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Ownership Dispersion and Capital Structures in Family firms: A study of closed medium sized enterprises

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Abstract

Family firms are entities that possess and contribute greatly to all economies worldwide. In the following study we investigate capital structures and ownership dispersion among Swedish family firms. In order to find concluding results, we proceed with a regression between leverage and family business, leverage and family firm age, and leverage and ownership dispersion. Our regression outcomes support a U- shaped relationship between family ownership dispersion and leverage, but do not confirm a relation between leverage and family business. Earlier studies made in the field have generated differing results; however, there are some studies that are actually in line with our findings. A unique database developed at Jönköping University is used that enables us to obtain access to firm level data. Earlier studies in the same genre have only had access to industry level data.

Keywords: Family firms; Capital structure; Closed medium sized enterprises; Ownership Dispersion; Corporate Governance

JEL classification: G3

Introduction

Among the registered companies in Europe, more than 50 percent are organized as family firms; contributing both with entrepreneurial skills, innovation and employment (Pricewaterhouse Coopers Family Business Survey 2007/08). Similarly, between 65 percent - 90 percent of all registered companies in Latin America are operated by families, while in the United States the figure reaches an astonishing proportion of 95 percent. Likewise, the economic power that these firms possess is very commendable. Among the member states of the European Union, family firms generate between 35 percent - 65 percent of the GNP. In Sweden, family firms account for over half the private business sector's contribution to the GDP. However, uncertainties concerning their decision making and governance have been apparent as their organizational form is very distinct and unique.

The challenges that family firms face are numerous as they have to care for the family along with establishing a strong commercial and financial stance. Point in fact; one of the most prevailing ambiguities apparent in family firms concerns their financial structure. As many of the family firms are small and medium sized enterprises of closed corporation type, their access to capital is limited. The issue of employing equity and/or debt as financial source is therefore of great concern.

The purpose of the paper is to study the relationship between family ownership and capital structures in private (closed) medium sized corporations. Unique Swedish data of ownership in closed corporations will be used. A special attention is devoted to the impact of dispersed family ownership on capital structures. A source of inspiration is in this case the U-shaped relationship between dispersion and leverage suggested by Schulze, Lubatkin and Dino (2003). Our study differs from theirs by having access to detailed firm level data (they had to rely on industry level data). More of the variations in capital structure can thereby be explained

Perhaps somewhat surprising, in the light of earlier studies, we find no significant relation between family ownership and capital structures. Furthermore, a negative relationship between firm age and leverage is obtained both for family and non-family firms. A result more in line with earlier research is that the same type of curvilinear relationship as suggested by Schulze, Lubatkin and Dino (2003) is found in our study. Consequently we can replicate their result with Swedish private firm level data.

The rest of the article is structured as follows: First, the family firm concept is discussed. Thereafter follows a section presenting earlier research and hypotheses. Next in turn is a section about data and models. At last the results and conclusions are presented.

Defining Family Firms

The definition of family firms in previous literature has been very diverse as it is difficult to generalise and find a common consensus regarding this organization type. (Overviews are provided by Sharma (2004) and Kraus, Harms and Fink (2011)). Though, the more usual forms of businesses that have fallen under the category have mostly been characterized as firms controlled and managed by numerous family members from different generations (Shankar and Astrachan, 1996; Lansberg, 1999; Anderson and Reeb, 2003). For

example McConaughy et al. (1998) regard any firm that is managed by the founder or the founder's family members as a family firm. In the same manner, researchers such as Anderson and Reeb (2003), Cronqvist and Nilsson (2003), Faccio and Lang (2002), La Porta, Lopez-de-Silanes and Shleifer (1999) and others regard any business as a family one as long as the founding family or individual owns a fraction of the company and/or is/are positioned as board member/s. Other researchers have similarly focused on the importance of involving numerous family members over time in the management or ownership of the firm; Villonga and Amit's (2006) definition includes different levels and generations of individuals or family ownership. However, Bennedesen et al (2006) and Perez Gonzales (2006) take this implication even further by focusing on the blood relationship between the founder and the current CEO, and thereby defining family firms as such.

In our paper, family firms are simply defined based on the information provided by the firms investigated. A database concerning family ownership in Swedish firms has been developed at Jönköping International Business School from which this unique dataset will be extracted. The chosen entities have simply answered if they consider themselves as family firms at the time when the survey was conducted (2008). It is the same approach as used by Westhead and Cowling (1998).

Earlier Research and Hypotheses

Empirical studies of family ownership and capital structure

The concept of family firms as an academic area of study is relatively new. The empirical results obtained from earlier studies differ greatly. In an early empirical study Kim and Sorensen (1986) the relationship between leverage and insider ownership is depicted as positive and significant. Stulz (1988) argues that firms with controlling block-holders exhibit higher financial leverage due to their unwillingness to dilute ownership further. Accordingly, family firms employ more debt in order to retain the control and thus avert any takeover

attempts by outside shareholders. In a survey conducted by Poutziouris, Sitorus and Chittenden (2002) it is accordingly evident how the most prevailing factor that deters family firms from accepting equity financing is their fear of losing control. Yet, even without the threat of takeover, family firms still seem to prefer debt as they do not want to jeopardize their dominance. Harijono (2005) is on the same track and reports that family firms seem to employ, on average, 20 percent more in debt than non-family firms. This relationship was recently also confirmed by Ellul (2008) who found a positive relation between leverage and family ownership when studying 3608 firms from 36 different countries.

In contrast, researchers such as Daily and Dollinger (1992) argue that family firms are more risk averse and thus reluctant to employ debt. Point in fact, a study conducted by Gallo, Tapiés and Cappuyns (2004) shows that leverage ratio is lower among family firms. These results are statistically significant. Another study confirming the lower leverage ratios is conducted by Ampengerger et. al (2009) who explore the situation of German family firms. They search for the possible relation between debt and family firms across three different dimensions; “ownership, supervisory and management board activities by the founding family”.

However, Anderson and Reeb (2003) find that insider ownership – either by manager or families – has no impact on capital structure decisions at all. Families turn out to employ somewhat less debt (18.42 percent) than nonfamily firms (19.34 percent); though, the findings are not statistically significant. Given these varied and contradicting evidences, we do not have any definite priors on the effects of family ownership on the debt and equity ratio.

Family Firms and Capital Structures from an Agency Cost Perspective

Jensen and Meckling (1976) developed and argued for the inevitable importance of agency costs within corporate finance. The theory is based upon the assumption of diverging interests when ownership and management are separated; more clearly the

relationship between a principal (for example the shareholders) and the agent (for example the manager). Hence, if ownership and management are separated different conflicting interests emerge and create tension; resulting in high agency costs. It is believed that all stakeholders involved choose to act in a manner that maximises their own personal utility, even at others' expense.

In view of the agency theory developed by Jensen and Meckling (1976), family firms are believed to be more efficient as the principal (owner) and agent (management) are assumed to be one and the same person. This assumption has been so strongly conveyed that family firms have been used as a solid proposition to portray a non-conflicting firm with zero agency costs (Ang, Cole and Lin, 2000). This theory is to a great extent supported by both Anderson and Reeb (2003) and McConaughy (2000) who suggest that the existing incentive structures in family firms create fewer agency conflicts between different claimants. Though, the previous belief that family firms do not bear agency conflicts at all has been proven lacking in several cases as family firms have shown incentive structures that are very unique (Gomez-Mejia, Nunez-Nickel and Gutierrez, 2001; Steier, 2003). The conflicts in family firms may arise because of the dispersion of ownership, which creates a tension between the interest of those who manage a firm, and often own a controlling interest, and other family owners. Persisting problems such as entrenched ownership, asymmetric information and altruism within the family firms may create difficulties (Gomez-Mejia, Nunez-Nickel and Gutierrez, 2001; Schulze et al., 2001) and lead to the need of monitoring.

Most often family firms operate with private capital, and owners therefore need to monitor and control the firm they have invested in. Their wealth is strongly linked to the continuation of the firm, and therefore they also have a stronger incentive to monitor than other large shareholders do (Harijono, 2005). This implies that the risk taking behaviour of the family firm is probably different from the nonfamily one (Daily and Dollinger, 1992). As

most of the wealth of the family is invested in the company, the risk taking is assumed to be minimized by the employment of less debt. Family firms' interest also lies in passing their firm as a going concern to the future generations; they consider their firm as an asset to bequeath to the family rather than wealth they can employ today (Casson, 1999; Chami 1999). The survival instinct thus differentiates the family firms from other organizational forms, and increases their need to minimize risk and align the interest of all stakeholders. The concept of altruism also becomes relevant in relation to family firms as this behaviour emphasizes the positive linkage between family members happiness (Becker, 1981). It may be so that the family firms choose to forgo their existing consumption for the welfare of their heirs, and develop a risk averse behaviour where future family consumption is the main concern. Miller, Le Breton-Miller and Scholnick (2008) study the nature of family firms and propose a stagnation phenomenon which takes form through, amongst other, a risk averse behaviour, lack of financial and management resources and growth impeding decisions.

From the discussion above it is tempting to conclude that family firms have less conflicts and are thus able to minimize agency costs as the decisions are taken in the best interest of both family and firm. Such a conclusion would imply that a negative relation between family ownership and leverage can be expected. However, contrasting views have suggested that these "firms are plagued by conflicts that can cause them to flounder, if not fail and that they are vulnerable to a form of inertia that can paralyse decision making and threaten firm survival" (Schulze, Lubatkin and Dino, 2003). In an empirical study, Schulze et al. (2001) find that family firms are more difficult to manage because of self control and the dilemma of altruism. They argue that family control insulates the firm from the discipline role of external markets such as corporate control and labour markets, and the resources are thus not correctly allocated. Empirical research by Gomez-Mejia, Nunez-Nickel and Gutierrez (2001) suggests that family firms suffer from higher agency costs compared to others as they

are often unwilling to fire incompetent family members. According to their findings family owned firms in Spain are more reluctant to fire family CEOs, and in general more hesitant to stringently monitor and discipline family members due to their personal relationship.

Also, family firms may employ more debt in order to control the self-interests of the family agents; to limit the negative consequences of altruism within the firm. It is argued that altruism causes parents to increase their generosity, which can result in a dilemma where their children free ride (Schulze et al., 2001). An impression of entitlement and privilege may develop among the family members (Lubatkin, Ling and Schulze, 2007). They might engage in persuading the lead of the firm to utilize resources of the firm to satisfy family members; possibly through “employment, prerequisites, and privileges that they otherwise would not receive” (Schulze, Lubatkin and Dino, 2003). In order to discipline and avoid the free riding of problem caused by family members, the usage of debt may be more extensive than the agency theory predicts.

The upshot is that the relation between family ownership and capital structure is complex. On the one hand, the concentration of control to a family implies less need of leverage for lowering agency costs. On the other hand, there are arguments that intra-family conflicts tend to increase the use of debt as a monitoring device. Our hypothesis is subsequently inconclusive:

Hypothesis 1: Family Ownership has a relation with leverage but the sign is uncertain

The Impact of Ownership Dispersion on Leverage in Family Firms

In private family firms there is typically a principal shareholder, who is often the founder and CEO of the firm, and minor shareholders who belong to either the core or peripheral family circle. Some of the family members may be employed by the family firm, whilst others are only stakeholders. As family firms tend to branch into several generations,

the family firm-ownership does similarly tend to change in a more intervallic and phase wise trend. It is seen how the shareholding is passed on to future generations at the time of the principal shareholder's death or retirement.

According to Schulze, Lubatkin and Dino (2003) the ownership of family firms can be separated into three different stages of dispersion. At the start up phase there is a *controlling owner* who is most probably the founder and owns most of the shares. Thereafter the firm enters a *sibling partnership* in which the ownership dispersion is almost equally spread among the owners in a single generation. At last the firm enters the era of third and later generations, and as the shareholding is further fractionalised the *cousin consortium* is reached.

The controlling owners of family firms, and in particular the founders, will at the beginning be very motivated to use debt to finance their chosen investments. Due to the lack of access to equity markets, the leverage of the firm may increase substantially as the firm has to develop its establishment. The long term investment behaviour is based on the controlling owner's expectation frame, and does not necessarily include the expectations of the remaining family (both non shareholders and minority shareholders). The concern of the controlling owner is thus to choose the most appropriate investment alternatives based on the prospects of the market. By time however agency conflicts become apparent as the controlling owner may confuse which incentives that maximise the value of the firm, and which incentives that maximise his or her personal utility along with the family's utility. The existence of negative parental altruism, sense of entitlement from the owner's children, different opinions among family members and other issues may then cause the controlling owner to gradually change his or her estate plans. Both family members that are employed by the firm and others who are not may then free ride on the equity of the controlling owner.

When ownership is further dispersed among family members, and the firm enters the sibling partnership stage, the debt financing seems to decline. One reason for this may be that

the agency conflicts within the family become too extensive. Although the shareholding is assumed to be dispersed almost equally among the members, there is yet typically a principal shareholder. Therefore, the difficulties that emerge are those of authoritative nature as the major owner of the firms is often neither the biological lead of the family nor the initiator of the firm. This may result in loss of influence for the principal shareholder over the other siblings. The decisions taken by the principal may thus be difficult to employ as all the stakeholders will have different opinions regarding which opportunities to pursue.

A risk and loss averse behaviour may become evident because of issues related to negative parental altruism, sense of entitlement and other phenomena related to family firms specifically. Some of the family members may prefer consumption in the form of pecuniary and non-pecuniary benefits rather than investments, which will then occur at the cost of forgone beneficial investments. As each sibling tries to maximise his or her family's utility, the conflicts will increase within the firm. The firm may then be trapped in a status quo like situation where none of the siblings or the principal will be willing to take on more debt and thus risk. Also, the siblings may feel a pressure to sustain or enhance the dividend pay-out. The result will be reduced debt even when the market situation is believed to be favourable, and the firm may fail because of its lack of engagement in different ventures. Kaye and Hamilton (2004) do likewise believe that descendants are less likely to employ a highly leveraged capital structure as they are more concerned about wealth preservation rather than creation. This conservative orientation does also concord with the stagnation theory suggested by Miller, Le Breton-Miller and Scholnick (2008), as mentioned earlier. However, the stagnating effect becomes reversed as the family firms enter yet another era.

Hence, when the *cousin consortium* level is reached ownership is dispersed with further fractionalised shareholding. There is most probably not a controlling owner. The risk preference is assumed to be less constrained as the owners do most likely belong to later

generations and are part of the peripheral family circle, from which most are probably not employed by the firm. They have not overinvested in the family firm, and their approach is more comparable to those of institutional investors and others who invest in public firms. Schulze, Lubatkin and Dino (2003) therefore hypothesize that the managers of family firms reaching a cousin consortium are more willing and likely to bear risk and employ debt to pursue appropriate and promising investments.

Subsequently, the hypothesis that Schulze, Lubatkin and Dino (2003) form is that debt financing will be more preferred when ownership is either concentrated in the hands of a single owner as in the *controlling owner stage*, or when it is dispersed in the hands of several shareholders as in the *cousin consortium*. Also, the use of debt is minimised when the ownership is divided into relatively equal proportions as in the *sibling partnership*. Molly, Laveren and Deloof (2010) do also explore the succession effects on leverage in family firms among Flemish companies. They find that the level of debt seems to declines with 4 percentage points at the time of the first generational change. Following this is an increase in the leverage with 6 percentage points as the family firm undergoes a second generational change.

Seen from the perspective of ownership dispersion a U shaped relationship between leverage and ownership dispersion can be expected with relatively high leverage in the controlling owner stage, a decrease in leverage when ownership gets more dispersed in the sibling partnership stage and finally a rise in leverage when ownership gets even more dispersed in the cousin consortium stage. In light of this theory our second hypothesis is:

Hypothesis 2: The relationship between a family firm's use of leverage and the dispersion of its ownership can be graphed as a U-shaped curve.

The Impact of Firm Age on Capital Structure

The link between firm age and leverage in family businesses has also been investigated in many studies. Romano, Tanewski and Smyrniotis (2001) review the literature in their empirical study of the 5000 largest businesses in Australia. The synthesis of their review is that the source of capital depends, to some extent, on where the firm is in its business life cycle. Newly started or developing firms may find it difficult to raise debt due to their vulnerable position. Accordingly, the owner-managers of small and young firms tend to rather employ internal finance. Given this, family firms may be able to acquire debt financing easier as time passes by. Based on their evaluation of earlier research, they test the hypothesis "The age of a family firm is associated positively with debt" (Romano, Tanewski and Smyrniotis, 2001:293), but are not able to ascertain it as statistically significant.

More recently study Blanco-Mazagatos, de Quevedo-Puente and Castrillo (2007) compare family business and non-family businesses. Akin to our study their sample consists of private firms. Only firms with more than 10 workers are included. Among other things the financial structure is studied. A division between younger businesses (<25 years old) and older businesses (>25 years old) is made. They find that there was only for old businesses that a difference in leverage (debt/total assets) between family and nonfamily businesses could be found. Old family businesses had a comparatively higher leverage. But there was no indication that leverage was increasing with firm age. On the opposite leverage seemed to decrease especially for nonfamily businesses.

In our study firm age will be used as an explanatory variable of leverage. In light of Romano, Tanewski and Smyrniotis (2001) we state the hypothesis that:

Hypothesis 3: Leverage is positively associated with the age of a family firm

Data and Model

Data Collection Method

Our sample data is extracted from a database comprised of Swedish firms, and created by the Centre of Family Enterprise and Ownership (CeFEO) at Jönköping International Business School. The database was constructed with assistance of statisticians. A representative sample was randomly drawn from the population of 270 057 active limited companies in Sweden; resulting in a selection of 2522 active firms. These firms were categorized based on their number of employees, which is a method adopted from SCB (The Statistical Central Bureau in Sweden). See Table 1.1

— **Table 1 in here** —

A survey was sent out to the 2522 chosen firms. 40 percent answered after the second round of send outs. The survey inquires about the time of incorporation and asks for information about the five largest shareowners. The latter question is defined based on the number of shares the owners hold, as well as their share of voting power. A question regarding their own opinion of the status of the firm as a family business was included.

With a focus on medium sized enterprises (MEs) as classified by the European Commission (2003/361/EC), we gathered data from the 151 firms in the 50-99 class and from 95 firms in the 100-199 class (the groups in the middle of table 1). The yearly financial information and consolidated financial statements of these firms was extracted from the database Amadeus (*Bureau Van Dijk*).

Firms with less than three years of balance sheet data and public limited companies were sorted out. Furthermore, companies in which the ownership stake by the five largest shareholders is less than 66.67 percent as well as firms with leverage ratio less than zero were excluded. We also used Mahalanobi's distance statistics method to detect outliers (Gnanadesikan and Kettenring, 1972). At last a data sample with 177 observations of both

private family and non-family firms remained. This is sample data we use to test the relationship between private MEs (family and non-family businesses) and leverage. Another subset, constructed from the large sample of 177 firms, is also produced and includes only 78 private family firms. This data is used to test the hypotheses 2 and 3 concerning family ownership dispersion and leverage and family firm age and leverage.

Variables

Table 2 describes our variables along with stating their respective sources. Our main focuses are the following variables: Leverage, Family business, Age, Firm's sales growth, and Balance of voting power. All of these are measured and analyzed in the subsequent section along with the rest of the variables.

— **Table 2 in here** —

Descriptive statistics and correlation analysis

There are two data sets used in the analysis covering all firms respectively only family firms. Table 3 shows descriptive statistics for all firms while table 4 covers family firms. For all firms it can be observed that the ownership concentration is rather high (0.8117) even though less than half of them are family firms. Also, the Swedish MEs pays an average effective tax rate of 13.3 percent.

— **Table 3 in here** —

A comparison between the tables indicates a higher variation of leverage in non-family firms. On average, family firms tend to have higher measures of profitability, asset tangibility, and size compared to non-family firms. However the median level of gearing in family firms is higher than that of the larger sample. Moreover, their sizes are substantially

larger compared to others. The most notable feature of the family firms in table 4 is their high level of concentration in voting power (the BVP's mean is 0.409).

— **Table 4 in here** —

In the correlation analysis with all firms included (Table 5), taxes and size are two variables that have a tendency of being correlated with other variables. This is not a problem since all the financial variables are correlated to some extent; though it may pose some difficulties in interpreting the explanatory powers of these two variables.

— **Table 5 in here** —

There are just a few significant correlations in the analysis concerning just family firms (Table 6). Asset tangibility and profitability are correlated with taxes.

— **Table 6 in here** —

Model

The ordinary least square (OLS) method is used to obtain the coefficient estimate of the model. Even though we are inspired by the model created by Rajan and Zingales (1995) in the study about international capital structure, we have made some modifications in our own model. It is a “trial and error” process. Specifically, the method of “stepwise selection” is applied to choose the appropriate variable. The model developed by Rajan and Zingales (1995) follows as:

Leverage = $a + \beta_1$ Tangible Assets + β_2 Market to Book Ratio + β_3 Log Sales +

$$\beta_4 \text{ Return on Assets} + \varepsilon_i$$

Our first model is an adaption and modification of the model above. We use this model to test the first hypothesis.

$$\text{Leverage} = \beta_0 + \beta_1 \text{ Family business} + \beta_2 \text{ Ownership concentration} + \beta_3 \text{ Age} + \beta_4 \text{ Asset Tangibility} + \beta_5 \text{ Profitability} + \beta_6 \text{ Taxes} + \beta_7 \text{ Size} + \varepsilon_i \quad (\text{Model 1})$$

Two other models will be applied to test the second hypothesis about ownership structure of private family firms. These models do also analyze the relation between leverage and family firm age (the third hypothesis). We aim to follow Schulze, Lubatkin, and Dino's (2003) field study in which they ascertain a relationship between leverage and family ownership dispersion as a U-shaped curve in periods of market growth. We will therefore first conduct the test without the interaction terms to see the direct effect of ownership structure on the use of debt.

$$\text{Leverage} = \beta_0 + \beta_1 * \text{BVP} + \beta_2 * \text{BVP}^2 + \beta_3 * \text{Age} + \beta_4 * \text{Asset tangibility} + \beta_5 * \text{Profitability} + \beta_6 * \text{Taxes} + \beta_7 * \text{Size} + \varepsilon_i \quad (\text{Model 2})$$

We then include interaction terms to see how the ownership structures together with sales growth determine the value of leverage in a third model.

$$\text{Leverage} = \beta_0 + \beta_1 * \text{BVP} + \beta_2 * \text{BVP}^2 + \beta_3 * \text{BVP} * \text{Sales growth} + \beta_4 * \text{BVP_squared} * \text{Sales growth} + \beta_5 * \text{Age} + \beta_6 * \text{Asset tangibility} + \beta_7 * \text{Profitability} + \beta_8 * \text{Taxes} + \beta_9 * \text{Size} + \varepsilon_i \quad (\text{Model 3})$$

Empirical Results and Analysis

Overall, our models do exhibit a decent R^2 . Most of the variation apparent in the debt and equity ratio is explained. Moreover, all three F -statistics indicate high significance of the chosen models. We have also conducted the Ramsey RESET Test, White's Test and Breusch-Godfrey's Test for misspecification, heteroscedasticity, and autocorrelation respectively in all three models. The results indicate that we do not suffer from the above mentioned problems. The results can be viewed in Table 7.

— Table 7 in here —

The regression results from Model 1 show that whether a firm is family owned or not does not have any impact on its capital. The result is consistent with the findings made by Anderson and Reeb (2003) who also state that insider ownership does not have a significant relation with the financial choices of the firm. In line with our first hypothesis regarding family business and leverage an interpretation of the result is that advantages of family control are not large enough to justify a lower leverage. Also, ownership concentration does according to Model 1, surprisingly not influence the level of debt that a firm would choose. Asset tangibility on the contrary has a significant and positive impact on leverage which can be explained by the fact that such assets can be used as collaterals. One can also see that when the profitability of the firm increases, the leverage of the firm falls. Thus, the firm will prefer to employ internally generated cash flows when earnings are higher.

In all models firm age proves to be significantly related to the debt and equity ratio. The relation is significantly negative, which implies that as time passes by a firm choose to reduce the amount of debt in its financing scheme. This result contradicts the arguments of Romano, Tanevski and Smyrnios (2000) who state that debt is positively associated with family firm age. It thereby also contradicts our third hypothesis. An interesting observation in

this context is that Blanco-Mazagatos, de Quevedo-Puente and Castrillo (2007) indicate the same relation as our findings between age and leverage in their empirical study of private Spanish SMEs.

Our firm age findings are also *partly* consistent with those of Schulze, Lubatkin and Dino's (2003) who declare that when a firm's ownership changes from a controlling owner to a sibling partnership, the debt financing declines. Hence, when the firm grows further over time and exits from a concentrated ownership stage to more divided shareholding, the debt financing decreases. The research proposes that the owners are more likely to care for their own benefits at the sibling partnership stage, and thus the agency conflicts become more extensive. Dilemmas such as negative parental altruism and differing interest of family members, among others, might become apparent, and cause the conflicts within the firm to widen. Demands on a higher level of dividend payment may also become evident. As a result, the debt financing falls and the firm develops a more risk averse behavior.

At last, the perhaps most interesting propositions of our thesis is the one inspired by Schulze, Lubatkin and Dino (2003) use; i.e. to depict the relationship between ownership dispersion and leverage as curvilinear. In contrast to Schulze, Lubatkin and Dino (2003) we changed the research focus from an industrial level to a firm level. Surprisingly, our results proved that the relationship between ownership dispersion and leverage in family firms still can be graphed as a U-shaped curve. Schulze and his colleagues only arrived at this result in the high growth industry sector. We obtained the same result directly by running the regression without taking into account the effects of market growth. Model 2 describes that the corresponding signs of BVP and BVP_squared do indeed follow the U-shaped curve, even though the former (BVP) is not statistically significant. When including the interaction terms (BVP*Sales growth and BVP_squared*Sales growth) we also obtain a significant result as the outcome from Model 3 indicates.

Our findings can thus be explained in the same way as Schulze, Lubatkin and Dino (2003). At first, ownership is assumed to be concentrated, and the level of debt is predicted as higher. However, as ownership is further divided and the firm enters the sibling partnership, the agency conflicts and other difficulties are assumed to position the firm in a conflicting state. The firm would then choose to reduce debt (BVP show a negative relationship with leverage, although it is not significantly negative). Then, as ownership fractionalizes further, the firm reaches the cousin consortium level with almost complete dispersion. As each shareholder is assumed to realize the importance of avoiding agency conflicts, the firm develops a more optimistic investment behaviour. The aim becomes to satisfy outside shareholders and maintain a convincing growth. Therefore, debt will be preferred again at this stage (BVP_squared exhibits a significantly positive relationship with the debt and equity ratio).

Conclusion

Family firms have existed for a long time. It is not only amongst MEs that family businesses are prevalent. Many of the largest companies are since a long time, or have recently taken, the form of a family firm. Their importance and position on the world market is getting increasing attention in economic research. One important aspect of family business is how they are financed. This is the focus in our paper. As far as we know the study is the first of its kind with Swedish data. Consequently, we did not have any priors on how Swedish family firms actually act in relation to leverage. We have chosen to analyse the capital structures and ownership dispersion in closed medium sized family firms.

More specifically we address the following questions;

Is there a relationship between family ownership and use of debt?

Is there a U-shaped relationship between family ownership dispersion and leverage?

Does firm age influence capital structure?

In the first case, the result achieved was not significant. Although there are several theories and arguments that propose the relevance of this relationship, our study was not able to ascertain the hypothesis. However, our study is in line with the findings of Anderson and Reeb (2003), who point out the non existing relationship between insider ownership and leverage. Hence, from an agent cost perspective the advantages of family control does not seem to be large enough to warrant a lower leverage.

The hypothesis concerning ownership dispersion and leverage did exhibit a significant result; thus agreeing with the U- shaped relation suggested by Schulze, Lubatkin and Dino (2003). Although our study included a smaller and more limited dataset, and is conducted on a firm level, the results are identical.

Firm age appeared to significantly lower leverage for private MEs. An interpretation of this result should be the subject of future research. An interesting observation is that Blanco-Mazagatos, de Quevedo-Puente and Castrillo (2007) indicate the same relation between age and leverage in their empirical study of private Spanish SMEs.

We are fully aware of the fact that our study has a limited dataset along with a definition that complicates its comparison to other studies. For instance, our definition was purely based on the perception and response of the investigated firms, who simply had to state whether they believe themselves to be a family firm or not. We also understand that by excluding firms with ownership stake by the five largest shareholders being less than 66.67 percent, we risk losing some family firm observations. Nevertheless, we had to make a trade off, since this would prevent a bias estimate of ownership dispersion later on when calculating the Herfindahl index.

For further research we therefore propose that a quantitative definition should be implemented where the percentage of family ownership is analysed. The significant results

achieved concerning family firm age and leverage could also be further explored to see whether it may follow a curved relation when considering a longer time span as seen in Schulze, Lubatkin and Dino's (2003) research.

Also, many of the earlier studies that we have investigated have not considered closed firms, but have focused on public listed firms instead. This does affect their result as the access and relation to debt and equity changes considerably when a firm is either of closed or open corporation type. Therefore, a similar study could be conducted where public firms are included.

References

- Ampengerger, M., Schmid T., Aschleitner A-K., and C. Kaserer (2009). "Capital Structure Decisions in Family Firms – Empirical Evidence from a Bank-Based Economy." Working paper. Technische Universität, München
- Anderson, R.C. and D.M. Reeb (2003). "Founding-Family Ownership, Corporate Diversification, and Firm Leverage." *The Journal of Law and Economics*, 46:2
- Ang J.S., Cole R.A., and J.W. Lin (2000). "Agency Costs and Ownership Structure." *Journal of Finance*, 55: 81-106.
- Becker G.S. 1981. *A Treatise on Family*, Harvard University Press: Cambridge MA.
- Bennedsen, M., Nielson K.M., Perez-Gonzalez F., and D. Wolfenzon (2006). "Inside the Family Firm: The Role of Families in Succession Decisions and Performance." *Quarterly Journal of Economics* 122(2):647-691
- Blanco-Mazagatos, V., de Quevedo-Puente, E., and Castrillo L.A. (2007), The Trade-Off Between Financial Resources and Agency Costs in the the Family Business: An Exploratory Study," *Family Business Review* 20 (3):199-213.
- Casson M. (1999). "The Economics of the Family Firm." *Scandinavian Economic History Review*, 47: 10-23.
- Chami R. (1999). "What's Different About Family Business?" Unpublished working paper. University of Notre Dame and the International Monetary Fund, Indiana and Washington DC.
- Cronqvist, H., and M. Nilsson (2003). "Agency Costs of Controlling Minority Shareholders." *Journal of Financial and Quantitative Analysis*, 38:695–719.
- Ellul, A. (2008). "Control Motivations and Capital Structure Decisions". Kelly School of Business, Indiana University

- Daily C. M. and M.J. Dollinger (1992). "An Empirical Examination of Ownership Structure in Family and Professionally Managed Firms." *Family Business Review*, 5: 117–136.
- Faccio, M., and L.H.P. Lang (2002). "The ultimate ownership of Western European corporations." *Journal of Financial Economics*, 65 (3):365–395
- Gallo M., Tapias J., and K. Cappuyns (2004). "Comparison of Family and Nonfamily Business: Financial Logic and Personal Preferences." *Family Business Review*, 17 (4): 303-318
- Gnanadesikan R., and J.R. Kettenring (1972). "Robust Estimates, Residuals, and Outlier Detection with Multiresponse Data." *Biometrics*, 28: 81-124.
- Gomez-Mejia L.R., Nunez-Nickel M., and I. Gutierrez (2001). "The Role of Family Ties in Agency Contact." *Academy of Management Journal*, 44: 81-95.
- Harijono., H. (2005). "Capital Structure Decisions of Australian Family Controlled Firms." Monash University
- Jensen M., and W. Meckling (1976). "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure." *Journal of Financial Economics* 3: 305-360.
- Kaye, K. and S. Hamilton (2004). "Roles of Trust in Consulting to Financial Families", *Family Business Review*, 17: 151–163
- Kim S. W. and E. H Sorensen (1986). "Evidence on the Impact of the Agency Costs of Debt on Corporate Debt Policy." *Journal of Financial and Quantitative Analysis*, 21: 131-144
- Kraus, S., Harms, R., and M. Fink (2011) "Family Firm Research: Sketching a Research Field," *International Journal of Entrepreneurship and Innovation Management*, 13(1):31-47
- La Porta R., Lopez-de-Silanes F. and A. Shleifer (1999). "Corporate Ownership Around the World." *Journal of Finance*, 54:471–517
- Lansberg I. (1999). *Succeeding Generations*. Harvard Business School Press, Boston, MA
- Lubatkin M.H., Ling, Y, and W. Schulze (2007). "An organizational justice based view of self control and agency cost in family firms". *Journal of Management Studies*, 44(6): 955-971
- McConaughy D. (2000). "Family CEOs vs. Nonfamily CEOs in the Family Controlled Firm: An Examination of the Level and Sensitivity of Pay to Performance" *Family Business Review*, 13(2): 121–131.
- McConaughy D.L., Walker M.C., Henderson Jr. G.V, and C.S. Mishra (1998). "Founding Family Controlled Firms: Efficiency and Value." *Review of Financial Economics*, 7:1–19
- Miller D., Le Breton-Miller I., and B. Scholnick (2008). "Stewardship vs. Stagnation: An Empirical Comparison of Small Family and Non-Family Businesses." *Journal of Management Studies*, 45: 51–78
- Molly, V., Laveren, E., and M. Deloof (2010). "Family Business Succession and Its Impact on Financial Structure and Performance." *Family Business Review*, 23, 131-147.
- Perez-Gonzalez F. 2006. "Inherited Control and Firm Performance." *American Economic Review*, 96:1559–1588
- Poutziouris P., Sitorus S., and F.Chittenden 2002. "The Financial Affairs of Family Companies." Manchester Business School.
- Rajan G.R., and L. Zingales (1995). "What Do We Know About Capital Structure? Some Evidence from International Data." *Journal of Finance*, 50: 1421–1460
- Romano C. A., Tanewski G.A., and K.X. Smyrniotis (2001). "Capital Structure Decision Making: A Model for Family Business." *Journal of Business Venturing*, 16(3): 285

- Schulze W.S. , Lubatkin M.H., Dino R.N., and A.K. Buchholtz (2001). “Agency Relationships in Family Firms: Theory and Evidence.” *Organization Science*, 12(2) : 99-116
- Schulze W.S., Lubatkin M.H., and R.N Dino (2003). “Exploring the Agency Consequences of Ownership Dispersion Among the Directors of Private Family Firms.” *Academy of Management Journal*, 46:179–194
- Shanker M.C. and J.H. Astrachan (1996).”Myths And Realities: Family Businesses’ Contribution to US Economy — A Framework for Assessing Family Business Statistics.” *Family Business Review*, 9: 107–123.
- Sharma, P. (2004). “An Overview of the Field of Family Business Studies: Current Status and Directions for the Future.” *Family Business Review*, 17:1-36.
- Steier L. (2003). “Variants of Agency Contracts in Family-Financed Ventures as a Continuum of Familiar Altruistic and Market Rationalities” *Journal of Business Venturing* , 18: 597-618.
- Stulz R.M.(1988). “Managerial Control of Voting Rights. Financing Policies and the Market Corporate Control.” *Journal of Financial Economics*, 20:25-54.
- Villalonga, B., and R. Amit (2006). “How Do Family Ownership, Management and Control Affect Firm Value?” *Journal of Financial Economics* 80: 385–417
- Westhead, P., and M. Cowling (1998). “Family Business Research: The Need for a Methodological Rethink. ” *Entrepreneurship Theory and Practice*, 7:3-28.

Online Sources

Making a difference. The PricewaterhouseCoopers Family Business Survey 2007/08 (retrieved 2010-01-11)http://www.pwc.com/sv_SE/se/publikationer/assets/fbs_survey0708.pdf

Tables

Table 1

Sample sizes and respective groups

Groups	Number of firms in the sample
5-9	622
10-19	359
20-49	242
50-99	391
100-199	205
200-499	250
500-999	216
>1000	237

Sum: 2522

Table 2
Variable definitions and sources

Variable	Definition	Source
Leverage	Leverage (%) is calculated directly from AMADEUS: $\frac{\text{Non current liabilities (2008)} + \text{Loans (2008)}}{\text{Shareholders Funds(2008)}} \times 100\%$	AMADEUS (2008)
Family firm	In the survey, the firms are asked if they consider themselves to be a family firm or not. We use a dummy variable for family businesses. If the answer is “Yes”, it is equal to 1 and if the answer is “No” then it would take the value of 0.	THE OWNERSHIP DATABASE FOR SWEDISH CORPORATIONS(2008)
Ownership concentration	<i>The Herfindahl index</i> is calculated by the total sum of squares of the fractions of equity held by the five largest shareholders.	THE OWNERSHIP DATABASE FOR SWEDISH CORPORATIONS(2008)
Age	Age = 2008- Year of incorporation +1	AMADEUS (2008)
Asset tangibility	The asset tangibility is used as a proxy for the firm’s collateral value. We use the lag value of the ratio of fixed assets to total assets $\frac{\text{Total fixed assets (2007)}}{\text{Total assets (2007)}}$	AMADEUS (2008)
Profitability	We use the lag value of the ratio of earnings before interest and taxes to total assets. $\frac{\text{EBIT (2007)}}{\text{Total assets (2007)}}$	AMADEUS (2008)
Taxes	Effective tax rate = Taxation (2008)/ EBIT (2008)	AMADEUS (2008)
Size	We define size as the log of sales in the year 2008.	AMADEUS (2008)
Balance of voting power (BVP)	BVP is calculated as the sum of squares of the minority board members’ percentage share of the votes divided by the square of the votes held by the largest shareholders’ percentage share of votes.	THE OWNERSHIP DATABASE FOR SWEDISH CORPORATIONS(2008)
Firm’s sales	The firm’s sales growth is used as a proxy for the industry sales growth. Here we use a	AMADEUS (2008)

growth (SG) dummy variable for SG. If the firm's sales growth rate is larger than the median level of the sample, it is coded as 1. Otherwise, it will be 0.

Table 3

Descriptive statistics for all firms

Variables	Minimum	Maximum	Median	Mean	Std. Deviation
Leverage (%)	0	992.41	25.3	89.533	157.042
Family Business	0	1	0	0.44	0.497
Ownership Concentration	0.0017	1	1	0.8117	0.291
Age	2	131	27	36.60	29.535
Asset Tangibility	0.0011	0.9849	0.308	0.343	0.2530
Size	6.2681	8.3621	7.171	7.186	0.3871
Taxes	-2.3551	1.0816	0.163	0.133	0.2690
Profitability	-0.1660	0.5481	0.133	0.150	0.1110

Table 4

Descriptive statistics for family firms only

Variable	Minimum	Maximum	Median	Mean	Std. Deviation
Leverage (%)	0	501.18	39.73	75.83	96.38
BVP	0	3	0	0.409	0.594
BVP_squared	0	9	0	0.516	1.213
Sales growth	0	1	-0.057	0.51	0.503
BVP*sales growth	0	3.00	0	0.229	0.531
BVP_squared*Sales growth	0	9.00	0	0.331	1.172
Profitability	-0.1207	0.49	0.16	0.16	0.091
Asset tangibility	0.0155	0.8961	0.39	0.37	0.225
Taxes	-0.4407	0.4401	0.147	0.14	0.131
Size	6.7262	11	9.439	9.42	0.818

Age	2	131	33	38.77	29.5
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Table 5
Correlation between the variables in the data consisting of all firms

Variables	Family business	Ownership concentration	Profitability	Asset tangibility	Taxes	Size	Age
Family business	1						
Ownership concentration	-0.171*	1					
Profitability	0.106	-0.02	1				
Asset tangibility	0.097	-0.079	-0.08	1			
Taxes	-0.006	-0.05	0.164*	-0.211**	1		
Size	-0.217**	0.146	-0.081	0.075	-0.206**	1	
Age	0.058	0.136	-0.124	0.094	-0.055	0.202**	1

N=177

*Correlation is significant at 0.05 level

**Correlation is significant at 0.01 level

Table 6
Correlation between the variables in the data consisting only family firms

Variables	BVP	Sales growth	Age	Asset Tangibility	Profitability	Size	Taxes
BVP	1						
Sales Growth	0.066	1					
Age	-0.069	-0.133	1				
Asset tangibility	0.033	0.11	-0.062	1			
Profitability	0.14	0.125	-0.185	0.070	1		
Size	-0.146	0.105	0.046	0.098	-0.174	1	
Taxes	0.214	0.002	-0.22	-0.414**	0.25*	-0.118	1

N=78

*Correlation is significant at 0.05 level

**Correlation is significant at 0.01 level

Table 7
Regression Analysis for Leverage (Leverage dependent variable)

Independent Variables	Model 1	Model 2	Model 3
Family Business	6.28 (0.28)		
Ownership Concentration	37.46 (1.0)		
Age	-0.82** (-2.2)	-0.97 *** (-3.0)	-1.1*** (-3.3)
Asset tangibility	237.2 *** (5.5)	49.1 (1.1)	70.8 (1.5)
Profitability	-328.0 *** (-3.4)	-124.1 (-1.2)	-118.5 (-1.1)
Taxes	-44.0 (-1.1)	-364.7 *** (-4.4)	-375.3 *** (-4.6)
Size	-12.99 (-0.44)	4.6 (0.40)	1.5 (0.13)
BVP		-49.9 (-1.4)	106.2 (1.2)
BVP_squared		33.2* (2.0)	-106.3 (-1.5)
BVP*Sales growth			-174.2* (-1.9)
BVP_squared*Sales Growth			150.0 ** (2.0)
R ²	0.24	0.40	0.43
Adjusted R ²	0.21	0.34	0.36
F-statistic	7.51***	6.62***	5.76***
N	177	78	78

t-statistics within parenthesis

* p-value \leq 0.1

** p-value \leq 0.05

*** p-value \leq 0.01