The ownership-performance puzzle: agency issues in small and medium-sized family firms

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Abstract

Using a cross sectional sample of 2,863 family firms from the 1998 NSSBF database, we examine the relationship between family ownership and financial performance for small and medium-sized family firms with a chained-interaction model in which we combine ownership dispersion proxies with moderating management and family variables. Our results suggest that ownership dispersion has a positive influence on performance *when* the family firm is in a later generational stage, giving support to predictions put forth by agency cost models in private family firms (Schulze et al., 2003). Our results also suggest that the zero agency-cost base case as described by Jensen and Meckling (1976) is in fact no zero agency cost case due to ignored agency costs in family firms.

Keywords: ownership, performance, SME, family firm

1. Introduction

Since Berle and Means (1932) started up the discussion about the relationship between ownership structure and performance, several authors have investigated the effect of ownership dispersion or concentration on different firm variables such as leverage or financial performance. Theoretical arguments for the ownership structure/performance debate are principally grounded in agency theory. According to one specific view within agency theory, stronger ownership concentration mitigates the conflict of interest between owners and managers because a larger shareholder has greater incentives to monitor the management team. Consequently, larger ownership concentration should have a positive effect on financial firm performance. Contrary to the classic view of a widely held corporation by Berle and Means (i.e. characterized by strong ownership dispersion among many small shareholders), La Porta et al. (1999) found that in many countries around the world, corporations do have large controlling shareholders. Moreover, these controlling shareholders often seem to be a family. This different view of ownership structure of corporations directed the attention more towards another type of agency conflict namely that of concentrated shareholders (Fama and Jensen, 1983). Concentrated ownership and control would lead to the risk of controlling shareholders extracting private benefits from the firm at the expense of small minority shareholders (Demsetz, 1983). The empirical question which agency effect dominates is still an open one as studies about the ownership/performance relationship show mixed results (e.g. Demsetz and Villalonga, 2001; Claessens et al., 2002; Dalton et al., 2003; Cheung and Wei, 2006; Villalonga and Amit, 2006).

Recently, the increasing awareness of the predominance of family ownership around the world (La Porta et al., 1999; Burkart et al., 2003) directed research about ownership/performance relationships more towards the impact of *family* ownership.

Translating the two opposite agency problems in a family ownership context, *benefits* of concentrated family ownership appear when the large undiversified equity position and control of management and directors places the family in an excellent position to influence and monitor the firm. Furthermore, family shareholders have longer investment horizons and as such, a higher investment efficiency (Anderson and Reeb, 2003). Agency *costs* of concentrated ownership would include executive management positions limited only for family members (Anderson and Reeb, 2003), managerial entrenchment (Gomez-Mejia et al., 2001) and free riding such as the use of firm's resources for personal benefits and privileges of family members (Schulze et al., 2003).

Empirical studies concentrating on family ownership are rather scant and from recent dates (e.g. Anderson and Reeb, 2003; Anderson and Reeb, 2004; Maury, 2006; Villalonga and Amit, 2006; Barontini and Caprio, 2006). These studies conclude that family ownership in general and under specific circumstances, such as with a (founding) family CEO, can be considered as an effective organizational structure. Unfortunately, the empirics so far relate to samples of public (family) firms. This focus on public firms excludes some interesting ownership types described in agency theory such as the zero agency-cost base case (Ang et al., 2000), where a firm is owned solely by a single owner-manager and which is very common in private (family) firms. In addition, according to traditional agency theory, privately held and family-managed firms are often considered as a low agency cost case (Jensen and Meckling, 1976; Fama and Jensen, 1983). Nevertheless, Schulze et al. (2001) question this view and argue that agency costs could be high because private ownership lacks disciplining of the market for corporate control and could lead to an adverse selection of labor forces. Furthermore, Schulze et al. (2003) argue that parental altruism in family-managed firms on the one hand could temper self-interest ("bright side of altruism") but on the other hand, could change the incentive structure of the firm, leading to the consumption of

perquisites and privileges by family members ("dark side of altruism"). Which type of agency problem is dominant in private family firms is contingent upon ownership dispersion (Lubatkin et al., 2005). Empirical evidence for public family firms indeed reveals that family ownership has a value enhancing effect but only when combined with specific types of family control and management (Villalonga and Amit, 2006). Evidence for private family firms is still lagging behind. A recent noteworthy exception is the study of Westhead and Howorth (2006) who investigate the ownership - management - performance relationship for a sample of UK private family firms. These authors find that management rather than ownership structure is related to firm performance.

Using a cross sectional sample of 2,863 family firms from the 1998 National Survey of Small Business Finance (NSSBF), we examine the relationship between family ownership and financial performance for small and medium-sized family firms and thereby extend the results of recent studies by Ang et al. (2000) and Villalonga and Amit (2006). The firms in the NSSBF survey are predominantly privately owned giving us the opportunity to investigate a wide spectrum of ownership types (e.g. the "zero agency-cost base case" described in Ang et al., 2000), some of which have been seldom investigated in the ownership/performance literature. In line with studies of Villalonga and Amit (2006), Miller and Le Breton-Miller (2006) and Dyer (2006), we take into account several specific governance characteristics including family ownership and family management. Moreover, Westhead and Howorth (2006) argue that family firms cannot be regarded as a homogeneous group of firms because several 'types' of family firms exist. Distinctions between these types of family firms can be made based on particular dimensions of the 'family effect' such as agency costs, family assets or family liabilities (Dyer, 2006). Therefore, we investigate the ownership – performance relationship by interacting ownership with several dimensions of the 'family effect'. More specifically, our analysis examines the moderating influence of the CEO position (family

versus non-family CEO) and of the generational stage (earlier generational stage versus later generational stage) on the ownership-performance relationship. The fact that family firms are considered as a very heterogeneous group of organizations drives our method of analysis. We estimate a *chained-interaction model* (Kam and Franzese, 2005) in which we combine ownership dispersion proxies with the moderating variables. Although several studies have investigated the effect of these individual components on firm performance, the several interactions between these variables have– as far as we know – never been investigated in the context of private family firms. Hence, our results provide important evidence about the validity of competing agency explanations of ownership dispersion in private family firms such as the Jensen-Meckling model versus recent agency models grounded in the altruism literature (Schulze et al., 2001, 2003).

This paper proceeds as follows. In section 2, we review agency theory and ownership dispersion arguments in a private family firm context. Section 3 describes the data and empirical methodology. In section 4, we present and discuss the results. In section 5, we report the results of the robustness checks. Section 6 concludes the paper.

2. Theoretical background

2.1 Private family firms and agency costs: the concentrated ownership and owner-management hypotheses revisited

In the academic literature, opposite views exist about the impact of family ownership and control on agency costs stemming from the separation of ownership and control. At one extreme, traditional agency models (e.g. Jensen and Meckling, 1976) assume that the effects of concentrated ownership and owner-management will lead to a minimized or even zero

level of agency costs. Given significant shareholdings, family owners will possess the incentive, power and information to control their managers, thereby reducing free-rider agency costs with a likely positive influence on performance (Anderson and Reeb, 2003). Moreover, managers and large family shareholders are often the same persons, and therefore, the residual claimants bear (nearly) all of the costs and receive (nearly) all of the benefits of their actions. In addition, the potential problem of self-interest by family agents is assumed being tempered by kinship and parental altruism (Schulze et al., 2003). Altruism may have several beneficial effects such as the creation of a self-reinforcing system of incentives encouraging family members to be considerate of one another (Schulze et al., 2003) and the enforcement of incentives to communicate and cooperate with each other (Van den Berghe and Carchon, 2003).

More recently, this traditional agency view has been contended in the finance literature (e.g. Claessens et al., 2002; Burkart et al., 2003; Shleifer and Vishny, 1997) as well as in the management literature (e.g. Gomez-Mejia et al., 2001; Schulze et al., 2001; Schulze et al., 2003; Chrisman, et al., 2004; Lubatkin et al., 2005). These studies discuss several negative effects of concentrated ownership and owner-management in (private) family firms. Schulze et al. (2001) argue that private ownership - because it isolates firms from the discipline of external markets - and owner-management expose firms to agency problems largely ignored by the model of Jensen and Meckling (1976), such as hold-up and adverse selection problems. Private firms are expected to be more vulnerable to self-control problems than public firms because “private firms’ large-block-holding owner-managers enjoy almost unchallenged discretion over the use of their firm’s assets” (Lubatkin et al., 2005, p. 317). Moreover, parental altruism not only mitigates agency problems in family firms (‘bright side of altruism’) but can also negatively affect the ability of the firm’s owner manager to exercise self-control (‘dark side of altruism’).

This higher vulnerability of controlling owners for self-control problems not only increases the agency problem of moral hazard but also hold up and adverse selection threats (Lubatkin et al., 2005). First, once a family has enough ownership for unchallenged control, it can begin to abuse its power by taking resources out of the business (Claessens et al., 2002). In this case, a major owner may use its controlling position in the firm to extract private benefits at the expense of the minority shareholders. In addition, family controlled firms have a higher likelihood to be characterized by special dividends payout or excessive compensation (Anderson and Reeb, 2003). Secondly, parental altruism and its interrelated self-control problems may increase problems of adverse selection in the labour markets. Because of an often strong resistance in family firms to offer stock and stock options as compensation in order to control dilution, an unfavourable self-selection process in the external labour market could emerge (Lubatkin et al., 2005). Moreover, restricting promotional opportunities and top management positions to a labour pool of family members can be problematic as the risk of hiring low quality employees increases. Shleifer and Vishny (1997) suggest that one of the greatest costs that large shareholders can impose is remaining active in management even if they are no longer competent or qualified to run the firm. Anderson and Reeb (2003) suggest that the family's role in recruiting managers and directors can create barriers for third parties in taking control of the firm, suggesting greater managerial entrenchment and lower firm values relative to non-family firms.

So far, we can conclude that an owner-managed firm, which is considered as the zero agency-cost base case in the model of Jensen and Meckling (1976), is in fact no zero agency cost case because of ignored agency problems (hold-up, adverse selection) in private family firms as discussed in Schulze et al. (2001). Therefore, we posit that owner-management in private family firms has a negative relationship with firm performance.

Hypothesis 1: Owner-management in private family firms is negatively related to firm performance.

To put forward hypotheses concerning the ownership-performance relationship in private family firms, we need a more thorough discussion of ownership dispersion over the generations which is presented in the next section.

2.2 Generational evolution and ownership dispersion in private family firms

Lubatkin et al. (2005, p.323) argue that the nature of altruism and the types of agency problems resulting from it depend on the ownership dispersion of the firm. One common feature of family firms is the generational stage. Several models of the generational evolution have been described in the literature but the model of Gersick et al. (1997) is one of the most widely accepted in the field. Generational evolution and ownership dispersion are assumed to be often entwined. Based on the model of Gersick et al. (1997), Lubatkin et al. (2005) distinguish between three types of family firms based on three broad stages of ownership dispersion over generations: (1) the controlling-owner family firm where the founder/owner/manager also exercises the rights of control, (2) a sibling partnership, where ownership is in hands of several members of a single generation and (3) a cousin consortium where ownership is further fractionalized when it is passed on to third and later generations. Schulze et al. (2003) discuss the agency consequences when equity in a family firm is distributed among family shareholders instead of among outside shareholders. They argue that dispersed family ownership in the controlling-owner stage could result in free riding of family insiders on the controlling owner's equity. This problem further increases in the sibling partnership stage because the nature of altruism makes it much harder to achieve alignment of interests among shareholders. Sibling shareholders will often put the welfare of the own

nuclear household before the welfare of the extended family. Hence, agency problems in sibling partnerships are quite similar as in the controlling-owner stage with the difference that intra-family conflict may intensify when the families age in the sibling partnership. As a consequence, Schulze et al. (2003, p. 184) argue that ownership dispersion in this generational stage has an exacerbating effect on agency costs.

However, agency problems are expected to *decrease* with ownership dispersion in the cousin consortium stage. Schulze et al. (2003) argue that in the cousin consortium stage – although more family members involved could increase the likelihood of conflicts - more outside family members (not employed by the firm) become shareholder and hence, behave more as rational diversified investors. Furthermore, they argue that ownership dispersion in the cousin consortium stage mitigates the double moral hazard problem that characterizes the two earlier generational stages, resulting in a better alignment of interests of the inside family directors. Finally, Lubatkin et al. (2005) state that many of the altruistic attributes, which make family firms theoretically distinct can disappear during the cousin consortium stage. Given the association between parental altruism and adverse selection and hold up problems, a lower degree of altruism will lessen the likelihood of these agency problems occurring in the cousin consortium stage.

Consistent with the arguments of Schulze et al. (2003), we hypothesize a negative relationship between ownership dispersion and firm performance when the family firm is in an earlier generational stage (controlling owner and sibling partnership stage) and a positive relationship when the firm is in a later generational stage (cousin consortium). Therefore we postulate:

Hypothesis 2a: Ownership dispersion is negatively related to firm performance in the controlling owner and sibling partnership stage.

Hypothesis 2b: Ownership dispersion is positively related to firm performance in the cousin consortium stage.

3. Method

3.1. Data set

Our analysis is based on the database of the 1998 'National Survey of Small Business Finance' (NSSBF). This survey, conducted five-yearly by the Federal Reserve Board of Governors and the U.S. Small Business Administration, collects information on small businesses (fewer than 500 employees) in the US. This survey collects data from a sample of 3,561 small firms which can be considered representative of the 5.3 million non-farm, non-financial SMEs in the US. The NSSBF database provides us with the necessary information on firm, management and ownership characteristics. Since the focus of this study is on family firms, 3,039 firms of the NSSBF database were retained. In our study, a firm is defined as a family firm if more than 50% of the firm is owned by a single family. After the removal of outliers and missing values, we ended up with a final sample of 2,863 family firms.

3.2. Variables

As *dependent* variable the commonly used accounting performance measure Return on Assets (ROA) is used. ROA is defined as income *after* expenses excluding taxes divided by total assets. ROA before corporate taxes is used due to the fact that our database includes several organisational forms (sole proprietorships, S-corporations, C-corporations, partnerships). Only C-corporations pay *corporate* income taxes, while the other organisational forms pay *personal* income taxes not reported in the NSSBF survey. In order to compare the

performance for all firms on an equal basis, we use in this study ROA before corporate income taxes. In the robustness section, we re-estimate the regressions using the industry adjusted ROA as dependent variable.

The *independent* variables consist of several ownership, management and family firm characteristics. The NSSBF database contains two useful variables which capture different dimensions of ownership structure: (1) the percentage ownership of the main shareholder (CONCENTR) and (2) the number of owners (NOW). The responsibility for the day-to-day management of the firm is measured by a dummy variable MGR ('1' for a family manager being a partner, owner or stockholder of the firm; '0' for a hired employee/paid manager).

The NSSBF database does not contain direct measures for the generation in charge of the family firm. However, we do find information about how the current partners have acquired the company: (1) established by one or more of the current partners, (2) purchased or (3) inherited or acquired as a gift. We recode this variable in order to obtain a dummy variable which proxies for generation (GEN) where a firm that is "established" or "purchased"[1] is classified as being in an earlier generational stage (GEN=0) and a firm that is "inherited or acquired as a gift" is classified as being in a later generational stage (GEN=1). We expect that the earlier generational stage (GEN=0) class mainly comprises family firms in the controlling owner or sibling partnership stage and that the later generational stage (GEN=1) class mainly comprises family firms in the cousin consortium stage based on the following arguments. First, "established" means that the founder is still a partner in the firm. When the founder is still a partner, we expect the firm to be either in the controlling-owner stage or in the sibling partnership stage. In the latter case (sibling partnership), the founding partner will, in most cases, not be active anymore in the day-to-day management of the firm, although he is still a shareholder. The likelihood that the founder is still present as a partner in the cousin consortium stage is very small, and thus, cousin consortia will be rare within the group of

firms “established by one or more of the current partners”. Second, we learn from table 2 that 6% of the sample firms are classified as being in a later generational stage. This 6% (and more than 8% for the C-corporations) is quite close to the 10% reported in other studies for firms in the third generation or later (e.g. Stavrou and Swiercz, 1998). This confirms our expectation that this category comprises the firms in a cousin consortium stage (third generation and later).

Although we would have liked to dispose of a more accurate measure of the generational phase, we consider this measure to be suitable for testing our hypotheses based on the argument of Schulze et al. (2003) that ownership dispersion is expected to increase agency problems in the controlling owner and sibling partnership stages and decrease them in the cousin consortium stage.

As argued before, we take into account several interaction effects considered relevant in this study. In the first chained interaction model, we concentrate on the percentage ownership of the primary shareholder. In this model, we include the interaction between ownership percentage of the primary owner and (1) the number of owners (CONCENTR_NOW), (2) management (MGR_CONCENTR) and (3) generation (GEN_CONCENTR). In the second chained interaction model, we concentrate on the number of owners to measure the ownership dispersion. Analogous to the first interaction model, we interact the number of owners (NOW) with the other ownership, management and family firm variables of the model. We construct the interaction variables CONCENTR_NOW, MGR_NOW and GEN_NOW.

Finally, we also control in each model for firm age (AGE), firm size (LNASSETS), leverage, measured by total debt over total assets (LEVERAGE), organisational form[2] and the two-digit SIC code[3]. Tables 1 and 2 report descriptive statistics for the entire sample and for the subsample of C-corporations. The average firm has total assets of $1,145,217 is more than

14 years old and has a high ownership concentration. 90% of the firms are led by a family manager and 94% of the firms are in the controlling-owner or sibling partnership stage.

INSERT TABLE I ABOUT HERE

INSERT TABLE II ABOUT HERE

3.3. Method

Even though interaction models are quite common in different disciplines of research, the interpretation of these models is often flawed and inferential errors are common (Brambor et al., 2006; Kam and Franzese, 2005). Consequently, our empirical knowledge in different domains (e.g. corporate governance) may be based, at least partially, on misinterpretations. By means of our study we want to contribute to the performance-governance literature avoiding any of these misinterpretations. In an interactive model, the effect of any independent variable x on the dependent variable y is not any single constant. The effects depend on the *coefficients* of x and xz, the interaction term as well as on the *value* of z.

In this study, we estimate, beside the non-interactive model, two standard linear-interactive models. In chained interaction model 1, we study the interaction of the different family and management variables with the percentage ownership of the primary shareholder:

$$\begin{aligned} ROA = {} & \beta_0 + \beta_1 CONCENTR + \beta_2 NOW + \beta_3 MGR + \beta_4 GEN \\ & + \beta_{12}(CONCENTR\_NOW) + \beta_{13}(MGR\_CONCENTR) + \beta_{14}(GEN\_CONCENTR) \\ & + \beta_5 LNASSETS + \beta_6 AGE + \beta_7 LEVERAGE + \delta' ORG + \theta' IND + u \end{aligned}$$

In chained interaction model 2, we study the interaction of the different family and management variables with the number of owners as measure of ownership dispersion:

$$\begin{aligned} ROA = & \beta_0 + \beta_1 CONCENTR + \beta_2 NOW + \beta_3 MGR + \beta_4 GEN \\ & + \beta_{12}(CONCENTR\_NOW) + \beta_{23}(MGR\_NOW) + \beta_{24}(GEN\_NOW) \\ & + \beta_5 LNASSETS + \beta_6 AGE + \beta_7 LEVERAGE + \delta' ORG + \theta' IND + u \end{aligned}$$

The results of these regressions, using Ordinary Least Squares (OLS), are reported in table 3. We then focus on calculating the marginal effects using derivatives to describe the effects of the variable of interest at various meaningful levels of the other variables (Kam and Franzese, 2005). The standard deviations are recalculated, based on the variance-covariance matrix of the coefficients estimates in order to verify whether the variables in our study, incorporating the interactions that might occur, show significant results. Results of these calculations are reported in tables 4 to 7.

4. Results

The regression results of the chained interaction models are presented in table 3. Beside the control variables, only few of the variables under study appear, at first sight, to be significant in explaining the performance of family firms. Based on the coefficients reported in table 3, one might be inclined to conclude that only few of the variables of interest have a significant effect on firm performance.

However, conclusions based on the calculations reported in tables 4 to 7 are much more balanced. In these tables marginal effects of variables are calculated, through the use of derivatives, at different meaningful values of other variables. In addition to the results of the estimations for the whole sample, the results for a sub-sample of family firms organized as C-corporations are reported. C-corporations are subject to corporate taxation, in contrast to

partnerships and S-corporations whose owners pay personal income taxes on their earnings from the firm. The results relating to the sub-sample of C-Corporations can be compared to those of Ang et al. (2000) who exclude partnerships and S-corporations from their sample.

INSERT TABLE III ABOUT HERE

In table 4, the effect of family management (or not) on firm performance is studied. For the whole sample, the results indicate that family firms led by a family manager holding a large ownership share (>=85%) (panel a) or being accompanied by few other owners (panel b) exhibit significant lower profitability than family firms led by an outside manager. This result confirms our first hypothesis and indicates that the adverse effects of family ownership on firm performance are potentially magnified in the presence of concentrated ownership and owner-management, as indicated by Schulze et al. (2003) and Lubatkin et al. (2005). For the sub-sample of C-Corporations, however, we find the opposite results: family management has a positive impact on firm profitability when the main owner has an ownership percentage of more than 85% (panel a) or when the number of owners does not exceed 8 (panel b). The latter result is in line with that of Ang et al. (2000) who find, for a sample of C-corporations, that agency costs are higher when an outsider manages the firm. At this moment, it is not clear why the effect of family versus outside management depends on the organizational form. One possible reason is that a C-Corporation is associated with higher professionalism compared to other organizational forms. Gedajlovic et al. (2004) argue that becoming more 'professional' may involve substantial opportunity costs for the founder, especially since the privileges owner-management yields may be derived from parental altruism or nepotism, not perceived

as legitimate in the context of a professionally managed firm. In line with this argument, altruism and owner-opportunism, leading to self-control problems, may diminish as the firm professionalizes. In a professionally managed firm, the traditional equity related agency costs may prevail (Jensen and Meckling, 1976) which can be successfully solved by a close alignment of ownership and management.

INSERT TABLE IV ABOUT HERE

In table 5, the effect of ownership concentration/dispersion on firm performance is studied. From table 5, panel a, it appears that ownership concentration, as measured by the percentage ownership of the primary owner, is insignificantly related to performance in the earlier generational stages (controlling owner or sibling partnership stage). This result does not confirm hypothesis 2a, which predicts a positive relation between ownership concentration and firm performance in these stages. Ownership concentration, however, is significantly and negatively related to firm performance when the family firm is in a later generation (cousin consortium). This result is consistent with hypothesis 2b. The negative relation between ownership concentration and performance in the cousin consortium is independent of the number of owners and of the fact whether the manager is a family member or not. The result is valid for the whole sample as well as for the sub-sample consisting of C-Corporations. The analysis in table 5, panel b, supports the above conclusions. Higher ownership dispersion, as measured by the number of owners, has no effect in earlier generational stages but has a positive significant effect on performance when the family firm is in hands of a later generation, independently of the percentage ownership of the main

owner. For C-corporations, the results are, again, similar. Our findings contradict those of Ang et al. (2000) which indicate that agency costs are inversely related to the ownership percentage of the primary owners and positively related to the number of (non-managing) shareholders[4]. Our results, however, support the theoretical ideas of Schulze et al. (2003) that outside family members in later generations behave as rational investors and hence, agency problems such as free riding, self-control problems and adverse selection in the labour market will decrease, resulting in a positive impact on firm performance. Moreover, the results in table 5 indicate that the negative (positive) effect of ownership concentration (dispersion) in the cousin consortium is stronger when the firm is led by a family CEO. Ownership dispersion thus seems to be especially beneficial when agency problems are exacerbated by the presence of a family CEO (owner-managed).

INSERT TABLE V ABOUT HERE

Higher ownership dispersion in later generations seems to mitigate several specific conflicts in family firms. We further scrutinize the effects of generational evolution on financial performance, taking account of ownership dispersion, in table 6. The results in table 6, panel a, suggest that, when the primary owner owns less than 75% of the firms[5], family firms in the cousin consortium have a higher performance than family firms in earlier generational stages. Accordingly, results in table 6, panel b, suggest that, when ownership dispersion is high, family firms in the cousin consortium exhibit higher performance than family firms in earlier generational stages. Moreover, the significant effect of generational evolution on performance is stronger the more dispersed (less concentrated) equity is. These

results are valid for the whole sample as well as for the sub-sample of C-Corporations. Although we cannot differentiate between active and non-active family members, these results suggest that ownership dispersion in the controlling-owner stage is related to the inclusion of more *active* family agents ('the children'). When more active family members are involved, agency problems emerging from the potential for free riding of the children and the lack of monitoring and disciplining by parents due to an altruistic mind setting increase. In later generational stages, on the contrary, ownership dispersion seems to be related to the inclusion of more non-active family shareholders who more frequently focus on economic objectives, effective monitoring and operational efficiency.

INSERT TABLE VI ABOUT HERE

The results in table 7, panel a, add to our prior conclusions and suggest that the number of owners has a significant positive effect on firm performance if the largest shareholder has an ownership share between 40% and 60%. Neither is an equal spread of ownership over shareholders nor is high ownership concentration profit enhancing. Table 7, panel b, confirms these results: ownership concentration has a significant negative effect on firm performance when the number of owners is relatively low (between one and three).

INSERT TABLE VII ABOUT HERE

Finally, the control variables firm size, age and leverage appear to have a significant effect on profitability. Larger firms have a significant lower profitability; older firms have a significant higher profitability. High-levered firms have a significant higher profitability than low-levered firms.

5. Robustness checks

In order to verify the robustness of our results reported in the previous section, we carried out two robustness checks (results not reported). First, we tested the robustness of our results by using industry adjusted return on assets (before corporate tax deduction) as the dependent variable. The industry adjusted ROAs were calculated based on the industry averages of the return on assets of the *entire* population of small and medium sized firms, including non family firms, incorporated in the NSSBF 1998. For the entire sample, being a mix of different organisational forms, as well as for the sub-sample of C-corporations, our robustness check confirms the results presented in tables 4 till 7. Only the positive impact of family management on profitability at C-corporations no longer seems to be significant. However, the same significance pattern over the different ownership concentration/ownership dispersion levels still emerges.

In a second robustness check, we verified the unbiasedness of the proxy we used to measure the generational effect (GEN). In this study, purchased firms are categorized as firms that are in an earlier generational stage. However, purchased firms can be either in the sibling partnership stage or in the cousin consortium stage, which is a later generational stage (see endnote 1). Since we cannot exactly identify the stage of these purchased firms, we excluded these firms from our sample in order to verify whether our classification had an impact on the results presented in tables 4 till 7. Excluding the purchased firms leaves us with

a general sample of 2,319 firms and a subsample of 479 C-corporations. We repeated the analysis presented in section 4. The results of the robustness check indicate that our proxy for generation is not significantly biased. The analysis confirms the results of the sample *including* the purchased family firms presented in the previous section. Only for family management, we do find the same significance pattern as presented in section 4, however at lower significance levels.

6. Conclusions

The discussion about the effect of ownership structure on financial performance has a long-lasting history. However, the inclusion of the role of family ownership in the discussion is of recent dates. In this paper, we contribute to the debate by studying the ownership structure/performance relation for a sample of private family firms from the NSSBF 1998 database, taking into account the moderating effect of management and family characteristics. Our analysis is driven by the arguments of Schulze et al. (2003) that private and family ownership expose firms to agency threats ignored by the model of Jensen and Meckling (1976). Our sample of private family firms allows us to examine the underresearched 'zero agency-cost base case' (100% owner-managed) of which the study is essential to draw conclusions about the validity of the contrasting predictions of the Jensen-Meckling (1976) versus the Schulze et al. (2001, 2003) agency models.

The results from our chained interaction models suggest that, contrary to the Jensen-Meckling predictions, owner-management in private family firms is negatively related to firm performance if the owner-manager possesses a large ownership share. Conversely, for the subsample of C-corporations, family managers with a large ownership share have a positive

impact on firm performance. This difference might be accounted for by the higher degree of professionalism present at C-corporations which is expected to decrease the level of altruism and owner opportunism which in turn decreases agency problems of adverse selection and hold up.

Further, our results suggest that ownership dispersion has a positive influence on performance *when* the family firm is in the "cousin consortium" generational stage. Where it has long been presumed that family ownership and governance minimize the equity-related agency cost because parental altruism and kinship between family members temper self-interest, our findings suggest, consistent with the arguments of Schulze et al. (2003), that other agency costs emerge within the family firm. The nature of these costs depends on the generational ownership stage of the firm. Increased ownership dispersion in the sibling generational stage will engender misalignment of incentives, because of the involvement of more active family agents ('the children') into the firm. Parents' altruism will lead them to be generous to their children, even when these children free ride and lack the competence or intention to sustain the wealth creation potential of the firm. When ownership passes to members of the extended family, the majority of whom are not employed in the firm (cousin consortium), these members will act more as rational investors, bringing the interests of inside family directors into alignment. Furthermore, our results suggest that ownership dispersion seems to be especially beneficial when agency problems are exacerbated by the presence of a family CEO (owner-managed). Consequently, we conclude that agency costs in private family firms seem to be higher than previously has been proposed by traditional agency models which supports the propositions put forth by Schulze et al. (2001, 2003).

Our research represents an empirical attempt to pinpoint the effect of ownership dispersion on the performance of private family firms. It does have, however, its limitations. Therefore, several challenges for future research remain. First, the NSSBF 1998 database does

not allow one to make a very accurate distinction between the different generations of family firms. Further research may scrutinize our findings about the differential effect of family firm generations on performance. Secondly, taking into account the difference between active and non-active family members may confirm some assumptions we made and thus may enrich our conclusions. Ultimately, the availability of data on more specific governance and management characteristics (e.g. board size, board composition, CEO remuneration) in private family firms could further refine our conclusions.

Notes

[1] The sample contains 544 firms that indicated to be 'purchased' firms which we recoded as firms in an earlier generational stage. We cannot, however, identify the exact generational stage of these firms which means that this category could also include firms in the cousin consortium stage. Nevertheless, the potential number of misclassified firms is expected to be rather small so that a potential bias is minimal. We formally tested for this potential bias in the results in the robustness section by recalculating the models without the 'purchased firms' (see section 5). The robustness tests confirmed the results of the full sample.

[2] We include 9 dummy variables for each organisational form distinguishing between sole proprietorships, partnerships, LLP with tax filed as partnerships, LLP with tax filed as corporation, S-corporations, C-corporations, LLC with tax filed as partnerships and LLC with tax filed as sole proprietor.

[3] Following Ang et al (2000), we include 48 two-digit SIC codes. Because we leave out SIC codes including less than 6 firms, 30 firms are removed from the sample. Our final sample consists of 2,863 family firms.

[4] Ang et al. (2000) do not consider any interaction effects. Their results, however, are not univocal and depend on whether a univariate or multivariate test-setting is used and on the measure of agency costs used.

[5] 70% in the case of C-corporations.

[6] As pointed out in footnote 7, these results are not univocal and depend on whether a univariate or multivariate test-setting is used and on the measure of agency costs used.

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Table I – Descriptive statistics

	Entire sample of family firms (n=2,863)					**Only C-corporations** (n=619)				
Variable	*Mean*	*Median*	*Std.dev.*	*Min.*	*Max.*	*Mean*	*Median*	*Std.dev.*	*Min*	*Max.*
Total assets	1,145,217	79,997	4,710,949	50	99,912,000	2,217,332	332,134	6,934,436	50	88,816,594
Age of the firm (AGE)	14.4	12	11.5	0	97	17.49	16	12.38	1	81
Ownership concentration (CONCENTR)	86.9	100	22.7	1	100	76.9	95	26.0	1	100
Number of owners (NOW)	1.8	1	3.7	1	97	3.1	2	7.3	1	97
Leverage	1.1	0.4	3.5	0	85.5	1.2	0.5	4.5	0	85.5
Return on assets before taxes (ROA)	1.4	0.3	3.9	-7.9	42.3	0.8	0.1	2.6	-6.5	26.7

Table II – Percent distributions of firms in the sample

Variables	*% of the sample*	
	Entire sample of family firms (n=2,863)	**Only C-corporations** (n=619)
Family management (MGR)		
1 (family management)	90.6%	85.8%
0 (hired employee/paid manager)	9.4%	14.2%
Generation (GEN)		
0 (controlling owner/sibling partnership)	94.3%	91.6%
1 (cousin consortium)	5.7%	8.4%
Ownership concentration (CONCENTR)		
25% or less	1,6 %	2.9%
50% or less	16.4 %	27.3%
75% or less	24.8%	43.9%
95% or less	27.5%	50.1%
Number of owners (NOW)		
1	71.6%	48.6%
2	17.6%	27.3%
3	4.2%	9.5%
4	2.4%	5%
5	1.4%	2.6%
>5	2.8%	6.9%

Table III – OLS estimation of the determinants of profitability (ROA before taxes) of family firms

Variables	Model without interaction effects	Chained interaction model 1[1]	Chained interaction model 2[1]
Ownership characteristics			
CONCENTR	-0.0062 (0.0039)	0.0064 (0.0098)	-0.0065 (0.0042)
NOW	0.0292 (0.0199)	0.0143 (0.0445)	-0.0294 (0.0571)
Management characteristic			
MGR	-0.3715 (0.2466)	0.6416 (0.8860)	-0.4740* (0.2649)
Generation			
GEN	0.4416 (0.3092)	2.3968 *** (0.8505)	0.1027 (0.3501)
Interaction effects			
CONCENTR_NOW		0.0003 (0.0008)	0.0004 (0.0008)
MGR_CONCENTR		-0.0118 (0.0100)	
GEN_CONCENTR		-0.0254** (0.0103)	
MGR_NOW			0.0377 (0.0416)
GEN_NOW			0.1012** (0.0508)
Control variables			
LNASSETS	-0.6333*** (0.0393)	-0.6387*** (0.0394)	-0.6395*** (0.0395)
AGE	0.0223 *** (0.0063)	0.0224*** (0.0063)	0.0223 *** (0.0063)
LEVERAGE	0.0486 ** (0.0200)	0.0477 ** (0.0200)	0.0474 ** (0.0200)
Constant	9.0916*** (0.7758)	8.0474*** (1.0842)	9.2925*** (0.7960)
Number of obs.	2,863	2,863	2,863
F value	7.20***	6.99***	6.96***
R^2	0.1395	0.1417	0.1412

[1]The chained interaction model 1 measures ownership dispersion by the percentage ownership of the primary shareholder; chained interaction model 2 measures ownership dispersion by the number of owners.

*, **, *** significant at the 10%, 5% and 1% level respectively (two-tailed test). Robust asymptotic standard errors reported in parentheses. The regression also includes dummy variables to represent the 9 organisational types described in footnote 7. We also controlled for the industry by including dummy variables for the two digit SIC code. (Results not reported)

Table IV: Effect of family management on profitability

Panel a: Chained interaction model 1

	∂y/∂MGR[1]	*Std. dev.*	*t-stat.*		*∂y/∂MGR*[2]	*Std. dev.*	*t-stat.*
Entire sample of family firms				**Only C-corporations**			
CONCENTR=10%	0.5234	0.7900	0.662	CONCENTR=10%	-0.0357	0.9950	-0.035
CONCENTR=50%	0.0506	0.4277	0.118	CONCENTR=50%	0.2117	0.5356	0.395
CONCENTR=75%	-0.2449	0.2670	-0.917	CONCENTR=75%	0.3664	0.3350	1.094
CONCENTR=85%	-0.3631	0.2489	**-1.458***	**CONCENTR=85%**	0.4282	0.3153	**1.358***
CONCENTR=100%	-0.5403	0.2930	**-1.844****	**CONCENTR=100%**	0.5210	0.3760	**1.386***

*, **, *** significant at the 10%, 5% and 1% level respectively (one tailed).
[1] ∂y/∂MGR= 0.64162-0.0118*CONCENTR [2] ∂y/∂MGR = -0.0975+0.00618*CONCENTR

Panel b: Chained interaction model 2

	∂y/∂MGR[1]	*Std. dev.*	*t-statistic*		*∂y/∂MGR*[2]	*Std. dev.*	*t-statistic*
Entire sample of family firms				**Only C-corporations**			
NOW=1	-0.4362	0.2527	**-1.726****	**NOW=1**	0.4276	0.3204	**1.334***
NOW=2	-0.3984	0.2469	**-1.614***	**NOW=2**	0.4288	0.3135	**1.367***
NOW=3	-0.3607	0.2481	**-1.453***	**NOW=5**	0.4322	0.3117	**1.386***
NOW=5	-0.2851	0.2705	-1.054	**NOW=8**	0.4357	0.3377	**1.290***
NOW=10	-0.0962	0.4035	-0.238	NOW=10	0.4379	0.3677	1.190

*, **, *** significant at the 10%, 5% and 1% level respectively (one tailed).
[1] ∂y/∂MGR= -0.47405+0.03778*NOW
[2] ∂y/∂MGR= 0.426544+0.00114*NOW

Table V: Effect of ownership concentration/dispersion on firm profitability

Panel a: Chained interaction model 1

	∂y/∂CONCENTR[1]	*Std. dev.*[2]	*t-stat.*		*∂y/∂CONCENTR*[3]	*Std. dev.*	*t-stat.*
Entire sample of family firms				**Only C-corporations**			
MGR=0 & GEN=1				*MGR=0 & GEN=1*			
NOW=1	-0.0186	0.0133	**-1.404***	**NOW=1**	-0.0374	0.0177	**-2.110****
NOW=2	- 0.0183	0.0132	**-1.391***	**NOW=2**	-0.0375	0.0176	**-2.123****
NOW= 6	-0.0173	0.0135	**-1.283***	**NOW= 5**	-0.0379	0.0176	**-2.149****
NOW=10	-0.0161	0.0145	-1.107	**NOW=10**	-0.0386	0.0156	**-2.466*****
MGR=0 &GEN=0				*MGR=0 &GEN=0*			
NOW=1	0.0067	0.0097	0.691	NOW=1	-0.0018	0.0122	-0.148
NOW=2	0.0070	0.0097	0.721	NOW=2	-0.0019	0.0122	-0.159
NOW= 5	0.0079	0.0102	0.774	NOW=5	-0.0023	0.0124	-0.187
NOW=10	0.0093	0.0122	0.763	NOW=10	-0.0030	0.0134	-0.222
MGR=1 &GEN=1				*MGR=1 &GEN=1*			
NOW=1	-0.0304	0.0102	**-2.989*****	**NOW=1**	-0.0312	0.0129	**-2.418*****
NOW=2	-0.0301	0.0101	**-2.997*****	**NOW=2**	-0.0313	0.0127	**-2.470*****
NOW= 5	-0.0293	0.0102	**-2.884*****	**NOW= 5**	-0.0317	0.0126	**-2.520*****
NOW=10	-0.0279	0.0117	**-2.390*****	**NOW=10**	-0.0324	0.0131	**-2.474*****
MGR=1 &GEN=0				*MGR=1 &GEN=0*			
NOW=1	-0.0050	0.0043	-1.190	NOW=1	0.0043	0.0048	0.895
NOW=2	-0.0047	0.0042	-1.138	NOW=2	0.0042	0.0048	0.879
NOW=5	-0.0039	0.0050	-0.787	NOW= 5	0.0038	0.0051	0.745
NOW=10	-0.0025	0.0082	-0.306	NOW=10	0.0032	0.0070	0.454

*, **, *** significant at the 10%, 5% and 1% level respectively (one tailed).

[1] ∂y/∂CONCENTR= 0.00647+0.000282*NOW -0.0118*MGR-0.0254*GEN

[2] Std dev. is based on the variance-covariance matrix (not reported) and is calculated for each line in the above table based on the following formula:

=(CONCENTR*CONCENTR) + (GEN (1,0)*GEN_CONCENTR*GEN_CONCENTR) + (NOW (1,…)*CONCENTR_NOW*CONCENTR_NOW) + (2*GEN(1,0)*GEN_CONCENTR*CONCENTR) + (2*NOW(1,…)*CONCENTR_NOW*CONCENTR) + (2*GEN (1,0)*NOW(1,…)* GEN_CONCENTR * CONCENTR_NOW) + (MGR(1,0)²*MGR_CONCENTR*MGR_CONCENTR) + (2*MGR(1,0)* MGR_CONCENTR*CONCENTR) + (2*MGR(1,0)*NOW(1,…)*MGR_CONCENTR* CONCENTR_NOW) + (2*MGR(1,0)*GEN(1,0)*GEN_CONCENTR*MGR_CONCENTR)

[3] ∂y/∂CONCENTR= -0.00169-0.000131*NOW +0.00618*MGR-0.0356*GEN

For the other hypotheses, the calculation was done analogously.

Panel b: Chained interaction model 2

	∂y/∂NOW[1]	*Std. dev.*[2]	*t-stat.*		*∂y/∂NOW*[3]	*Std. dev.*	*t-stat.*
Entire sample of family firms				**Only C-corporations**			
MGR=0 &GEN=1				*MGR=0 &GEN=1*			
CONC[2]=10%	0.0755	0.0669	1.128	CONC[2]=10%	0.1092	0.0550	**1.986****
CONC=25%	0.0810	0.0611	**1.326***	CONC=50%	0.1020	0.0479	**2.130****
CONC=75%	0.0995	0.0615	**1.618***	CONC=75%	0.0975	0.0509	**1.916****
CONC=100%	0.1088	0.0726	**1.498***	CONC=100%	0.0930	0.0588	**1.582***
MGR=0 &GEN=0				*MGR=0 &GEN=0*			
CONC=10%	-0.0257	0.0502	-0.511	CONC=10%	0.0046	0.0380	0.122
CONC=50%	-0.0109	0.0334	-0.326	CONC=50%	-0.0025	0.0234	-0.108
CONC=75%	-0.0016	0.0388	-0.041	CONC=75%	-0.0070	0.0271	-0.260
CONC=100%	0.0075	0.0535	0.141	CONC=100%	-0.0115	0.0387	-0.298
MGR=1 & GEN=1				*MGR=1 & GEN=1*			
CONC=10%	0.1133	0.0530	**2.137****	**CONC=10%**	0.1103	0.0458	**2.409*****
CONC=50%	0.1280	0.0467	**2.742*****	**CONC=50%**	0.1031	0.0432	**2.388*****
CONC=75%	0.1373	0.0553	**2.483*****	**CONC=75%**	0.0986	0.0498	**1.981****
CONC=100%	0.1465	0.0701	**2.091****	**CONC=100%**	0.0942	0.0605	**1.556***
MGR=1 & GEN=0				*MGR=1 & GEN=0*			
CONC=10%	0.0120	0.0396	0.304	CONC=10%	0.0057	0.0288	0.201
CONC=50%	0.0268	0.0273	0.981	CONC=50%	-0.0014	0.0209	-0.067
CONC=75%	0.0361	0.0387	0.932	CONC=75%	-0.0059	0.0306	-0.193
CONC=100%	0.0453	0.0568	0.798	CONC=100%	-0.0104	0.0449	-0.231

*, **, *** significant at the 10%, 5% and 1% level respectively (one tailed).

[1] $\partial y/\partial NOW = -0.029417+0.00037*CONCENTR+0.03778*MGR+0.10123*GEN$

[2] CONC is the abbreviation for CONCENTR

[3] $\partial y/\partial NOW = 0.00645-0.00018*CONCENTR+0.00114*MGR+0.1045*GEN$

Table VI: the effect of generation on firm profitability

Panel a: Chained interaction model 1

	$\partial y/\partial GEN^1$	*Std. dev.*	*t-stat.*		$\partial y/\partial GEN^2$	*Std. dev.*	*t-stat.*
Entire sample of family firms				**Only C-corporations**			
CONCENTR=10%	2.1426	0.7550	**2.837*****	**CONCENTR=10%**	2.6636	0.8796	**3.028*****
CONCENTR=50%	1.1258	0.4130	**2.725*****	**CONCENTR=50%**	1.2368	0.4716	**2.622*****
CONCENTR=75%	0.4903	0.3079	**1.592***	**CONCENTR=70%**	0.5234	0.3976	**1.316***
CONCENTR=80%	0.3632	0.3094	1.173	CONCENTR=75%	0.3450	0.4049	0.852
CONCENTR=100%	-0.1451	0.3909	-0.371	CONCENTR=100%	-0.5467	0.5705	-0.958

*, **, *** significant at the 10%, 5% and 1% level respectively (one tailed).
[1] $\partial y/\partial GEN$= 2.3968-0.02542*CONCENTR
[2] $\partial y/\partial GEN$ = 3.0203 - 0.03567*CONCENTR

Panel b: Chained interaction model 2

	$\partial y/\partial GEN^1$	*Std. dev.*	*t-statistic*		$\partial y/\partial GEN^2$	*Std. dev.*	*t-statistic*
Entire sample of family firms				**Only C-corporations**			
NOW=1	0.2040	0.3294	0.6193	NOW=1	0.1127	0.4358	0.258
NOW=2	0.3052	0.3156	0.9670	NOW=2	0.2173	0.4189	0.518
NOW=3	0.4064	0.3096	**1.312***	**NOW=5**	0.5310	0.3955	**1.342***
NOW=5	0.6089	0.3222	**1.889****	**NOW=10**	1.0539	0.4537	**2.322****
NOW=10	1.1150	0.4625	**2.410*****				

*, **, *** significant at the 10%, 5% and 1% level respectively (one tailed).
[1] $\partial y/\partial GEN$= 0.10277+0.10123*NOW
[2] $\partial y/\partial GEN$= 0.008132+0.1045*NOW

Table VII: Effect of ownership concentration/dispersion on firm profitability

Panel a: Chained interaction model 1

	$\partial y/\partial NOW^{1}$	*Std. dev.*	*t-stat.*		$\partial y/\partial NOW^{2}$	*Std. dev.*	*t-stat.*
Entire sample of family firms				**Only C-corporations**			
CONCENTR=10%	0.0172	0.0369	0.465	CONCENTR=10%	0.0108	0.0275	0.392
CONCENTR=40%	0.0256	0.0196	**1.302***	CONCENTR=50%	0.0056	0.0157	0.358
CONCENTR=50%	0.0284	0.0190	**1.499***	CONCENTR=75%	0.0023	0.0247	0.095
CONCENTR=60%	0.0313	0.0221	**1.417***	CONCENTR=100%	-0.0009	0.0387	-0.024
CONCENTR=75%	0.0355	0.0309	1.147				
CONCENTR=100%	0.0426	0.0499	0.854				

*, **, *** significant at the 10%, 5% and 1% level respectively (one tailed).
[1] $\partial y/\partial NOW = 0.01435+0.0002826*CONCENTR$
[2] $\partial y/\partial NOW = 0.0122-0.0001313*CONCENTR$

Panel b: Chained interaction model 2

	$\partial y/\partial CONCENTR^{1}$	*Std. dev.*	*t-stat.*		$\partial y/\partial CONCENTR^{2}$	*Std. dev.*	*t-stat.*
Entire sample of family firms				**Only C-corporations**			
NOW=1	-0.0062	0.0039	**-1.561***	NOW=1	0.0010	0.0045	0.228
NOW=2	-0.0058	0.0039	**-1.501***	NOW=2	0.0008	0.0044	0.190
NOW=3	-0.0054	0.0040	**-1.348***	NOW=5	0.0003	0.0048	0.063
NOW=4	-0.0051	0.0044	-1.166	NOW=10	-0.0006	0.0069	-0.086
NOW=10	-0.0028	0.0082	-0.351				

*, **, *** significant at the 10%, 5% and 1% level respectively (one tailed).
[1] $\partial y/\partial CONCENTR = -0.00659+0.00037*NOW$
[2] $\partial y/\partial CONCENTR = 0.00121-0.000181*NOW$