

CASH HOLDINGS OF SMALL PRIVATE FAMILY FIRMS: EVIDENCE ON THE EFFECT OF GENERATIONAL EVOLUTION

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ABSTRACT

We present empirical evidence on the cash holdings determinants in the under-researched context of private family firms. Results suggest that family firms diverging from the single-owner-managed firm hold higher cash levels which originates in higher shareholder-manager agency costs e.g. free riding of family insiders on the controlling owner's equity using the firm's free cash flows. Moreover, descendant-managed firms hold higher cash levels compared to founder-managed firms due to higher debt agency costs. The descendant's potentially limited capacities and opportunistic behaviour may negatively affect the firm's ability to repay bank loans, decreasing loan availability and increasing the need for cash holdings.

Key words – cash holdings, agency costs, family firm, generation

1. INTRODUCTION

Private family firms are the most dominant organization form. Family-owned or controlled businesses account for over 80% of all firms and 12% of GDP in the United States [1]. Even though there is considerable theoretical and empirical work on the capital structure of public firms and SME's, there is a lack of studies focusing on, in general, the asset structure of private family firms, addressing the effects of *private* family control/ownership.

The level of cash holdings is one of the elements of the asset structure that is under-researched. In a perfect capital market, cash holdings would be irrelevant. However, the assumption of perfect capital markets is certainly not relevant for small private family firms due to the existence of information asymmetries [2]. Information asymmetry is prevalent if a firm knows the expected risk and return of their project, while the bank only knows the average expected return and risk of an average project in the economy. The presence of asymmetric information may give rise to credit rationing due to adverse selection and moral hazard problems [3]. Small family firms are especially vulnerable to information asymmetries since they are not followed by analysts and lack any audited financial statements. Moreover, they are not always willing to release any information to financial institutions since it is a time-consuming, costly occupation. Consequently, small private family firms may cope with difficulties in obtaining external debt finance.

In addition, the family character may exacerbate the shareholder-debtholder agency problem since controlling owners

of private family firms are more vulnerable for self-control problems due to the isolation from the disciplining effect of the external capital market. Family managers would rely on non-pecuniary benefits such as limiting executive management positions only to family members [4], managerial entrenchment [5] and 'free riding' by using the firm's resources for personal benefits and privileges of family members [6]. So family firms would incur a higher probability of risk shifting behaviour, hold up and adverse selection in the labour market, increasing the agency costs of debt [7, 8]. From the point of view of the bank, this could have a negative impact on repayment capacity, leading to a higher interest rate or higher collateral requirements [9, 10, 11].

So, the presence of market imperfections and higher agency costs of debt seems to make cash holdings necessary for private family firms to avoid the high costs of acquiring new debt (transaction cost motive), to meet unanticipated contingencies that may arise, to finance investments if debt financing is unavailable or too costly (precautionary motive) but also to keep control over the firm [12]. Private family firms have a strong desire to keep control. Family firm owners are reluctant to open up equity for non family members because they want to pass the firm onto their heirs.

Empirically, Ozkan and Ozkan [13] confirm that firms having families as ultimate controllers tend to hold more cash. However, there is a growing consensus that private family firms cannot be viewed as a homogeneous entity [14]. Prior studies (e.g. [15]) indicate that the family firm behaviour may change throughout time, as the firm passes from the single owner-managed firm to further generations. This evolution is expected to have an impact on the shareholder-manager and shareholder-debtholder agency conflict and the resulting cash holdings of private family firms. Therefore, in this study, we would like to verify the impact of the generational stage on cash holdings of small private family firms.

This paper contributes to literature in several ways. First, even though the empirical literature on the determinants of cash holdings has recently received a lot of attention (e.g. [13, 16, 17, 18]), most studies are based on listed firms. Any of these studies focuses on the determinants of cash holdings of *private* family firms. We define a small private family firm as a non-listed firm with fewer than 500 employees and more than 50% of the firm owned by a single family [19]. Secondly, we add to the corporate finance and family business literature and further our understanding on the asset structure of private family firms. Thirdly, we take into account the heterogeneity of family firms by considering the effects of generational evolution and the accompanying agency costs.

2. DETERMINANTS OF CORPORATE CASH HOLDINGS IN PRIVATE FAMILY FIRMS

Our empirical model will consist of two main components which will be discussed in the next sections. First, the novelty of our research, being the effect of generational stage on cash holdings will be discussed in section 2.1. Secondly, section 2.2 provides an overview of the traditional determinants of cash holdings that will be included in our model.

2.1. Effect of generational stage on cash holdings

We hypothesize that private family firms that are founded and managed by the current owner who possesses 100% of the shares (i.e. single owner-managed family firm) would incur *lower* cash holdings compared to family firms that diverge from the single owner-manager case. In our study, we will incorporate a dummy variable ‘single owner-managed’ with a value ‘1’ if the family firm is fully owned and managed by a single founder-manager. This hypothesis is based on the existence of a shareholder-manager agency problem.

Traditionally, the zero agency cost case is defined as a firm owned by a single owner-manager [20]. Schulze et al. [6] argue that any deviation from this single owner-managed case would result in shareholder-manager agency costs, which will be translated into higher cash holdings. Discussing the agency consequences when equity is not owned by one single family owner but distributed among *several family shareholders*, they argue that dispersed family ownership could result in free riding of family management on the equity of all the family owners. The family’s management would engage in consumption of private benefits by holding higher cash levels for personal use. They may prefer higher cash balances to pursue personal objectives, to invest in pet projects or to benefit their new nuclear family. The benefit they obtain from free riding would outweigh the (partial) costs they incur by lowering the value of their shareholdings since part of the costs are borne by the other family shareholders. As Jensen [21] suggests, if a firm has higher (free) cash flows, this may induce discretionary behaviour by the firm’s management at the expense of the firm and firm’s shareholders.

If, throughout time, the family firm’s equity is not only distributed among family members but becomes partially *owned by non family members*, the family firm where the majority of the shares is still owned by the family, is expected to become vulnerable to self-control problems due to the large-block-holding family owner-managers that enjoy almost unchallenged discretion over the use of their assets [7]. Parental altruism may also negatively affect the ability of a firm’s owner manager to exercise self control or create adverse selection problems in the labour market which is the dark side of altruism. The family can also begin to abuse its power by taking resources out of the business. Fractional ownership by the family creates agency problems. By holding higher cash reserves to pursue personal objectives, it gives inside family owners incentive to free ride on outside owners equity and to favor consumption over investment [6].

Besides a shareholder-manager agency problem, private family firms would also cope with a shareholder-debtholder agency problem [11, 22]. In their empirical study, Anderson et al. [22] find that family firms in the hands of *founder descendants* cope with a higher cost of debt financing compared to founder-owned firms.

On the one hand, this evidence seems to imply that founders bring unique, value-adding skills to the firm. They have innovative ideas and set up first generation family firms. They need to possess the special technical or business backgrounds to start a business. The closed relationships minimize information asymmetries and generate trust vis-à-vis financial institutions [23]. On the other hand, descendants are more likely to detract from firm performance, perhaps because they obtain the CEO position through family ties rather than job qualifications. Schulze et al. [8] 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. The founder only disposes of a restricted pool of talent (consisting of possibly untalented relatives) in order to select his successor or to compose a management team [24]. The fractional ownership also reduces motivation of descendants, which increases the incentive to act opportunistically because they bear only part of the cost of such action [25]. This results in higher agency costs of debt due to the negative effect on loan repayment capacity of the descendant (non-founding) family firm.

This interpretation is consistent with the results in Gomez-Mejia et al. [5] suggesting that founder-managed firms are associated with strong performance and that non-founding family firms or descendants are more entrenched in their positions leading to a shareholder-debtholder agency problem.

Thus we hypothesize that descendant-managed family firms would avoid these unfavourable loan conditions by holding higher cash levels and avoiding the need for external debt. In our analysis, we will incorporate a ‘descendant-managed’ dummy variable with a value ‘1’ if the firm is inherited by the current family owner who manages the firm and a value ‘0’ if the firm is founder-owned. Founder-owned family firms consist of single owner-managed firms as well as family firms that are purchased or established by one or more of the current owners.

2.2. Traditional determinants of corporate cash holdings

The traditional determinants of corporate cash holdings can be subdivided into four categories which will be discussed in the next subsections. Table 1 provides a brief overview of the definitions of all variables included in the model.

2.2.1. Asymmetric information

Firms characterized by a high degree of information asymmetry between managers and investors about their value and future growth opportunities cope with high adverse selection costs when applying for external capital. Since the existence of asymmetric information between small private family firms and external financiers makes external financing difficult to obtain, firms having growth opportunities would hold larger amounts of cash to avoid giving up valuable investment opportunities [13]. Firms with high growth opportunities have a higher potential for risk shifting and underinvestment, making debt more expensive. However, maintaining sufficient cash reserves reduces the need to access the external capital markets. To proxy for growth opportunities, we could not use the book-to-market ratio since no information is available about their market value. Inspired by Garcia-Teruel and Martinez-Solano [17], we use sales growth measured by the ratio $\text{sales}_t/\text{sales}_{t-1}$.

Larger firms are also expected to cope with a lower degree of asymmetrical information [26]. In addition, they are less likely to

Table 1: Definition of the variables

<i>Variables</i>	<i>Definitions</i>
Dependent variable	
Cash/assets	Total amount of cash/total assets
Independent variables	
Single owner-managed	Equals 1 if 100% of the family firm is owned by a single founder-manager; 0 otherwise
Descendant-managed	Equals 1 if the firm has been managed and owned by a descendant; 0 otherwise
Growth opportunities	Total sales of current year divided by total sales of the previous year
Firm size	Natural logarithm of total assets
Leverage	Ratio of total debt outstanding divided by total assets
Non cash liquid assets	Working capital minus cash divided by total assets
DBscore_x	Equals 1 if the firm belongs to a Dun & Bradstreet credit rating x ; 0 otherwise x varies from 1 (lowest risk) till 5 (highest risk)
Relationship length	Natural logarithm of the relationship length in months with its main bank
Ln banks	Natural logarithm of 1 plus the number of banks the firm works with
One bank	Equals 1 if the firm works with one bank; 0 otherwise
Two banks	Equals 1 if the firm works with two banks; 0 otherwise
More banks	Equals 1 if the firm works with more than 2 banks; 0 otherwise
Herfindahl index	Equals 1 if the Herfindahl index exceeds 1800, 0 otherwise

experience financial distress and have more easy access to external finance due to a higher availability of collateral and lower adverse selection costs. Accordingly, we expect a negative relationship between cash holdings and firm size. To measure size, we use the natural logarithm of assets.

2.2.2. Liquidity constraints and substitutes for cash

Firms can use borrowing as a substitute for cash. However, Guney et al. [16] indicate that the relationship between leverage and cash holdings could be non-monotonic. The marginal effect of an increase in leverage on cash holdings may depend on the current level of leverage. At higher levels of leverage, it may become difficult to obtain additional bank loans. As these firms are more likely to experience financing constraints when applying for external debt, these firms may eventually hold higher cash reserves. Consequently, these firms would hold higher cash levels as a precautionary motive. So, the relationship between cash holdings and leverage is initially expected to be negative due to a substitution effect but eventually turns positive due to the precautionary effect. Thus, we estimate a quadratic model including leverage and the squared leverage.

Another substitution effect is due to other liquid assets firms may have besides cash. We would expect that firms with more non-cash liquid assets would reduce their cash levels [13]. The proxy we use is net working capital minus cash to total assets.

The probability of financial distress can also have an impact on corporate cash holdings. Kim et al. [27] expect that firms with a higher likelihood of financial distress have lower levels of liquidity due to difficulties to meet their payments. They can not afford to

hold cash. We measure the probability of distress by incorporating 5 dummy variables representing the Dun & Bradstreet credit rating score. ‘Rating 1’ represents the lowest risk firms while ‘rating 5’ represents the highest risk firms.

2.2.3. Relationship with financial institutions

The relationship lending literature suggests that agency problems and information asymmetries between banks and borrowing firms can be at least partially solved through close bank-borrower relationships increasing the availability of external financing [28]. A number of approaches have been used to examine the nature of these relationships, but the most common are relationship length and the number of bank relationships used.

In general, the results of previous studies suggest that the effects of establishing a bank-firm relationship on solving information problems are nonlinear. Overall, it seems that firms benefit from close lending relationship at early stages of the relationship. The capacities and the character of the entrepreneur become obvious as the relationship continues. As time expires, the entrepreneur builds up a good reputation and the moral hazard problem will diminish [29].

However, banks start to extract excessive rents once the relationship matures. Changing banks becomes difficult for the small firms since revealing its qualities in a credible way to another bank may take a lot of effort. Thus, the firm becomes ‘locked in’ in the relationship with the bank [30]. Consequently, we expect that if the relationship matures, family firms will hold higher cash reserves to avoid the extraction of excessive rents by banks. In order to control for possible non linear effects of relationship

Table 2 : Correlation matrix and descriptives

	1.	2.	3.	4.	5.	6.	7.	mean	median	st.dev.
1.cash/assets	1							0.228	0.107	0.280
2.assets (in 000)	-0.451 ^{***}	1						1,296	92	5,139
3. sales/sales t-1	0.024	-0.051 ^{***}	1					1.277	1.059	1.084
4. non cash liquid assets	-0.108 ^{**}	0.126 ^{***}	0.017	1				0.032	0.126	1.309
5. leverage	0.083 ^{***}	-0.143 ^{***}	0.022	-0.531 ^{***}	1			0.961	0.400	2.710
6.relationship length (months)	-0.027	0.099 ^{***}	-0.096 ^{***}	0.029	-0.046 ^{**}	1		100.6	60	99.74
7. number of banks	-0.213 ^{***}	0.480 ^{***}	-0.024	-0.003	0.087 ^{***}	-0.021	1	2.4	2	1.67

^{*}, ^{**}, ^{***} significant at the 10%, 5% and 1% level respectively (two-tailed test)

length, we include the relationship length as well as the squared term of relationship length.

A second relationship variable we include, is the number of banks the firm works with. We categorize this variable by including three dummy variables: 'one bank' that equals '1' if the family firm works with one bank; '0' otherwise; 'two banks' that equals '1' if the family firm works with two banks; '0' otherwise and 'more banks' that equals '1' if the family firm works with more than two banks; '0' otherwise. As a robustness check, we also use the natural logarithm of the number of banks the firm works with as an alternative measure.

Finally, the Herfindahl index can be categorized under this heading. The Herfindahl index is a measure of the bank deposit concentration. It is equal to the sum of squared market shares of bank deposits where the market shares are expressed as percentages. It is an indicator of the amount of competition among banks. If the index exceeds 1800, the US Department of Justice considers a market to be highly concentrated. In a highly concentrated market, relationships will be more profound due to a lower risk of bank shopping. This may increase the availability of external finance and lower cash holdings. As a proxy, we use a Herfindahl dummy variable with a value '1' if the Herfindahl index exceeds 1800; 0 otherwise.

2.2.4. Control variables

We also control for industry and organizational form. We include eight dummy variables to account for industry differences. Each dummy variable accounts for a range of 10 two digit Standard Industrial Classification (SIC) codes. We also include four dummy variables to capture possible differences due to liability differences between firms organized as proprietorships, partnerships, S corporations and C corporations (results not reported).

3. METHODOLOGY: DATABASE AND DESCRIPTIVES

Our analysis is based on the database of the 1998 U.S. '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) and is a represen-

tative sample of non-farm, non-financial SME's in the US economy. Private family firms are defined in this database as firms which are not quoted on the stock exchange with more than 50% of the firm owned by a single family. The NSSBF database provides us with the necessary information on the family firm, financial, relationship and generational characteristics. After the removal of outliers and missing values, we ended up with a final sample of 2,600 private family firms.

Table 2 presents the descriptive statistics as well as the correlation matrix for the main variables of our analysis. It reveals that the average family firm has a cash to assets ratio of 22.8% while the median cash to assets ratio is 10.7%. The average family firm of our sample has 1,296,000\$ asset base, has a relationship of 100 months with its main bank and works with 2.4 banks. There do not appear to be any multicollinearity problems.

4. REGRESSION RESULTS

In table 3, the results for our robust ordinary least squares regressions are presented by focussing on the question whether cash holdings in small private family firms are determined by the same factors found in other studies based on non-family firms. Moreover, we contribute to the current literature by looking at the effect of generational evolution on cash holdings. In each of the regressions, we also control for organisational form and industry (results not reported).

As expected, table 3 shows that *single owner-managed* family firms have lower corporate cash holdings than family firms that diverge from the single owner-manager case. Put differently, family firms diverging from the single owner-managed firm hold higher cash levels which originates in higher shareholder-manager agency costs e.g. free riding of family insiders on the controlling owner's equity. If control and management are (partially) separated, family insiders seem to increase cash holdings to be able to use them to benefit their own nuclear family or invest in pet projects that are not necessary the first best choice.

Moreover, results reveal that *descendant-managed family firms* have higher cash holdings compared to family firms that have not been inherited but established or purchased by the current owners which are first generation family firms. This finding is in line with Anderson et al. [22] who show in their empirical study that the involvement of a founding family would result in better borrowing terms of the firm. Founders bring unique, value-adding skills to the

Table 3: Robust OLS regression on the determinants of cash holdings (n=2,600)

Dep. variable: cash/assets	(1)	(2)	(3)	(4)
<i>Generational evolution</i>				
Single owner-managed	-0.0278 (0.011)**	-0.0221 (0.011)**	-0.0276 (0.011)**	-0.0219 (0.011)*
Descendant-managed		0.0558 (0.021)***		0.0556 (0.021)***
<i>Information asymmetry</i>				
Growth opportunities	0.0009 (0.004)	0.0004(0.005)	0.0011 (0.004)	0.0006 (0.004)
Firm size	-0.0619 (0.003)***	-0.0622 (0.003)***	-0.0625 (0.003)***	-0.0628 (0.003)***
<i>Liquidity constraints & substitutes</i>				
Leverage	-0.0112 (0.005)**	-0.0112 (0.005)**	-0.0116 (0.006)**	-0.0117 (0.005)**
Leverage ²	0.0004 (0.001)*	0.0004 (0.0002)*	0.0004 (0.0002)*	0.0003 (0.0002)*
Non cash liquid assets	-0.0129 (0.004)***	-0.0130 (0.005)***	-0.0130 (0.005)***	-0.0131 (0.004)***
DBscore_1 ^a	0.1296 (0.022)***	0.1248 (0.022)***	0.1302 (0.022)***	0.1253 (0.022)***
DBscore_2	0.0816 (0.017)***	0.0815 (0.017)***	0.0820 (0.016)***	0.0819 (0.016)***
DBscore_3	0.0546 (0.016)***	0.0549 (0.017)***	0.0553 (0.017)***	0.0556 (0.017)***
DBscore_4	0.0394 (0.0175)**	0.0391 (0.017)**	0.0398 (0.018)**	0.0395 (0.017)**
<i>Relationship with financial institutions</i>				
Relationship length	-0.0592 (0.028)**	-0.0585 (0.027)**	-0.0590 (0.028)**	-0.0582 (0.027)**
Relationship length ²	0.0080 (0.003)**	0.0079 (0.003)**	0.0080 (0.003)**	0.0079 (0.003)**
One bank ^b	0.0049 (0.013)	0.0053 (0.013)		
Two banks ^b	-0.0072 (0.011)	-0.0071 (0.011)		
Ln (banks)			0.0014 (0.009)	0.0011 (0.009)
Herfindahl index	-0.0049 (0.009)	-0.0052 (0.010)	-0.0049 (0.010)	-0.0051 (0.010)
R ²	0.2429	0.2446	0.2426	0.2443
F value	24.92***	24.14***	25.67***	24.83***

^a DBscore_5 (highest risk firms) as comparison category; ^b 'More banks' (equals 1 if the firm works with more than two banks) as comparison category; *, **, *** significant at the 10%, 5% and 1% level respectively (two-tailed test). Robust asymptotic standard errors reported in parentheses.

firm, while descendants are more likely to detract from firm performance, perhaps because they obtain the CEO position through family ties rather than job qualifications. So, results seem to confirm that the fractional ownership reduces motivation of descendants, which increases the incentive to act opportunistically because they bear only part of the cost of such action [25]. This may negatively affect the loan repayment capacity of the descendant inducing higher agency costs of debt. So, founding family firms hold lower cash levels due to lower agency costs of debt and consequently, the willingness of banks to provide loans at favourable borrowing terms.

We expected that family firms characterized by higher *informational asymmetries* would hold more cash possibly due to external finance constraints. Even though previous empirical studies based on SME's or large firms do not find any significant effect for firm size, our results do reveal a significant negative effect for firm size: smaller private family firms seem to hold higher cash levels to avoid finance constraints. This result is in line with a previous study by Steijvers and Voordeckers [11] indicating that private family firms, compared to non family firms, more often have to pledge personal collateral to obtain bank loans. If the family firm owners are unwilling to put their personal assets at stake, they have to look for other financing sources or rely on higher cash holdings. Contrary to the study by Garcia-Teruel and Martinez-Solano [17] based on SME's as well as several studies concentrating on large firms [27,13], growth opportunities do not appear to have a significant effect on cash holdings of private family firms.

With regard to the effect of *substitutes* for cash holdings, we find a significant substitution effect (at 1% significance level) for

non cash liquid assets defined as working capital minus cash which is in line with Garcia-Teruel and Martinez-Solano [17]. Firms with more liquid assets tend to reduce their cash levels since these assets can be used as cash substitutes. As expected, the variable 'leverage' seems to have a non-linear impact on cash holdings. We first observe a negative relationship at lower levels of leverage and the observed relation becomes significantly positive at high leverage levels. So, leverage first acts as a substitute. However, an increased leverage decreases the availability of additional debt finance which is translated in a positive relationship between leverage and cash holdings at high levels of leverage.

In line with Kim et al. [27], firms with higher likelihood of financial distress have lower levels of cash holdings due to difficulties to meet their payments. Family firms with a Dun & Bradstreet rating of 1 to 4 have higher cash holdings compared to family firms with a high risk credit rating i.e. Dun & Bradstreet rating 5.

As predicted, establishing a *relationship* with a financial institution initially has a negative impact on cash holdings. The family firm benefits from this close relationship by reducing information asymmetries between firm and bank. Thus, obtaining bank debt becomes more easy and the need to hold cash is reduced. This result is in line with Garcia-Teruel and Martinez-Solano [17], Ozkan and Ozkan [13] and Ferreira and Vilela [31]. However, the relationship between cash holdings and the relationship length appears to be non linear. When the bank-family firm relationship has matured, an increase in the relationship length seems to increase the amount of cash family firms hold. It seems that the family firm becomes 'locked in' in the relationship with the bank: the bank uses its market power in a negative way inducing ex post

rent extraction. Family firms that want to avoid this rent extraction have to find another bank that is willing to lend. However, changing banks becomes difficult because the small private family firm has to signal its qualities in a credible way. Consequently, these family firms appear to be obliged to hold higher cash levels to avoid these problems of rent extraction or finding another bank that is willing to lend. The number of banks the family firm works with or the Herfindahl index do not appear to have a significant impact on cash holdings.

5. CONCLUSIONS

Although the empirical literature on the determinants of corporate cash holdings has received a lot of attention recently, any of the prior studies provides empirical evidence on the determinants of cash holdings in the context of small private family firms. However, given the existence of market imperfections, the desire to keep control by avoiding external equity financing [12] and higher agency costs of debt [9, 10, 11], cash holdings seem to be indispensable for small private family firms.

Empirically, Ozkan and Ozkan [13] confirm that family firms hold higher cash levels. However, we argue that private family firms can not be considered as a homogeneous entity [14]. Family firm behaviour may change throughout time giving rise to shareholder-manager agency costs and shareholder-debtholder agency costs [20]. The existence of agency costs is expected to have an effect on the firm's cash holdings. Results confirm that the shareholder-manager agency problem, only prevalent in non-single owner-managed family firms, results in higher cash holdings. Free cash flows may allow discretionary behaviour by the management at the expense of the non-family or non managing family shareholders [21]. Private family firms managed by one owner who has 100% of the shares have lower corporate cash holdings.

Besides a shareholder-manager agency problem, Jensen and Meckling [20] also discuss a second agency problem, the shareholder-debtholder agency conflict. The debate about this second agency problem is still in its infancy. We argue that this shareholder-debtholder agency problem may also affect the cash holdings level of private family firms. Distinguishing between descendant-managed family firms and founder-owned family firms, our results suggest that descendant-managed family firms have higher cash holdings compared to founder-owned firms. As indicated by Anderson et al. [22], founders would bring unique value-adding skills to the firm. The closed relationships generate trust vis-à-vis financial institutions [23] and lower agency costs of debt. Descendant-managed firms seem to cope with higher agency costs of debt due to the fact that the founder only disposed of a restricted pool of talent in order to select his successor inducing adverse selection costs. Moreover, the fractional ownership seems to reduce the motivation of descendants and increases the incentive to act opportunistically because they bear only part of the costs of such action. The potentially limited capacity of the descendant and his motive to behave opportunistically negatively affect the firm's ability to repay any loans from financial institutions. It increases the agency costs of debt resulting in unfavourable loan conditions and consequently, the need to hold higher cash levels.

This study has some limitations that provide challenges for future research. The NSSBF 1998 is a large database, representative for the US economy, giving us sufficient power to detect small effects. However, the survey data are cross-sectional

which limits our potential to draw causal inferences. Future research should benefit from using longitudinal data.

Our results contribute to a better understanding of the determinants of cash holdings in private family firms. While our study distinguishes between single owner-managed family firms and non-single owner-managed firms on the one hand and founder-managed firm and descendant-managed firms on the other hand, further research is needed to go further into detail on the effects of ownership dispersion over the generational stages. For example, Villalonga and Amit [32] point out that whether certain family firms experience higher or lower agency costs may depend on how exactly ownership is combined with family control and management.

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