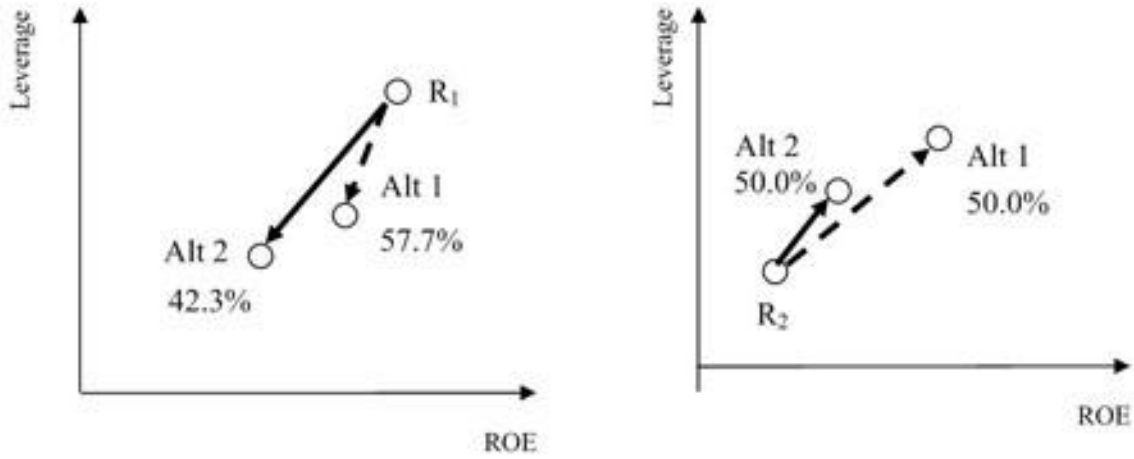
In Model 3 we examine the determinants affecting the owners' choice to opt for alternative 1 under reference point 1 and alternative 2 under reference point 2, hence to pick the loss averse alternative under both reference points. In this combined model, country of origin had no impact on the likelihood of loss aversion. Again family firm background has a significant impact (p <.05); it has a negative impact on the likelihood that the respondent will opt for the loss averse alternative under both reference points.

Figure 2: Distribution of the answers

Family owners (Figure 2a)



Nonfamily owners (Figure 2b)



In conclusion, we find partial support for hypothesis 1. We discover that family owners' investment decisions are significantly dependent on the reference point. However, we could not detect loss averse behavior, as predicted by prospect theory. In contrast, we find support for hypothesis 2. The distribution of the answers of the family owners indicates a dominant preference for alternative 2 under both reference points. However, the relative preference for alternative 2 is particularly high under reference point 1.

DISCUSSION AND CONCLUSION

Our study sets out to shed more light on the control risk propensity of family firm owners. More specifically, we investigate whether family firm owners, at any time, display strong preferences for investments that are characterized by low leverage levels, or whether there are contexts, coined as reference states, in which family firm owners are willing to take additional control risk to ultimately assure the family firm's survival and to protect family wealth.

Traditional financial theory suggests that investment decisions should solely depend on their net present value and the corresponding risk - return profile, hence preference relevant features for the individual (Savage, 1954).

As such, an individual's choice should not be affected by removing or adding irrelevant information (i.e. not top-ranked alternatives) (Samuelson & Zeckhauser, 1988). However, by drawing from prospect theory we show

that investment choices of family firm owners as opposed to nonfamily owners, are affected by individual behavior and preferences, and in particular the reference point from which they are considered.

Table 2			
	Model 1	**Model 2**	**Model 3**
	Preference for alternative 1 under reference point 1 = 1	Preference for alternative 2 under reference point 2 = 1	Preference for alternative 1 / 2 under reference point 1 / 2 = 1
Constant	2.96	1.53	2.72
	3.59	2.26	3.09
Log (Nr. of employees)	0.28	0.64*	-0.11
	0.29	0.29	0.46
Age of person	-0.06	-0.01	-0.07
	0.07	0.04	0.06
Gender (1=female, 0=male)	-2.79*	1.44	0.82
	1.33	1.07	1.49
Financial expertise (1=yes, 0=no)	0.36	-0.2	-0.44
	0.78	0.72	1.26
Country (1=U.S., 0=Switzerland)	2.85**	-1.43*	0.07
	0.96	0.65	1.05
Family owner (1=yes, 0=no)	-0.85*	0.07	-1.32*
	0.45	0.44	0.59
n	182	182	182
Prob> Chi Square	0***	0.039*	0.027*
Log Likelihood	-104.84	-111.75	-51.63
Pseudo R square	0.106	0.056	0.067

We examine the issue of investment decision making and control risk propensity in the context of family firm owners through the lens of prospect theory since managerial preferences may provide a behavioral basis for the understanding of capital structure of firms (Barton & Gordon, 1988), and since family firms have been found to be influenced by personal or family-induced biases and preferences (e.g., Kellermanns, 2005; Gomez-Mejia et al., 2007). We are able to show that family firm owners are distinct owners whose capital structure decisions are affected by reference points, for two main reasons. First, these owners face undiversified ownership stakes (Anderson & Reeb, 2003), vanishing boundaries between business and personal finances (Voordeckers & Steijvers, 2006) and the related financial and reputational burden of failed investment. A potential loss might therefore loom particularly large. Second, family owners have been proposed to be highly influenced by personal preferences and biases that undermine pure financial logic, given the emotion-dense setting of family firm ownership and control (e.g., Sharma & Manikutty, 2005; Gomez-Mejia et al., 2007). These owners experience emotional attachment (Zellweger & Astrachan, 2008), which have been found to result in endowment considerations (Ariely, Huber & Wertenbroch, 2005).

In two experimental scenarios we discover that the attractiveness of investment alternatives characterized by differing leverage and return on equity levels depends on the angle (i.e. reference point) from which they are assessed by family owners.

Even though family owners have an absolute preference for the investment alternative leading to low leverage and a ROE of 5%, in contrast to an investment with a moderate leverage / 10% ROE profile, this preference is susceptible to the vantage point from which these alternatives are considered. This preference for low leverage

even at the cost of some percentage in ROE is particularly strong when the family owners depart from an insecure starting point with high leverage levels, a reference point that conflicts with their inclination to search for autonomy and independence in their financing. However, the relative unattractiveness of a moderate leverage / 10% ROE investment is diminishing, once it is assessed from a more secure reference point.

In sum, family owners investment decisions are affected by reference points, however, partly in another way than predicted by prospect theory. We find that under both reference states family owners see losing control as worse than losing return, suggesting that family owners' value function is biased towards preferring the control to the return attribute (Tversky et al., 1988). When starting from a risky reference point with high leverage, family owners have a particularly strong inclination to search for security and low leverage situations. In contrast, when starting from a secure vantage point with very low leverage, their risk appetite is increasing, and an increasing number of family owners is willing to opt for riskier investments, since one can "afford" it. In contrast, we do not find evidence for loss averse or reference point dependency with the nonfamily owners in our sample.

With our research we provide new insights into the control risk aversion discussion in the family firm literature. Whereas the most visible stream of literature emphasizes control risk averse behavior (e.g., Agrawal & Nagarajan, 1990; Mishra & Mc Conaughy, 1999; Villalonga & Amit, 2006) we find that this view is not uniformly accurate. Control risk aversion is dependent on reference points that overshadow capital structure decision making in these firms. This finding is both an extension and a possible reconciliation of Romano et al.'s (2000) comprehensive study suggesting that family control is positively related to debt usage, with other research on the topic pointing in the opposite direction. In light of our findings we see the preference of family owners for retaining family control as a supporting factor for higher leverage investments, provided that one can revert to secure starting point. In case of a felt overexposure to leverage, family control needs to be seen as a hindering factor for higher leverage investments. Research thus far has specified certain elements of the financial objective function of small enterprises and family firms, such as attainment of satisfactory profit, systematic risk, the goal to maintain family control, or growth objectives (McMahon & Stanger, 1995; Romano et al., 2000). We see reference points as an interfering factor in this objective function in the family firm context.

We also add to Burmeister and Schade's (2007) study, who find that owner-managers of firms are more "Schumpeterian" than bankers, for example, since the entrepreneurs are generally less affected by the status quo. We extend Burmeister and Schade's (2007) study by distinguishing between family and nonfamily owners and find that family owners are more control risk averse than nonfamily owners and hence less "Schumpeterian". However, in light of our findings, we haste to add that the family owners' control risk propensity was dependent on the reference point. In line with the preliminary findings by Barton and Gordon (1988) we find that managerial choices have an impact on investment decisions, specifically in family firms. Our paper also supports the findings by Dew, Read, Saraswathy and Wiltbank (forthcoming) that experienced entrepreneurs look at affordable losses instead of expected returns, and that such a tendency might be particular strong in case of family firm owners. Our study sample consisted of experienced entrepreneurs that were 51 years of age on average, similar to their sample.

Our study presents preliminary evidence for differing relevance of the endowment effect depending on the cultural context since cultural evolutionary processes may impact preference that ultimately affect the endowment effect (Huck, Kirchsteiger & Oechssler, 2005). In low uncertainty avoidance cultures, there is more willingness to take risks, and achievement is often recognized in terms of pioneering effort (Hofstede, 1980, p. 184; Mueller & Thomas, 2001). We find evidence that the U.S. respondents had a preference for the higher leverage alternative than the Swiss respondents and displayed loss averse behavior under reference point 1. However, we are reluctant to overstate this finding since the differences for the countries of origin might be affected by the differing interest rate levels in these countries, with the U.S. displaying higher interest rates, therefore eventually letting the higher ROE option (alternative 1) appear more common.

There are limitations to our study. First, our findings do not allow us to determine the "better" or "worse" of the decision making styles in short-term performance, such as Shepherd et al. (2003) do. However, the "better" or the "worse" of the behavior we find needs to be assessed in light of the pivotal role of the survival attribute (Tversky et al., 1988) and in light of the fact that short-term reduction of aspired returns to the benefit of autonomy may lead to potential long-term performance advantages due to lagged effects of entrepreneurial strategies (Lumpkin & Dess, 1996). Also, our argumentation is based on an experiment, which does not consider adaptation costs for changing leverage levels (Leary & Roberts, 2004). Moreover, the experiment is restricted to one period and does not take into consideration changing financing preferences depending on differing asset prices over several periods (Fischer et al., 1989). Further analysis is needed regarding the reference point and a possible confounding effect. Respondents might confound the reference point given in the question and use instead their own experience and reference point and then run the selection against this own internal reference point.

Using an experimental design for our investigation, the quality of the study needs to be addressed. According to Campbell and Stanley (1963), experiments need to satisfy three criteria: objectivity, validity and reliability. Objectivity connotes that the results are independent from the persons conducting the experiment. The respondents were not informed about the expected answers and the background of the study. In addition, the questionnaires were anonymous. The validity of the experiment - whether the test measures what it is intended to measure - is taken into account via the selection of the research methodology, which closely follows the original research design by Tversky and Kahneman (1991), with a specified first dimension of the scenario (specified through figures, e.g. travel time) and a less specified second dimension (specified through descriptions, e.g. low, moderate or high social interaction). Even though our methodology follows these parameters, with a specified first dimension (ROE given in percentages) and a second less specified dimension (low, moderate, high and very high leverage levels), we might have made the leverage attribute more salient than the ROE attribute, thereby amplifying the attractiveness of alternative 1. The reliability of the experiment, hence whether the experiment delivers comparable results if it is repeated, can be examined through a subgroup analysis of the U.S. and the Swiss sample separately. Chi square tests provide the same answering pattern by family and nonfamily owners in the U.S. and the Swiss sample. Reliability concerns should therefore be mitigated.

IMPLICATIONS

For practitioners, e.g. commercial banks, these results indicate that family firms need to be consulted and supported in a specific way, assuring that their independence goal and their willingness to finance investment projects with equity is respected. Only once a secure reference point with low leverage is achieved, family owners will be demanding for debt financing from banks. On a practical note for family firms, there is an inherent threat that reference point dependent decision making and normative pressures to only pick low leverage investments may have the side effect of giving up growth opportunities (Mishra & McConaughy, 1999).

For researchers, following calls by Romano et al. (2000), our findings indicate specific antecedents of financing decisions that are contingent on the family setting. There is, however, much more room for investigating the topic. For example, there might be differences in family firm's control risk aversion depending on the share of personal or family wealth tied to the firm, as suggested by Agrawal & Nagarajan (1990). Also, ownership fractions might impact capital structure decisions, as suggested by Anderson and Reeb (2003), whereby minority family shareholders or shareholders not involved in the operations might take decisions in the same ways as nonfamily owners, unaffected by reference point considerations. Given that endowment is growing over time and experience, family firms in later generations might be more affected by loss averse behavior. A further avenue for future research could depart from a frontal analysis of differing leverage levels of family and nonfamily firms and investigate family firm specific costs of equity capital, assuming that the costs of equity capital are underestimated by family owners due to emotional attachment and substitution of financial with emotional returns (Astrachan & Jaskiewicz, 2008), providing incentives to replace debt with equity. The

relevance of such a research approach needs to be seen in light of the pecking order of financing (Myers & Maijluf, 1974) and its relevance in the family firm context (Maherault, 2000). The pecking order arises if the costs of issuing new securities overwhelm other costs and benefits of dividends and debt. Because of these costs, firms finance new investments first with retained earnings, then with safe debt, then with risky debt, and finally, under duress, with external equity. Family firms may have access to family financial capital, that, although limited, might be attractive in terms of required financial costs and the extended time horizon of the family investors.

In conclusion, our study provides further evidence that decision making of most privately held family firms is influenced by nonfinancial preferences of the controlling individuals. We see our study as conducive to research that investigates privately held companies based on their behavioral patterns, that cannot be fully captured by a purely rational approach.

REFERENCES

Agrawal, A. & N.J. Nagarajan (1990). Corporate capital structure, agency costs, and ownership control: The case of all-equity firms. Journal of Finance, September, 1325-1331.

Anderson, R.C, S.A. Mansi, & D.M. Reeb (2003). Founding family ownership and the agency cost of debt. Journal of Financial Economics, 68(2), 263-285

Anderson, R.C. & D.M. Reeb (2003). Founding family ownership, corporate diversification, and firm leverage. Journal of Law and Economics, October, 653-684.

Ariely, D., J. Huber, & K. Wertenbroch (2005). When do losses loom larger than gains? Journal of Marketing Research, May, 134-138.

Astrachan, J.S. & P. Jaskiewicz (2008). Emotional returns and emotional costs in privately held family businesses: Advancing traditional business valuation. Family Business Review, 21(2), 139-149.

Autio, E. & M. Mustakallio (2003). Family firm internationalization: A model of family firm generational succession and internationalization strategic postures. Paper presented at the Theories of the Family Enterprise Conference, University of Pennsylvania, Philadelphia, (December).

Baron, J. & I. Ritov (1994). Reference Point and Omission Bias. Organizational Behavior and Human Decision Processes, 59 (3), 475-498

Barton, S.L. & P.J. Gordon (1988). Corporate strategy and capital structure. Strategic Management Journal, 9, 623-632.

Belk, R.W. (1991). The ineluctable mysteries of possessions. Journal of Social Behavior and Personality, 6(6), 17-55.

Boyce, R.R., T.C. Brown, G.H. McClelland, G.L. Peterson, & W.D. Schulze (1992). An experimental examination of intrinsic values as a source of the WTA-WTP disparity. American Economic Review, 82(5), 1365-1373.

Burmeister, K. & Ch. Schade (2007). Are entrepreneurs's decisions more biased? An experimental investigation of susceptibility to status quo bias. Journal of Business Venturing, 22, 340-362.

Campbell, D.T. & J.C. Stanley (1963). Experimental and quasi-experimental designs for research. Chicago, IL: Rand McNally.

Canner, N., N.G. Mankiw, & D.N. Weil (1997). An asset allocation puzzle. American Economic Review, 1, 181-191.

Capon, N., J.U. Farley, & S. Hoenig (1990). Determinants of financial performance: A meta-analysis. Management Science, 36, 1143-1159.

Cho, M. (1998). Ownership structure, investment, and the corporate value: An empirical analysis. Journal of Financial Economics, 47, 103-121.

Dertouzos, M.L., R.K. Lester, & R.M. Solow (1989). Made in America: Regaining the productive edge. Cambridge: MIT Press.

Dew, N., S. Read, S.D. Saraswathy, & R. Wiltbank. (forthcoming). Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. Journal of Business Venturing.

Dyer, G.W. & D. Whetten (2006). Family firms and social responsibility: Preliminary evidence from the S&P 500. Entrepreneurship Theory and Practice, 30(6), 785-802.

Eddleston, K.A. & F.W. Kellermanns (2007). Destructive and productive family relationships: A stewardship theory perspective. Journal of Business Venturing, 22(4), 545-565.

Fama, E. & M. Jensen (1983). Separation of ownership and control. Journal of Law and Economics, 26, 301-325.

Fischer, E.O., R. Heinkel, & J. Zechner (1989). Dynamic capital structure choice theory and tests. Journal of Finance, 44, 19-40.

Gedajlovic, E., M.E. Lubatkin, & W.S. Schulze (2004). Crossing the threshold from founder management to professional management: A governance perspective. Journal of Management Studies, 41(5), 899-912.

Gallo, M.A. & A. Vilaseca (1996). Finance in family business. Family Business Review, 9, 387-402.

Garvey, G.T. & G. Hanka (2002). Capital structure and corporate control: The effect of antitakeover statutes on firm leverage. Journal of Finance, 54(2), 519-546

Gomez-Mejia, L.R., K.T. Hynes, M. Nunez-Nickel, & H. Moyano-Fuentes (2007). Socioemotional wealth and business risk in family-controlled firms: Evidence from Spanish olive oil mills. Administrative Science Quarterly, 52, 106-137.

Hartog, J., I. Ferrer, A. Carbonell, & N. Jonker (2002). Linking measured risk aversion to individual characteristics. Kyklos, 55(1), 3-26.

Hofstede, G. (1980). Culture's Consequences. International differences in work-related values. Beverly Hills, Calif.: Sage.

Huck, S., G. Kirchsteiger, & J. Oechssler (2005). Learning to like what you have - Explaining the endowment effect. The Economic Journal, 115(July), 689-702.

Kellermanns, F.W. (2005). Family firm resource management: Commentary and extensions. Entrepreneurship: Theory & Practice, 29(3), 313-319

Klein, S. (2000). Family businesses in Germany: Significance and structure. Family Business Review, 13(3), 157-173.

Le-Breton-Miller, I., D. Miller, & L. Steier (2004). Toward an integrative model of effective FOB succession. Entrepreneurship Theory and Practice, 28(4), 305-328.

Lin, C-H., S-C Chuang, D.T. Kao, & C-Y Kung (2006). The role of emotions in the endowment effect. Journal of Economic Psychology, 27, 589-597.

Leary, M.T. & M.R. Roberts (2004). Do firms rebalance their capital structures? SSRN working paper, June.

Lerner, J.S., D.A. Small, & G. Loewenstein (2004). Heart strings and purse strings. Carryover Effects of Emotions on Economic Decisions. Psychological Science, 15(5), 337-341.

Lumpkin, T. & G. Dess (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21(1), 135-172.

Maherault, L. (2000). The influence of going public on investment policy: An empirical study of French family-owned businesses. Family Business Review, 13(1), 71-79.

McMahon, R.G.P. & A.M.J. Stanger (1995). Understanding the small enterprise financial objective function. Entrepreneurship Theory and Practice, Summer, 21-39.

Mishra. C.S. & D.S. McConaughy (1999). Founding family control and capital structure: The risk of loss of control and aversion to debt. Entrepreneurship Theory and Practice, Summer, 53-64.

Mueller, S.L. & A.S. Thomas (2001). Culture and entrepreneurial potential: A nine country study of locus of control and innovativeness. Journal of Business Venturing, 16(1), 51-75.

Myagkov, M. & C.R. Plott (1998). Exchange economies and loss exposure: Experiments exploring prospect theory and competitive equilibria in market environments. American Economic Review, 87(5), 801-828.

Myers, S. & N. Maijluf (1974). Corporate financing and investment decisions when firms have information that investors do not have. Journal of Financial Economics, 2, 187-221.

Porter, M. & S. McIntyre (1984). What is must be best: a research note on conservative or deferential responses to antenatal care provision. Social Science & Medicine, 19, 1197-1200.

Naldi, L., M. Nordqvist, K. Sjoberg, & J. Wiklund (2007). Entrepreneurial orientation, risk taking, and performance of family firms. Family Business Review, 20(1), 33-47.

Romano, C.A., G.A. Tanewski, & K.X. Smyrnios (2000). Capital structure decision making: A model for family business. Journal of Business Venturing, 16, 285-310.

Samuelson, W. & R. Zeckhauser (1988). Status quo bias in decision making. Journal of Risk and Uncertainty, 1, 7-59.

Samuelson, P.A. (1994). The long-term case for equities. Journal of Portfolio Management, 21(1), 15-24.
Savage, L.J. (1954). The Foundations of Statistics. New York: Wiley.

Schultz-Kleine, S., R.E. Kleine, & C.T. Allen (1995). How is a possession "me" or "not me"? Characterizing types and an antecedent of material possession attachment. Journal of Consumer Research, 22, 327-343.

Shepherd, D.A., A. Zacharakis, & R.A. Baron (2003). VC's decision processes: Evidence suggesting more experience may not always be better. Journal of Business Venturing, 18, 381-401.

Sharma, P. & S. Manikutty (2005). Strategic divestment in family firms: Role of family structure and community culture. Entrepreneurship Theory and Practice, 20 (3), 293-312.

Schulze, W.S., M.H. Lubatkin, & R.M. Dino (2003). Toward a theory of agency and altruism in family firms. Journal of Business Venturing, 18, 473-490.

Schulze, W.A. & R.N. Dino (2004). The impact of distribution of ownership on the use of financial leverage in family firms. Proceedings of the US Association for Small Business.

Thaler, R. (1980). Toward a positive theory of consumer choice. Journal of Economic Behavior and Organization, March, 39-60.

Tversky, A., Sh. Sattath, & P. Slovic (1988). Contingent weighting in judgement and choice. Psychological Review, 95(3), 371-384.

Tversky, A. & D. Kahneman (1991). Loss aversion in riskless choice: A reference dependent model. Quarterly Journal of Economics, 106, 1039-1061.

Van Boven, L., G. Loewenstein, & D. Dunning (2003). Mispredicting the Endowment Effect: underestimation of owners' selling prices by buyers' agents. Journal of Economic Behavior & Organization, 51, 351-365.

Villalonga, B. & R. Amit (2006). How do family ownership, control and management affect firm value. Journal of Financial Economics, 80, 385-417.

Voordeckers, W. & T. Steijvers (2006). Business collateral and personal commitments in SME lending. Journal of Banking and Finance, 30(11), 3067-3086

Ward, J. (1997). Growing the family business: Special challenges and best practices. Family Business Review, Dec., 323-337.

Weber, M., Camerer, C.F. (1998). The Disposition Effect in Securities Trading: An experimental Analysis. Journal of Economic Behavior & Organization, 33, 167-184.

Wright, P., S.P. Ferris, A. Sarin, & V. Awasthi (1996). Impact of corporate insider, blockholder, and institutional equity ownership on firm risk taking. Academy of Management Journal, 39(2), 441-465.

Zahra, S.A., J.C. Hayton, & C. Salvato (2004). Entrepreneurship in family vs. no-family firms: A resource-based analysis of the effect of organizational culture. Entrepreneurship Theory and Practice, Summer, 363-381.

Zahra, S.A. (2005). Entrepreneurial risk taking in family firms. Family Business Review, 18(1), 23-40.

Zajac, E.J. & J.D. Westphal (1994). The costs and benefits of managerial incentives and monitoring in large US corporations: When is more not better? Strategic Management Journal, 15, 121-142.

Zellweger, T. & J. Astrachan (2008). On the emotional value of owning a firm. Family Business Review, 21(4), 1-17.

Zellweger, T. & R. Nason (2008). A stakeholder perspective to family firm performance. Family Business Review, 21(3), 203-216.

Dianne H.B. Welsh, The University of North Carolina at Greensboro

Thomas Zellweger, The University of St. Galle

Table 1

	Mean	S.D.	1	2
1 Loss averse behavior under reference point 1	0.427	0.496	1	
2 Loss averse behavior under reference point 2	0.52	0.501	-0 493	1
3 Loss averse behavior under both references	0.099	0.3	0.382 ***	0.321 ***
4 Log (Nr. of employees)	1.491	0.623	0.085	-0.18 *
5 Manufacturing	0.205	0.405	0.09	-0.087
6 Construction	0.415	0.494	-0.26 ***	0.069
7 Commerce	0.105	0.308	-0.063	-0.048
8 Services	0.234	0.425	0.262 ***	0.025
9 Age	51.058	4.363	-0.045	-0.014
10 Gender	0.291	0.185	-0.022	-0.006
11 Financial expertise	0.076	0.266	0.13	-0.051
12 Country	0.426	0.348	0.259 ***	-0.174 *
13 Family Firm	0.67	0.36	-0.132	0.015

	3	4	5
1 Loss averse behavior under reference point 1			
2 Loss averse behavior under reference point 2			
3 Loss averse behavior under both references	1		
4 Log (Nr. of employees)	0.002	1	
5 Manufacturing	0.075	0.187 *	1
6 Construction	-0.161 *	0.115	-0.403 ***
7 Commerce	-0.049	-0.134	-0.16 *
8 Services	0.181 *	-0.216 **	-0.273 ***
9 Age	-0.127	-0.096	-0.035
10 Gender	0.02	-0.137	-0.059
11 Financial expertise	-0.027	-0.299 ***	-0.091
12 Country	0.024	-0.069	-0.183 *
13 Family Firm	-0.187 *	-0.106	-0.04

	6	7	8
1 Loss averse behavior under reference point 1			
2 Loss averse behavior under reference point 2			

3 Loss averse behavior under both references			
4 Log (Nr. of employees)			
5 Manufacturing			
6 Construction	1		
7 Commerce	-0.269 ***	1	
8 Services	-0.458 ***	-0.182 *	1
9 Age	0.045 *	-0.045	0.033
10 Gender	-0.152 *	0.163 *	0.09
11 Financial expertise	-0.156 *	0.112	0.223 ***
12 Country	-0.25 ***	0.098	0.26 ***
13 Family Firm	0.161 *	-0.002	-0.136

	9	10	11	12
1 Loss averse behavior under reference point 1				
2 Loss averse behavior under reference point 2				
3 Loss averse behavior under both references				
4 Log (Nr. of employees)				
5 Manufacturing				
6 Construction				
7 Commerce				
8 Services				
9 Age	1			
10 Gender	-0.041	1		
11 Financial expertise	-0.036	0.22 ***	1	
12 Country	0.012	0.566 ***	0.392 ***	1
13 Family Firm	0.024	0.033	0.122	0.06 *

Table 2

	Model 1	Model 2
	Preference for alternative 1 under reference point 1 = 1	Preference for alternative 2 under reference point 2 = 1
Constant	2.96	1.53
	3.59	2.26
Log (Nr. Of employees)	0.28	0.64 *
	0.29	0.29
Age of person	-0.06	-0.01
	0.07	0.04
Gender (1=female, 0=male)	-2.79 *	1.44
	1.33	1.07
Financial expertise (1=yes, 0=no)	0.36	-0.2
	0.78	0.72
Country (1=U.S., 0=Switzerland)	2.85 **	-1.43 *
	0.96	0.65
Family owner (1=yes, 0=no)	-0.85 *	0.07
	0.45	0.44
n	182	182

Prob> Chi Square	0 ***	0.039 *
Log Likelihood	-104.84	-111.75
Pseudo R square	0.106	0.056

	Model 3
	Preference for alternative 1 / 2 under reference point 1 / 2 = 1
Constant	2.72 3.09
Log (Nr. Of employees)	-0.11 0.46
Age of person	-0.07 0.06
Gender (1=female, 0=male)	0.82 1.49
Financial expertise (1=yes, 0=no)	-0.44 1.26
Country (1=U.S., 0=Switzerland)	0.07 1.05
Family owner (1=yes, 0=no)	-1.32 * 0.59
n	182
Prob> Chi Square	0.027 *
Log Likelihood	-51.63
Pseudo R square	0.067