

A FAMILY AFFAIR

THE RELATIONSHIP BETWEEN FAMILY CONTROL AND PERFORMANCE IN SWEDISH PUBLIC FIRMS

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A family affair: Examining the Relationship Between Family Control and Performance in Swedish Public Firms

Abstract:

This study examines the influence of family control on market and operational performance among the largest listed companies on Nasdaq Stockholm. Our results reveal that family control has a positive effect on market performance, but not on operational performance. We also find that unaffiliated block holders positively contribute to family firms' operational performance, while family management does not impact firm performance. Contrary to agency theory, family firms with higher agency problems do not exhibit worse performance compared to those with lower agency problems. However, our study finds that the positive impact of family control on market performance is offset when families employ dual share class systems, and their vote holding exceeds their share ownership by more than 25 percentage points.

Keywords:

Family firms, Tobin's Q, Control, Agency costs

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1. Introduction

The primary aim of this study is to investigate the effect of family control on the performance of public firms, by examining the relationship between family vote holding, Tobin's Q, and Return on Assets (ROA). The increasing presence of family firms in popular culture, such as the TV show *Succession* and SVD's podcast series on the Stenbeck family, highlights the interest in these types of firms. In this thesis, we aim to contribute to the understanding of how this special form of control affects firm performance, something which provides important implications for policy makers, investors, and owner families.

Family firms represent a significant portion of all companies worldwide, encompassing both private and public markets, and therefore have a considerable impact on the global economy. According to studies by Anderson and Reeb (2003) and Faccio and Lang (2002), family-owned businesses make up one third of the S&P 500 companies and c. 44% of Western European medium- and small-sized companies. In Sweden, where several prominent families, including the Wallenberg, Stenbeck, and Lundberg families, have played a crucial role in the corporate landscape, family firms constitute 46.49% of both private and public companies (Faccio and Lang, 2002). Despite their importance for the economy and business, there is limited research on family firms in Sweden, something we aim to address in this study.

There exists an extensive set of literature examining family firms and their impact on various aspects of business; however, results remain inconclusive with regards to the benefits or drawbacks of family ownership for non-family shareholders. Some studies have shown that family firms outperform non-family firms in terms of measures such as Tobin's Q and ROA, indicating that family ownership may provide certain advantages (Anderson and Reeb, 2003). However, other studies point to the fact that family firms may be more prone to agency costs and risk aversion, which can negatively impact the performance of the firm (Villalonga and Amit, 2006, Sekerci, 2020). Research conducted on the Swedish stock exchange support the prevalence of agency costs in family firms, where the authors find that family vote holding is associated with a negative effect on Tobin's Q, both for founding-family firms and non-founding family firms (Cronqvist and Nilsson, 2003). However, agency theory suggests that the integration of management and ownership can mitigate such costs, and Villalonga and Amit (2006) showed that family firms outperform its non-family counterparts when the family founder serves as CEO or as chairman with an external CEO.

Our dataset comprises listed Swedish companies with a market capitalization of at least 2,000 SEKm as of December 2015. We collect market and accounting data as well as ownership and vote holding information for each firm throughout the fiscal years 2015-2021. For the companies we classify as family firms, we also include data on governance and management structure. We perform a univariate and multivariate OLS regression with clustered standard errors on Tobin's Q, industry adjusted q and ROA for all companies. In section 3.3 we test for the implications of agency problems on family firms, and more specifically test for the interaction between family vote holding, control enhancing mechanisms and family management on family firm's Tobin's Q.

Our results show that companies controlled by families have a 12% higher Tobin's Q than their non-family counterparts, but that operational performance does not significantly differ between the firm types. We also separate between different types of family firms and find no difference in performance between founding-family firms and firms controlled by a family other than the founding-family. Similarly, we find no statistical difference between firms indirectly held by a family-controlled investment company and directly controlled family firms. Furthermore, in contrast to previous studies, we find no effect on firm performance from having a family CEO or chairman.

We find that control enhancing mechanisms, i.e., dual share classes, in form of excess vote holdings have a negative impact on market performance for both family and non-family firms. Specifically, a significant negative impact on market performance is observed when the voting stake of the largest vote holder exceeds the cashflow rights of the same shares by 25 percentage points or more, offsetting all positive contribution from family control on Tobin's Q.

We also find that unaffiliated block holders, i.e., shareholders other than the family vote holder controlling a minimum of 5% of the outstanding votes, have a positive effect on operational performance but not on market performance for family firms. This could be explained by the presence of other strong shareholders having a valuable monitoring effect that hinders value-destructive firm decisions.

In addition to investigating the impact of family control on firm performance, this study expands on how vote holding, family management and certain control enhancing mechanisms are related to agency problems and how, and when, these factors affect family firm performance, in line with Villalonga and Amit (2006). Our results show that family firms with large exposure to agency problems do not perform worse than firms with less agency problems. However, we find that the problem related to the separation of owners and managers is costlier than the one related to the conflict of interests between large shareholders and small shareholders.

To some extent our results are robust to the use of alternative econometric techniques, which we display in section 4. The family coefficient is positive and significant when using OLS univariate time-series averages and when using random effects as an alternative technique for the panel data in our study.

In aggregate, the results show that family control has a positive effect on market performance, but limited effect on operational firm performance. These results are relatively unaffected by family management or governance, which contrasts with previous studies and theories on active ownership. However, our findings suggest that the family premium is not totally unrelated to control structures as the family control premium is offset by control enhancing mechanisms in form of dual share-classes when these are large enough. We also find that unaffiliated block holders contribute to the operational performance of the firm, but do not contribute to shareholder value.

The subsequent sections of the paper are organized as follows. Section 1 provides a comprehensive review of the relevant literature concerning the comparative performance of family and non-family firms, as well as the influence of agency issues on the performance of family firms. Section 2 outlines the data, sample, and terminology used in this study. Section 3 presents the findings of our research. In Section 4, we conduct various sensitivity analyses to verify the robustness of our results. Finally, in Section 5, we draw conclusions based on our research outcomes.

1.2 Benefits of family control and ownership

There is a growing body of literature suggesting that family-owned firms tend to perform better compared to their non-family counterparts. Anderson and Reeb (2003) conducted a study on publicly traded founding-family firms included in the S&P 500 and found that these firms have higher firm valuations and perform better in terms of operational performance measured in ROA. Villalonga and Amit (2006) expand the study to incorporate the separation of ownership and control (vote holding) and find similar results, arguing that minority shareholders benefit from the ownership of a family under certain management structures.

There are several explanations to why family-owned firms may outperform their non-family counterparts. One is that family ownership is an effective mechanism to alleviate agency problems, where the incentives of managers and owners are aligned, as families tend to take on roles in the management and governance of the firm. Agency theory suggests that the separation between ownership and control in companies can lead to conflicts of interests between owners and managers, supported by prior research, showing that firm performance improves as shareholders' and managements' incentives become more aligned as firms run by founder-CEOs have higher market valuations (Morck, Randall, Schleifer and Vischny, 1998). Another explanation is that family members tend to have a strong interest in the long-term success of the firm and are more likely to monitor and control management, reducing managerial myopia and short-termism (Poutziouris, Savva and Hadjielias, 2015, Anderson and Reeb, 2003).

1.3 The drawbacks of family control and ownership

Despite the perceived advantages of family ownership, there is evidence to suggest that family firms may be less efficient and perform worse than their non-family counterparts, ultimately leading to value destruction for other shareholders. Miller, Le Breton-Miller, Lester and Cannella (2007) found that family firms where non-founding family members are owners or managers did not outperform in market valuations, whereas businesses where lone founders held CEO and/or Chairman positions with share ownership performed better. The authors attribute this finding to the potential governance challenges faced by businesses with multiple family members involved.

Agency problems, where smaller shareholders bear the cost of major shareholders' value destructive decisions, may also explain the negative relationship between family ownership and firm performance. Poutziouris et al. (2015) found that Tobin's Q is 2.94% lower for family firms, suggesting that this can be explained by institutional investor having interests not in line with those of family members, and that the long-term strategic horizon of family firms' conflict with the short-term interests of other shareholders. Furthermore, in one of the few studies on family control conducted on the Swedish stock market, results show that family vote control is negatively correlated with Tobin's Q, both in the case for founding and non-founding family firms (Cronqvist and Nilsson, 2003). The authors suggest that this is a result of family firms being more prone to agency costs. We test for different agency problems, including the problem related to conflict of interest between small and large shareholders, that may occur in family firms in section 3.3.

Further research has explored the relationship between the level of family ownership and firm performance. Poutziouris et al. (2015) found that Tobin's Q increases as family ownership decreases, indicating a nonlinearity in ownership levels and firm performance, that is, even though family ownership mitigate owner-manager agency problems, high levels of ownership may lead to increased family opportunism which can hinder performance. In contrast, Gharbi and Othmani (2022) found that families are more motivated to engage in performance-enhancing activities when they hold a large stake in the company. Their study suggests that when families own less than a 37.5% stake, there is less incentive to bear the costs of effective monitoring. In this study, we instead wish to examine the influence of family control measured as the share of votes the family holds in the firm. In our sensitivities section, we change our initial definition of family firm (15% vote holding or above) to consider potential nonlinearities in firm performance and different levels of control. We find that when the family's vote stake exceeds 20% of the outstanding votes, the results become insignificant but still demonstrates a positive coefficient for the family dummy.

1.4 Active ownership and agency theory

Family involvement and active ownership have been extensively studied in the context of family firms, and the management structure of the firm has been found to be a key factor affecting firm performance. Andersson and Reeb (2003) suggests that family firms perform better when a family member serves as CEO, compared to when an external CEO is in place. Villalonga and Amit (2006) argue that family management only adds value if the founding family member serves as CEO or chairman, while a descendant serving in these roles can be value destructive. This highlights the potential negative effects of entrenched family control on firm performance over successive generations, which can be avoided by delegating control to professional managers as suggested by Morck and Randall K. (2000). One possible explanatory factor for the negative effects of descendant CEOs or directors is that descendants may be less qualified for their jobs than external managers. In our sample, 4% of the family firm-year observations have a descendent CEO and hence, we are unable to test how management over successive generations affect firm performance. We instead introduce a dummy for if there is a family CEO and/or a family chairman (CoB) in place, which is true for 47% of the family firm sample. Contrary to previous research, we find limited proof that family management would add or destroy firm value nor improve the operational performance of the firm. Other studies have found that high levels of family involvement in the governance of the firm leads to higher long-term performance even across generations (Poutziouris et al., 2015). We test for this by collecting data on the share of family representation on the board of directors but find that family governance has limited to none impact on market or operational performance.

A different type of agency problem that may arise in firms is the one between large and small shareholders, where large owners use their control to extract benefits at the expense of other shareholders. In line with Villalonga and Amit (2006), we use the difference between the largest vote holder's vote control and share ownership as proxy for the largest shareholder's ability to extract private benefits. Excess vote holdings are possible because of dual share classes, where certain shares inhibit more votes than their cashflow rights and contrasts with the one-vote one-share structures. Recently, the Institutional Shareholder Services (ISS) gave a proposal in their updated Proxy Voting Guidelines to recommend

voting against directors that benefit from unequal vote structures, with the motivation that equal treatment of shareholders is a key tenet of good governance. According to the Swedish Companies Act, the voting right tied to a share is not allowed to exceed the voting right of another type of share with more than 10 times. Despite the perceived negative effects of this system, as highlighted by ISS's recommendation, previous research conducted on the Swedish stock market has shown that dual share classes do not destroy value for other shareholders (Cronqvist and Nilsson, 2003).

Villalonga and Amit (2006) examines how family ownership, control, and management interact with one another in their effects on firm value and test for the interaction between the two types of agency problems described above; (1) the separation of owners and managers and (2) the divergent interest between small and large (family) shareholders. They find that family firms with no exposure to any of the problems exhibit the highest Tobin's Q as well as that the problem related to the separation of owners and managers is the costliest for shareholders. We perform a similar test in section 3.3, where we instead of testing for the family's ownership stake use the family's vote holding stake.

1.5 Research gap

Despite the abundance of literature exploring the correlation between firm performance and various forms of ownership structure, there remains a dearth of insights into how family firms perform in comparison to non-family firms in the Swedish context, with only limited research as of today. Given that most of the prior research were conducted 20 years ago and given the significant presence of listed family firms in Sweden, this area of inquiry holds considerable relevance for the study of organizational performance. Furthermore, understanding the influence of families on businesses is of interest to several types of stakeholders, including retail shareholders, institutional investors, employees, and various policy makers.

In addition to comparing family to non-family firms, we compare directly controlled family firms to indirectly controlled family firms. Given the considerable presence of listed firms controlled by family investment companies on Nasdaq Stockholm, we believe this separation is of high relevance and which to our knowledge, have not been done in previous literature in the Swedish setting. Prior research has examined the application of agency theory in the context of family firms, primarily by examining the impact of active ownership and control enhancing mechanisms on value creation. We seek to expand upon this existing body of research by analyzing what mechanisms that create or destroy value in family firms in the Swedish setting. By distinguishing between different types of family firms, this study aims to shed light on the conditions under which family control is beneficial or detrimental for firm performance, and to identify the mechanisms through which family control affects firm outcomes.

2. Methodology and sample

In this study, we utilize a panel dataset consisting of companies, incorporated or founded in Sweden, listed on Nasdaq Stockholm. Our sample includes all firms with a market capitalization of 2,000 SEK or above as of the last date of calendar year 2015. After

excluding banks and public utility companies, our panel data set comprises 136 unique firms, of which all are displayed in Table 24. The panel data allows us to observe the same firms over multiple years, thereby capturing changes in control structures, board, and management composition, as well as operational and market performance.

We collect data on market capitalization, profit and loss accounts, balance sheet items, ownership and voting control for all firms in our sample throughout the period of 2015 to 2021. We collect information on board structure, management composition, and unaffiliated block holdings for each company defined as a family firm in our sample. We manually collect information on board structure and management composition by reviewing annual reports for all years in the period. Our financial data is sourced from S&P Capital IQ, while ownership, vote holding stake, and unaffiliated block holders data is from Modular Finance Holdings.

Overall, our use of a panel dataset with rich information on ownership, control, governance, and financial performance allows us to examine the performance differences between family and non-family firms in the Swedish context and to identify the mechanisms through which family control affects firm outcomes.

2.1 Sample

In line with Anderson and Reeb (2003), we exclude banks and public utilities from our sample. This is due to the difficulty in calculating Tobin's Q for banks and because of that regulations and public policies can have a large impact on firm performance for public utility companies. We later include banks to our regressions, displayed in Table 15. As we only have one utility company in our sample, we exclude this one from all regressions because of difficulties in constructing industry dummies. After correcting for banks and the public utility firm our sample consists of 136 unique companies and 914 observations, of which 61% are included as family firms.

We introduce several control variables on firm characteristics, as well as dummies to differentiate between types of ownership structures. Descriptions of all used variables are displayed in Table 1.

Table 1. Description of variables used in analysis and source for data collection.

Variable	Description
Family firm	Firms where a family controls over 15% of the votes and is the largest vote holder. In table 11 alternative definitions are considered. Source: Holdings
Founding family	Firms where the founding family controls over 15% of the votes and is the largest vote holder
Family IC controlled	Firms that are controlled indirectly by a family through an investment company holding over 15% of the votes and is the largest vote holder
Family CEO/Chairman of the Board (CoB)	Dummy denoting if a member from the controlling family is CEO or Chairman of the Board
% of outside board members (less family)	Ratio of non-family members on the board to the total number of board members. Source: Annual reports
Family ownership stake	Percentage of all outstanding shares owned by the controlling family. Source: Holdings
Family voting stake	Percentage of all outstanding voting rights held by the controlling family. Source: Holdings
Largest ownership stake	Percentage of all outstanding shares owned by the largest shareholder. Source: Holdings
Largest voting stake	Percentage of all outstanding voting rights held by the largest shareholder. Source: Holdings
Unaffiliated blockholdings (Family firm)	Percentage of all outstanding voting rights held by unaffiliated blockholders in the family firms (independent entities holding five percent or more of the firm's voting rights). Source: Holdings
Excess vote holdings	Difference between the percentage of all votes outstanding held by the largest shareholder and the percentage of all shares outstanding owned by the largest shareholder. Source: Holdings
Excess vote holdings	Difference between the percentage of all votes outstanding held by the largest shareholder and the percentage of all shares outstanding owned by the largest shareholder. Source: Holdings
Control enhancing mechanism	Dummy indicating whether the largest shareholder holds a voting stake exceeding the share ownership stake. In table 7 and 8 alternative definitions are considered. Source: Holdings

Table 1. Continued.*Financial variables*

Tobin's Q	Ratio of the company's market value of equity and total book value of liabilities to total book value of equity and liabilities. Source: Capital IQ
Industry adjusted q	Difference between the company's Tobin's Q and the industry median Tobin's Q. Used to control for industry characteristics. Industry medians are calculated on two-digit GICS codes. Source: Capital IQ
Return on Assets (ROA)	Net income divided by total assets. Source: Capital IQ
Return on Equity (ROE)	Net income divided by total equity. Source: Capital IQ
Leverage (Debt/Assets)	Ratio between non-current liabilities and total assets. Source: Capital IQ
Cashflows from investment activities / LT assets (Development opportunities)	Ratio between cashflow from investment activities and long-term assets. Used to measure growth opportunities. Source: Capital IQ
Price volatility	1 year stock price change. Used to estimate firm risk. Source: Capital IQ
Sales growth	Year on year increase / (decrease) in total sales. Source: Capital IQ
Ln(Total Assets)	The logarithm of total book value of assets. Source: Capital IQ
Ln(Firm age)	The logarithm of number of years since inception. Source: Capital IQ
Ln(Sales)	The logarithm of reported sales. Source: Capital IQ
Ln(Marketcap.)	The logarithm of market capitalization at end of year. Source: Capital IQ

2.2 Definition of family firms and control

The literature on family ownership and performance differs in the definition of a family firm. Anderson and Reeb (2003) classifies a firm as a family firm when the founding family is present in the firm either through owning a fraction of the shares and/or exercising control through being on the board. In this definition, there is no condition on what fraction of equity or votes that needs to be controlled by the family. Poutzioris et al (2015) use a similar approach but introduces an ownership threshold of 10%. In these studies, the researchers only include firms where the founder is still present, either through the founder self or through later generations. In line with Faccio and Lang (2002), we take a wider approach and include firms where a family, other than the founder, exercise control over the company through vote holdings. In the Swedish context with several family-controlled

investment companies controlling a considerable share of publicly listed companies, we argue that it is plausible to also consider these as family controlled. Specifically, we differentiate all family firms between firms that are still controlled by their founder family, and we also use a narrower definition, “family IC controlled”, in those cases the company is owned by a family-controlled investment company.

Miller et al. (2007) found that results are highly dependent on how researchers define family firms, suggesting that previous literature on family firms and performance has suffered from the lack of a clear and consistent definition of family firms. For the purpose of this study, we classify a firm as a family firm if a family controls at least 15% of the outstanding voting rights and is the largest vote holder. This definition is based on the approach of Faccio and Lang (2002), who also used the largest vote holder as a criterion but set a higher threshold of 20% for the family's control of the voting rights. We favor the use of vote holding as a criterion for inclusion, as it provides a more accurate measure of the level of influence a shareholder can have over the strategic direction and decision-making of the firm, compared to share ownership. Notably, our sample indicates that 72% of the family firms have a vote holding that exceeds the family's share ownership, lending support to this methodology.

In those cases where a family is not represented by a single shareholder, we aggregate all votes and shares held by family members. We define a family member as anyone related by blood or marriage to the family, as in the definition used by Villalonga and Amit (2006). We analyze public filings and other publicly available data to determine who qualifies as a family member.

In some instances, there may be multiple owner families. An example of this is Bettson AB, where the Hamberg family and the Knutsson family are the two largest shareholders. In such cases, we only include the family with the largest voting stake, if it equals or exceeds 15% of all outstanding votes. Similarly, if there are two or more founding families, we only include the largest family in terms of votes.

2.2.1 Investment companies and foundations

In the case where a company's largest vote holder is a family-controlled investment company, we take a similar approach to Barontini and Caprio (2006) and define family control through taking the whole chain of control into account. The family's vote holding in the investment company is multiplied with the investment company's vote holding in the publicly listed firm. If the vote stake equals or exceeds the threshold of 15%, we consider the firms as family firms and “family IC controlled”. An example of this is Atlas Copco AB who has Investor as its largest vote holder. The Wallenberg family's vote holding in Investor is 50% and Investor's vote holding in Atlas Copco AB is 22%, translating to an indirect vote stake of 11% and hence, we do not consider it as a family firm. In Assa Abloy AB, the investment company Latour was the largest vote holder as of 2015. Since the Douglas family control 79% of the votes in Latour and Latour controls 29% of the votes in Assa Abloy AB, the Douglas family has an indirect control of 23% and Assa Abloy is therefore treated as a family firm. If an investment company is privately held, information about the ownership structure have been manually collected from the investment companies' websites and from publicly available information. In our sample we have a total of eight privately held investment companies and six public that are considered to have

family control over firms. In Table 4 we use a dummy variable to differentiate between direct family control and family control through an investment company. In doing this we control for potential differences between the two different types of family control.

Investment companies are required according to Swedish law to report earnings and their balance sheets in a different way compared to other companies. This is because investment companies have a portfolio of investments that needs to be valued at fair value, which can be more complex than valuing other types of assets. Additionally, investment companies may have income from dividends, interest, and capital gains, which may be reported differently than revenue from operating activities. To account for this, we include a regression in Table 16 in appendix where we exclude the public investment companies that are part of our sample.

In the case of foundations, shares of the family firm are irrevocably donated to the foundation for the purpose of the board to fulfill its goals, which typically involves the development of the family business and other non-profit philanthropic goals (Henrekson, Johansson et al. 2020). For example, the Wallenberg family foundation, *Knut och Alice Wallenbergs stiftelse*, controls approximately 43% of the votes in the family-founded investment company Investor and has the outspoken purpose to promote scientific research and education in Sweden (Knut och Alice Wallenbergs stiftelse, 2023). This highlights that families can have additional interests in their firms than pure financial ones, speaking to the conflict between small and large (family) shareholders. Furthermore, donating the shares of a family firm to a foundation can enable the family to stay in control for a longer time, which could potentially be harmful for other shareholders when this is not maximizing shareholder value. We treat foundation's ownership in companies as direct family control, for example, Investor is treated as a directly controlled family firm.

2.3.1 Tobin's Q

We use the measure Tobin's Q for analyzing market performance of the companies in our sample, like several prior studies on family firm performance (Villalonga and Amit 2006, Andersson and Reeb 2003, Cronqvist and Nilsson 2003). Tobin's Q was popularized by James Tobin in 1970 and is calculated by dividing the market value of the firm's equity and liabilities with the total replacement costs of a firm's total assets. Due to the complexities associated with calculating the market value of liabilities and the replacement costs of assets, we choose to use a simplified version defined by Chung and Pruitt (1994). They simplify the calculation of Tobin's Q by adding the market value of the firm's equity to the book value of liabilities and dividing by the total book value of assets. We calculate this variable for each firm in our sample for the years 2015-2021, using the market value as of the last date of each calendar year.

$$Tobin's\ Q = \frac{(Equity\ market\ value + Liabilities\ book\ value)}{(Total\ assets)}$$

Industry adjusted q is calculated in line with Miller et al (2007), where the industry median, based on two-digit GICS codes, is subtracted from the firm's Tobin's Q. By running the regression on industry adjusted q, we control for industry specific characteristics that has the potential to skew our results, limiting the potential impact of industries with typically high Tobin's Qs being overrepresented in the family or non-family sample.

2.3.2 Return on Assets

In addition to market performance, we aim to study families' influence on operational, or accounting, performance. We choose to use the accounting measure Return on Assets (ROA) for this exercise, similarly to previous research (Andersson and Reeb, 2003, Villalonga and Amit, 2006). Some benefit of this measure is its independence of firm size, making it comparable, and that it shows how effectively a company can use its asset base to generate profit. By analyzing both market and operational performance, we shed light both on how effective family firms are in their operations and how the market perceives their effectiveness.

3. Results

3.1 Univariate regression

We perform a univariate regression to test if there is a significant difference between the variables for family firms and non-family firms. Table 2 shows means for family and non-family firms for each variable used in the analysis.

Table 2. Difference in mean test between family and non-family firms.

Family firms represent 61 percent of our sample. The means are derived from 914 firm-year observations and include 136 companies listed on Nasdaq Stockholm. All financial variables (Table 1) are winsorized at the 5th and 95th percentile. T-statistics are based on OLS regression for each variable on the family dummy, and serial correlation (within clusters) is correct through using clustered sandwich estimator (clustering by firm). Numbers in square brackets ([]) is the number of observations of each firm type. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variable	Family	Non-family	Diff in means	t-stats
	Mean	Mean		
Tobin's Q	1.66	1.43	0.25	2.16 *
Industry adj. Tobin's Q	0.26	-0.06	0.31	3.11 **
ROA	0.09	0.06	0.02	3.32 ***
Family ownership stake	0.26	n.a.	n.a.	13.28 ***
Family voting stake	0.38	n.a.	n.a.	16.37 ***
Unaffiliated blockholdings (family)	0.14	n.a.	n.a.	10.07 ***
Family CEO/CoB	0.47	n.a.	n.a.	9.38 ***
% of outside board members (less family)	0.85	1.00	-0.15	-13.54 ***
Largest ownership stake	0.26	0.15	0.11	4.88 ***
Largest voting stake	0.38	0.19	0.20	6.92 ***
Excess vote holdings	0.12	0.04	0.09	3.96 ***
Control enhancing mechanism	0.72	0.31	0.45	5.38 ***
ROE	0.19	0.16	0.03	2.31 *
Leverage	0.25	0.28	-0.04	-1.41
Cash flows from investment activities / LT assets	0.10	0.10	0.01	0.36
Price volatility	30.41	32.98	-2.15	-2.22 *
Sales growth	0.09	0.07	0.02	2.27 *
Ln(firm age)	3.93	4.06	-0.16	-0.94
Ln(sales)	8.68	9.41	-0.82	-2.60 **
Ln(total assets)	9.39	9.92	-0.58	-1.91 .
Ln(marketcap.)	9.66	9.89	-0.27	-0.98
Number of observations	[557]	[357]		

The results from the difference of mean test shows that the mean of Tobin's Q for family firms is 0.25 higher and significant at 5%, when applying clustered standard errors on firm level. When industry effects are considered, using industry adjusted q, the difference in means between family and non-family firms is even larger, 0.32 higher for family firms and significant at 1%. These market performance measures indicate that family firms are outperforming non-family firms, which is in line with previous findings (Andersson and Reeb, 2003, Villalonga and Amit, 2006). Furthermore, family firms have a slightly higher ROA than non-family firms, although this difference is not significant.

Examining the size variables, we observe that family firms are on average smaller than non-family firms, using total assets and sales as proxies for firm size. Moreover, family firms experience significantly higher sales growth than non-family firms, which is consistent with that the family firm observations are on average younger.

On average family firms hold 26% of the equity ownership stake, which is significantly higher than the largest owner in non-family firms (15%). Additionally, 72% of the family

firms utilize a control enhancing mechanism that entitles them to a larger voting stake than their equity ownership stake, while 31% of the companies in the non-family sample has control enhancing mechanisms in place. Correspondingly, the findings indicate that the size of the excess vote holding is significantly higher in family firms than in non-family firms, 12 percentage points compared to 4 percentage points.

Table 3. Difference in mean test between founding-family and non-founding family firms, and between investment company-controlled firms and directly controlled family firms.

The variables to the far left in the table are winsorized at the 5th and 95th percentile. T-statistics are based on OLS regression for each variable on the family dummy, and serial correlation (within clusters) is corrected through using clustered sandwich estimator (clustering by firm). Numbers in square brackets ([]) is the number of observations of each firm type. The sample consists of 557 family observations. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variable	Founding family	Other family		t-stats
	Mean	Mean	Diff in means	
Tobin's Q	1.76	1.69	0.09	0.46
Industry adj. Tobin's Q	0.35	0.19	0.18	1.24
ROA	0.09	0.08	0.01	0.70
Number of observations	[267]	[290]		

Variable	Family IC controlled	Other family		t-stats
	Mean	Mean	Diff in means	
Tobin's Q	1.64	1.78	-0.13	-0.88
Industry adj. Tobin's Q	0.18	0.33	-0.14	-1.16
ROA	0.08	0.09	-0.01	-1.66
Number of observations	[206]	[351]		

In table 3 we make a more detailed separation of family firms to see if different control structures and characteristics influence family firm performance. We first compare founding-family firms to all other family firms in our sample, showing that performance measures are higher for the founding-family firms than for other family firms, although the difference is not statistically significant. When comparing family firms controlled indirectly through investment companies with directly controlled family firms, we can see that IC controlled companies perform worse on all performance measures. However, the difference is not significant.

Tobin's Q, and thus market performance, can be influenced by several underlying factors, for example the growth profile of a company. Growth potential also differs between industries, with those characterized by high investments in tangible and intangible assets, such as research and development, may experience higher Tobin's Qs. This could be because high investment rates can be an indication of the firm's future growth opportunities. Therefore, when evaluating how family firms perform compared to non-family firms, we need to consider these industry effects. By looking at industry adjusted q in our univariate and multivariate regressions and taking fixed industry effects into account in our multivariate regression, we control for differences in performance between industries. However, if family firms are overrepresented in certain industries, the industry

adjusted results can still be biased towards family firms which could lead to misleading conclusions about the performance relative to non-family firms.

Table 4. Distribution of family and non-family observations sorted by two-digit GICS codes. Firms that are classified as banks and utilities have been excluded from the sample.

GICS	Industry	Observations	Family	Non-family	Percentage family
15	Materials	69	28	41	0.41
20	Industrials	303	174	129	0.57
25	Consumer Discretionary	144	82	62	0.57
30	Consumer Staples	28	21	7	0.75
35	Health Care	75	48	27	0.64
40	Financials	56	48	8	0.86
45	Information Technology	88	48	40	0.55
50	Communication Services	34	16	18	0.47
60	Real Estate	117	92	25	0.79
Number of observations		914	557	357	0.61

Table 4 shows the distribution between industries in our sample based on two-digit GICS codes. Firms that are classified as banks and utilities have been excluded from our analysis. Family firms are represented across all included industries and are overrepresented in consumer staples (30), financials (40) and real estate (60). The overrepresentation of family firms in the financial industry is a result of the public family-controlled investment companies, which we exclude in Table 16.

3.2 Multivariate regression

The main objective of this study is to investigate how family control impacts firm performance, and how family-controlled firms perform compared to their non-family counterparts. In this section, we represent our results from our multivariate OLS regression, which we perform on both Tobin's Q, industry adjusted q and ROA. We have specified our model as following:

Performance measure

$$= \alpha + \beta_1 \text{Family dummy} + \beta_{2-10} \text{Control Variables} \\ + \beta_{11-18} \text{Industry dummy variable} + \beta_{19-24} \text{Year dummy variable} + \varepsilon$$

Our binary variable, $\beta_1 \text{Family dummy}$, takes the value of 1 when a family controls more or equal of 15% of the outstanding votes in a firm. In other regressions, we use continuous measures of control, more specifically the family vote holding stake, and drop our family dummy variable. We use a set of control variables throughout all regressions and include industry and time dummies to control for industry and time fixed effects. In section 4.1 we introduce alternative econometric techniques to test the robustness of our results.

Table 5. Results from multivariate OLS regression, on market performance measures.

Results from regression on Tobin's Q (column a) and b)) and industry adjusted q (column c) and d)). The sample includes 914 observations and 136 unique firms, firms classified as banks and utilities have been excluded. All financial variables (Table 1) are winsorized at the 5th and 95th percentile. The regressions include year dummies for all sample years excluding 2015 and industry dummies based on two-digit GICS codes to control for fixed effects. When running the regression on industry adjusted q, we drop the industry dummies but keep the year dummies. Serial correlation and heteroskedasticity is corrected for by using clustered sandwich estimator (clustered by firms). T-statistics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	a)	b)	c)	d)
Family dummy	0.19 . (1.76)		0.12 (0.84)	
Family voting stake		0.49 . (1.87)		0.52 . (1.76)
Control enhancing mechanism	-0.02 (-0.19)		0.00 (0.03)	
Excess vote holdings		-0.66 * (-2.07)		-0.67 . (-1.94)
% of outside board members (less family)	-0.05 (-0.11)	0.05 (0.11)	-0.15 (-0.31)	0.16 (0.31)
Family CEO/CoB	-0.02 (-0.17)	0.01 (0.14)	-0.02 (-0.16)	0.00 (-0.02)
Unaffiliated blockholdings (family)	0.01 (0.02)	0.31 (1.01)	0.31 (0.76)	0.51 (1.48)
Leverage	-1.02 *** (-3.45)	-1.05 *** (-3.55)	-1.03 *** (-3.70)	-1.06 *** (-3.82)
Cash flows from investment activities / LT assets	1.14 ** (2.88)	1.20 ** (3.00)	1.13 ** (2.75)	1.26 ** (3.00)
Price volatility	-0.01 . (-1.84)	-0.01 (-1.53)	-0.01 * (-2.36)	-0.01 * (-1.96)
Sales growth	0.92 *** (5.23)	0.88 *** (5.02)	1.08 *** (5.06)	1.01 *** (4.76)
Ln(firm age)	0.01 (0.09)	0.03 (0.61)	0.03 (0.54)	0.06 (1.05)
Ln(total assets)	-0.10 * (-2.50)	-0.09 * (-2.33)	-0.11 ** (-2.72)	-0.10 * (-2.54)
(Intercept)	2.44 *** (3.89)	2.15 ** (3.28)	1.45 * (2.36)	0.93 (1.41)
Industry dummies	Yes	Yes	No	No
Year dummies	Yes	Yes	Yes	Yes
Number of observations	[914]	[914]	[914]	[914]
R squared	0.50	0.50	0.27	0.28
Adjusted R squared	0.48	0.49	0.25	0.26

In regression a) and b), Tobin's Q is the dependent variable and in regression c) and d), industry adjusted q is the dependent variable. In regression a) and d) we substitute the

family dummy with continuous measures of family control as well as replace the control enhancing mechanism dummy with excess vote holding.

Model a), in Table 5, supports the results from the univariate analysis in Table 2, where the family dummy coefficient is positive at 0.19 at a 10% significance level, indicating that the family firms in our sample has on average a 12% higher Tobin's Q than non-family firms, which we calculate by dividing the coefficient with the mean Tobin's Q of our sample. However, the results from the industry adjusted q, regression c), show that the family dummy coefficient is not statistically significant when correcting for serial correlation using clustered standard errors.

Previous literature has showed that family management helps to mitigate agency costs and is a mechanism through which firm value correlates positively (Anderson and Reeb, 2003, Poutziouris et al., 2015, Villalonga and Amit 2006), however, as the coefficient for the family CEO/CoB dummy is insignificant we are unable to say whether active ownership in family firms benefits or is detrimental to market performance. In section 3.3, we return to family management's effect on family firm performance.

We examine the difference between vote holding and share ownership held by the largest shareholder; "excess vote holdings", which is made possible through the presence of dual share classes. The results in regression b) and d) show a negative significant impact on Tobin's Q and industry adjusted q from having excess vote holdings, offsetting the positive effect on q from family vote holding. These findings indicate that there are costs associated with excess control. This is line with Villalonga and Amit's (2006) research on the S&P 500 but in contrast to previous research on the Swedish stock exchange conduct by Cronqvist and Nilsson (2003), showing that excess votes do not seem to make controlling minority shareholders expropriate other shareholders' wealth. When we instead use a dummy for denoting these control enhancing mechanisms, as in regression a) and c), there is no significant impact on Tobin's Q or industry adjusted q. This could be explained by the fact that excess vote holding is only value destructive if these mechanisms are large enough. We report the results on this in Table 7 and 8, where we introduce dummies denoting different levels of excess vote holding.

In all regressions, leverage has a significant negative effect on market value and sales growth has a positive significant effect. Furthermore, we see that cashflow from investment activities contribute positively to market value, supporting the hypothesis that companies which invest heavily in the business have more future growth opportunities and thus, show higher market valuations. Total assets also have a significant negative impact on Tobin's Q in all regressions, indicating that smaller firms, which reasonably has smaller asset bases, demonstrates better market performance. Like the case for cash flow from investment activities, this may be because smaller companies have more future growth opportunities.

In Table 6 we perform a multivariate OLS regression on ROA to analyze how family control influence operational performance.

Table 6. Results from multivariate OLS regression on operational performance measure.

Results from regression on ROA (column e) and f)) The sample includes 914 observations and 136 unique firms, firms classified as banks and utilities have been excluded. All financial variables (Table 1) are winsorized at the 5th and 95th percentile. The regressions include year dummies for all sample years excluding 2015 and industry dummies based on two-digit GICS codes to control for fixed effects. Serial correlation and heteroskedasticity is corrected for by using clustered sandwich estimator (clustered by firms). T-statics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	e)	f)
Family dummy	0.00 (0.20)	
Family voting stake		-0.01 (-0.60)
Control enhancing mechanism	0.00 (-0.18)	
Excess vote holdings		-0.02 (-1.08)
% of outside board members (less family)	0.00 (-0.02)	-0.03 (-0.80)
Family CEO/CoB	0.00 (0.00)	0.00 (0.45)
Unaffiliated blockholdings (family)	0.05 * (2.16)	0.06 ** (2.70)
Leverage	-0.13 *** (-5.24)	-0.13 *** (-5.43)
Cash flows from investment activities / LT assets	0.05 (1.33)	0.05 (1.37)
Price volatility	0.00 ** (-2.96)	0.00 ** (-3.01)
Sales growth	0.14 *** (9.58)	0.14 *** (9.76)
Ln(firm age)	0.00 (0.30)	0.00 (0.48)
Ln(total assets)	0.00 (-0.66)	0.00 (-0.38)
(Intercept)	0.13 *** (3.44)	0.15 *** (3.58)
Industry dummies	Yes	Yes
Year dummies	Yes	Yes
Number of observations	[914]	[914]
R squared	0.34	0.34
Adjusted R squared	0.32	0.33

In regression e) and f), ROA is the dependent variable. In model f) we substitute the family dummy with family vote holding and the control enhancing mechanism dummy with excess vote holding.

The outcome of model e) shows that family control has no effect on operational performance, however, this result is statistically insignificant. Moreover, the family voting stake coefficient is slightly negative, but insignificant.

Both regression e) and f) show that unaffiliated block holdings have a positive and significant effect on operational performance, something we also observe in the case of market performance in Table 5, even if this effect is not significant. This contrasts with previous literature showing that unaffiliated block holdings have a negative effect on firm performance (Anderson and Reeb, 2003, Villalonga and Amit, 2006). Our results support the notion that firms benefit from having other strong shareholders, hindering controlling shareholders from taking value-destructive decisions and hence serve as a mechanism to mitigate potential agency costs.

Having non-family board members on the board does not seem to have any impact on firm performance, neither market nor operational, even though this effect is not significant. This is supportive of previous findings (Villalonga and Amit 2006), and contrasts with the thesis that outside board members have a valuable monitoring role for firms. Our findings are also consistent with research on the relationship between board independence and corporate performance, where findings suggests that independent board members do not contribute to boards' effectiveness (Hermalin and Weisbach, 2003).

3.3 Agency problems in family firms

In line with Villalonga and Amit (2006), we wish to examine the interaction of different types of agency problems on firm performance in this study. Specifically, we focus on two different types of agency problems; (1) the conflict between owners and managers and (2) the conflict between large and small shareholders. By comparing firms with varying exposure to these problems, we seek to determine their effects on firm value and which problem is the costliest to shareholders. To control for the first problem, we use a dummy variable to indicate if a family member serves as CEO or chairman. For the second problem, we use a dummy variable to denote control enhancing mechanisms.

While agency costs may arise in family firms due to the controlling family acting in their own interest, integration of ownership and management is a mechanism that can help mitigate these costs, as suggested by agency theory. As we examine family control rather than ownership, we look at the integration of family control (vote holding) and management. Our sample shows that 47% of family observations have a family CEO and/or a family chairman of the board, indicating that families often are active owners. Another type of agency problem that may arise in family firms is the conflict of interest between small and large (family) shareholders. We use control enhancing ownership structures, i.e., the family's excess vote holding, as proxy for the family's ability to extract private benefits at the expense of smaller shareholders. 72% of the family observations have control enhancing mechanisms in place while only 31% of the non-family

observations have these, highlighting that families may be more exposed to this agency problem.

According to the results in Table 5, having a family CEO and/or chairman has limited impact on firm value. However, when examining continuous measures of family control in the same table, excess vote holding has a significant and negative effect on Tobin's Q and industry adjusted q. In contrast, regression a) and c) in Table 5, which use a dummy to indicate the presence of control enhancing mechanisms, do not show a significant impact on market performance. To explore whether this lack of significance can be attributed to a linear relationship between the impact on Tobin's Q from the control enhancing mechanisms and the size of the control enhancing mechanism, we conduct a new multivariate regression in Table 7 and 8 below, using dummies for different levels of excess vote holdings.

Table 7. Introducing new definitions of “control enhancing mechanism” testing on Tobin's Q. Results from multivariate OLS regression using the same set of control variables as in table 5, regression a). The table reports a subset of our regression results, displaying the impact on key control variables. Testing on Tobin's Q with new definition of “control enhancing mechanism”; when difference between vote holding and share ownership is 10 ppt, 15 ppt, 20 ppt, 25 ppt, 30 ppt or above. The sample includes 914 observations and 136 unique firms, firms classified as banks and utilities have been excluded. All financial variables (Table 1) are winsorized at the 5th and 95th percentile. The regressions include year dummies for all sample years excluding 2015 and industry dummies based on two-digit GICS codes to control for fixed effects. Serial correlation and heteroskedasticity is corrected for by using clustered sandwich estimator (clustered by firms). T-statics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	Tobin's Q				
Family dummy	0.22 *	0.20 .	0.19 .	0.21 .	0.20 .
	(2.03)	(1.81)	(1.82)	(1.96)	(1.94)
Control enhancing mechanism	-0.10				
<i>Excess vote holdings 10 ppt or above</i>	(-1.16)				
Control enhancing mechanism		-0.04			
<i>Excess vote holdings 15 ppt or above</i>		(-0.48)			
Control enhancing mechanism			-0.08		
<i>Excess vote holdings 20 ppt or above</i>			(-0.80)		
Control enhancing mechanism				-0.24 *	
<i>Excess vote holdings 25 ppt or above</i>				(-2.49)	
Control enhancing mechanism					-0.38 ***
<i>Excess vote holdings 30 ppt or above</i>					(-3.52)
(Intercept)	2.38 ***	2.47 ***	2.49 ***	2.47 ***	2.48 ***
	(3.74)	(3.90)	(3.92)	(3.93)	(3.97)
Industry dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
R squared	0.50	0.50	0.50	0.51	0.51
Adjusted R squared	0.49	0.48	0.48	0.49	0.50

Table 8. Introducing new definitions of “control enhancing mechanism” testing on industry adjusted q. Results from multivariate OLS regression with same control variables as in table 5, regression c). The table reports a subset of our regression results, displaying the impact on key control variables. Testing on industry adjusted q with new definition of “control enhancing mechanism”; when difference between vote holding and share ownership is 10 ppt, 15 ppt, 20 ppt, 25 ppt, 30 ppt or above. The sample includes 914 observations and 136 unique firms, firms classified as banks and utilities have been excluded. All financial variables (Table 1) are winsorized at the 5th and 95th percentile. A fixed effect model is used in our regression, where the fixed effect is year dummies for all sample years excluding 2015. Serial correlation and heteroskedasticity is corrected for by using clustered sandwich estimator (clustered by firms). T-statics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	Industry adjusted q				
Family dummy	0.16 (1.12)	0.14 (0.97)	0.14 (1.02)	0.14 (1.02)	0.14 (1.04)
Control enhancing mechanism <i>Excess vote holdings 10 ppt or above</i>	-0.10 (-1.08)				
Control enhancing mechanism <i>Excess vote holdings 15 ppt or above</i>		-0.05 (-0.47)			
Control enhancing mechanism <i>Excess vote holdings 20 ppt or above</i>			-0.15 (-1.36)		
Control enhancing mechanism <i>Excess vote holdings 25 ppt or above</i>				-0.21 (-1.93)	
Control enhancing mechanism <i>Excess vote holdings 30 ppt or above</i>					-0.40 *** (-3.32)
(Intercept)	1.36 * (2.18)	1.44 * (2.30)	1.50 * (2.35)	1.49 * (2.37)	1.46 * (2.34)
Industry dummies	No	No	No	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes
R squared	0.27	0.27	0.27	0.28	0.29
Adjusted R squared	0.26	0.25	0.26	0.26	0.27

The significance of the negative impact on Tobin’s Q and industry adjusted q becomes evident when the vote holding of the largest shareholder exceeds the share ownership by 25 percentage points or more. From this, we can infer that control enhancing mechanisms neutralize the positive influence of family control on market performance when the gap between vote holding and cash flow rights exceeds 25 percentage points. Our findings indicate that there are agency costs associated with conflicting interests between large and small shareholders and demonstrate that dual share classes have a detrimental effect on shareholder value when the excess vote holding of the largest shareholder is sufficiently high.

In Table 9 below, we perform test on the interaction between family control in terms of control enhancing mechanisms and management in terms of having a family CEO and/or family chairman on family firm value. In line with Villalonga and Amit (2006), we construct four different types of firms based on their exposure to the two different agency problems described above: (1) the conflict between owners and managers and (2) the conflict between large and small shareholders.

- Type I firms: family firms with control enhancing mechanisms (i.e., the voting stake exceeds the ownership stake) and a family CEO/CoB, these firms do not have agency problem 1 but might have problem 2.

- Type II firms: firms that have control enhancing mechanisms in place but an external CEO/CoB, these firms can experience both types of agency problems.
- Type III firms: Firms with family CEO/CoB but no control enhancing mechanisms, these do not have any agency problems.
- Type IV firms: Non-family firms that may experience agency problem 1 but not agency problem 2, i.e., there is a separation between vote control and management but there are no control enhancing mechanisms in place.

Table 9. The impact of agency problem 1 and 2 on market performance.

Agency problem 2 (control enhancing mechanism) is present if excess vote holdings is above 0 percentage points (ppt). The top number show means of Tobin's Q for the four different firm types. Type I firms are family firms with control enhancing mechanisms and a family CEO/CoB, Type II firms are family firms with control enhancing mechanisms but an external CEO/CoB, Type III firms have a family CEO/CoB but no control enhancing mechanisms, Type IV are non-family firms with no control enhancing mechanisms. The numbers in italic displays mean of industry adjusted q, and the number in square brackets ([]) shows number of observations of each firm type. T-stats are displayed in parenthesis and are based on OLS regression for Tobin's Q or industry adjusted q on a family firm type dummy. Serial correlation (within clusters) is corrected through clustered sandwich estimator (clustering by firm). The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.)

Agency problem II	Agency problem I		Difference (t-stats)
	No	Yes	
Yes	Type I firms	Type II firms	(I) - (II)
	1.67	1.71	-0.04 (-0.24)
	<i>0.30</i>	<i>0.24</i>	<i>0.06</i> (0.43)
	[199]	[202]	
No	Type III firms	Type IV firms	(III) - (IV)
	1.29	1.52	-0.24 (-0.24) .
	<i>0.12</i>	<i>0.05</i>	<i>0.06</i> (0.58)
	[65]	[248]	
Differences (t-stats)	(I) - (III)	(II) - (IV)	(I) - (IV)
	0.38 (2.38) *	0.18 (1.30)	0.15 (0.87)
	<i>0.18</i> (1.50)	<i>0.18</i> (1.35)	<i>0.25</i> (1.80) .

When comparing the average Tobin's Q among firm types, our analysis reveals that Type II firms, which are exposed to both agency Problems, exhibit the highest Tobin's Q, although the difference is not statistically significant. Notably, Type III firms, which are not subject to any agency problems, demonstrate the lowest average unadjusted Tobin's Q. Specifically, Type III firms exhibit a 0.38 lower Tobin's Q than Type I firms, which are exposed to Agency Problem 2, and a 0.24 lower Tobin's Q than Type IV firms, which are exposed to Agency Problem 1. Our findings diverge from those of Villalonga and Amit (2003), who reported that Type III firms had the highest Tobin's Q, thus providing evidence that agency problems are costly for shareholders.

Given that Type I and Type IV firms are exposed to different agency problems, we can identify which type of agency problem is the costliest for shareholders. Our results show that Type I firms have a statistically significant higher industry adjusted q than Type IV firms by 0.25, suggesting that the agency problem related to the separation between vote

holders and managers is more costly for shareholders. However, in Table 7 and 8, we find that excess vote holdings offset the positive impact of family control on Tobin's Q and industry adjusted q when these reach a certain level. In Table 10 below we redefine control enhancing mechanisms to include cases where the excess vote holding is 25 percentage points or higher, testing for if agency problem 2 becomes more apparent.

Table 10. The impact of agency problem 1 and 2 on market performance, with new definition of control enhancing mechanism.

Agency problem 2 (control enhancing mechanism) is present if the excess vote holding is 25 percentage points (ppt) or above. The top number show means of Tobin's Q for the four different firm types. Type I firms are family firms with control enhancing mechanisms and a family CEO/CoB, Type II firms are family firms with control enhancing mechanisms but an external CEO/CoB, Type III firms have a family CEO/CoB but no control enhancing mechanisms, Type IV are non-family firms with no control enhancing mechanisms. The numbers in italic displays mean of industry adjusted q, and the number in square brackets ([]) shows number of observations of each firm type. T-statistics are based on OLS regression for Tobin's Q or industry adjusted q on a family firm type dummy. Serial correlation (within clusters) is correct trough using clustered sandwich estimator (clustering by firm). The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.)

Agency problem II	Agency problem I		Difference (t-stats)
	No	Yes	
Yes	Type I firms	Type II firms	(I) - (II)
	1.42	1.31	0.11 (0.44)
	<i>0.20</i>	<i>-0.26</i>	<i>0.46</i> (1.73) .
	[69]	[29]	
No	Type III firms	Type IV firms	(III) - (IV)
	1.63	1.44	0.19 (1.27)
	<i>0.27</i>	<i>-0.04</i>	<i>0.32</i> (2.57) *
	[195]	[343]	
Differences (t-stats)	(I) - (III)	(II) - (IV)	(I) - (IV)
	-0.21 (-0.90)	-0.13 (-0.74)	-0.02 (-0.09)
	<i>-0.08</i> (-0.47)	<i>-0.22</i> (-0.88)	<i>0.24</i> (1.44)

In Table 10, we find that Type III firms, who are not exposed to any agency problems, have a significantly higher industry adjusted q of 0.32 compared to Type IV firms that are exposed to Agency problem 1. The difference of 0.46 between Type I firms, exposed to problem 2, and Type II firms, who are exposed to both agency problems, is significant for industry adjusted q. These results are consistent with Villalonga and Amit (2003), suggesting that firms with limited exposure to agency problems show higher firm values. However, unlike our results in Table 9, we cannot conclude which agency cost is the costliest for shareholders, as the difference between Type I and Type IV firms is not statistically significant.

Comparing our reported results from Table 9 and 10, we see a distinct difference based on how we define the dummy for control enhancing mechanism used to control for agency problem 2.

4. Sensitivities

4.1 Alternative econometric techniques

We apply various econometric techniques to validate our multivariate regression results on Tobin's Q in Table 11 below. To be specific, we employ OLS univariate, OLS multivariate, OLS industry adjusted q, fixed effects, and random effects. We only display the coefficients for the family firm dummies on Tobin's Q, except for in row 3, where industry adjusted q is the dependent variable and hence, the industry dummies are excluded. The multivariate regressions employ the same set of control variables as used in regression a) in Table 5, except for row 5 where the year dummy is omitted when using time series averages. Additionally, financial variables are winsorized at the 5th and 95th percentile to minimize the impact of extreme values. We test the impact of winsorizing at the 1st and 99th percentile in rows 6 and 7, respectively. Moreover, we introduce a fixed effects and random effects model (rows 8 and 9) to account for firm-specific effects in the data.

Table 11. Robustness of the effects of family control using alternative econometric techniques.

The table displays family firm coefficients from regressions on Tobin's Q. The dependent variable is Tobin's Q for all regressions, except for row 3, where industry adjusted q is used. For the multivariate regressions the same set of control variables is used as in Table 5, regression a), the two far right columns displays if year and/or industry dummies are included in the regression. All regression data is winsorized at the 5th and 95th percentile, except for row 6 and 7 where the data is winsorized on the 1st and 99th percentile. In the fixed and random effects regression we account for firm-specific effects and drop the industry and year dummies. Clustered by firm t-statics is presented in parentheses under the coefficients for each independent variable, except for row 8 and 9 where standard errors are not clustered by firm. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

	Family firm	Year dummies	Industry dummies
1. OLS univariate	0.24 *	No	No
	(2.16)		
2. OLS multivariate	0.19 .	Yes	Yes
	(1.76)		
3. OLS multivariate industry adj. Q	0.12	Yes	No
	(0.84)		
4. OLS univariate time-series averages	0.25 *	No	No
	(2.11)		
5. OLS multivariate time-series averages	0.22	No	Yes
	(1.54)		
6. OLS univariate winsorizing 99th percentile	0.42	No	No
	(1.64)		
7. OLS multivariate winsorizing 99th percentile	0.00	Yes	Yes
	(-0.01)		
8. Fixed effects	0.13	No	No
<i>Firm & Year (t-value)</i>	(1.38)		
9. Random effects	0.13 .	No	No
<i>Firm & Year (z-value)</i>	(1.65)		

The OLS univariate regression is based on the same data as shown in the difference-in-mean test in Table 2, which supports the finding that family firms have, on average, higher Tobin's Qs than non-family firms. The OLS multivariate regression on Tobin's Q and industry adjusted q is equivalent to regression a) and c) in Table 5. Similar results are found in the time-series averages regression in rows 4 and 5, although the coefficient for the multivariate regression is not statistically significant. Overall, the results obtained from using other econometric techniques confirm our previous findings that family control has a positive effect on market performance, although this effect may not be statistically significant for all cases.

The use of time series averages, in row 4 and 5, reduces our sample size from 914 to 136 observations as each firm represent one observation, which may contribute to the non-significance of our family variables in the results. Additionally, we observe higher levels of multicollinearity between variables in our multivariate regression with time series averages compared to Table 5. This could be attributed to the smaller sample size as well as the nature of time series averages, where we aggregate multiple years of data into a single observation. Depending on the degree of variation across years, this could contribute to higher levels of multicollinearity.

The fixed effects model and the random effects (row 8 and 9) model show similar results for the family firm coefficient, but the fixed effects model does not yield statistically significant results. To check the consistency of the two models, we conduct a Hausman test (Table 23) where the results shows that the fixed effects model is preferred over the random effects model since the firm-specific effects are correlated with the independent variables. Furthermore, the fixed effects model accounts for the unobserved time-invariant characteristics across the firms, which are not accounted for by the OLS multivariate regressions in Table 5 and 6, where we include year dummies to control for time effects. However, by clustering our standard errors by firm, we can account for unobserved time-invariant characteristics that are firm-specific, and thereby reducing bias in our results.

4.2 Alternative definitions of family firms

We test our results by redefining our definition of family firm. As discussed by Miller et al. (2007) previous literature suffers from ambiguous results as results are highly dependent on how researcher define family firms. Hence, it is important for the robustness of our results to test for various definitions of family firms. In Table 12 below, we redefine “family firm” by setting new vote holding thresholds, and test the impact of this on Tobin's Q and industry adjusted q.

Table 12. Introducing new definitions of “family firm” testing on Tobin’s Q and industry adjusted Q Multivariate regression on market measures. We redefine “family firm” by setting new thresholds for family voting stake, testing on 15%, 20%, 30%, 40% and 50% or above. The table reports a subset of our regressions results as a robustness check. The multivariate regressions use the same set of control variables as in Table 5, regression a) for Tobin’s Q and regression c) for industry adjusted q. The full sample includes 914 observations, firms classified as banks and utilities have been excluded. Number of family observations for each voting stake threshold is displayed in square brackets ([]). Financial variables (Table 1) are winsorized at the 5th and 95th percentile. The regressions include year dummies for all sample years excluding 2015 and industry dummies based on two-digit GICS codes to control for fixed effects. When running the regression on industry adjusted q, we drop the industry dummies but keep the year dummies. Serial correlation and heteroskedasticity is corrected for by using clustered sandwich estimator (clustered by firms). T-statics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	Tobin's Q				
Family dummy	0.19 .				
<i>Vote holding 15% or above</i>	(1.76)				
Family dummy		0.12			
<i>Voteholding 20% or above</i>		(1.10)			
Family dummy			0.01		
<i>Vote holding 30% or above</i>			(0.06)		
Family dummy				0.10	
<i>Vote holding 40% or above</i>				(0.85)	
Family dummy					0.15
<i>Vote holding 50% or above</i>					(1.15)
(Intercept)	2.44 ***	2.54 ***	2.83 ***	2.61 ***	2.60 ***
	(3.89)	(3.82)	(4.61)	(4.36)	(4.10)
Industry dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Number of family observations	[517]	[456]	[274]	[207]	[152]
R squared	0.50	0.49	0.49	0.49	0.49
Adjusted R squared	0.48	0.48	0.48	0.48	0.48

Table 12. Continued.

Variables	Industry adjusted q				
Family dummy	0.12				
<i>Vote holding 15% or above</i>	(0.84)				
Family dummy		0.11			
<i>Voteholding 20% or above</i>		(0.88)			
Family dummy			0.02		
<i>Vote holding 30% or above</i>			(0.18)		
Family dummy				0.09	
<i>Vote holding 40% or above</i>				(0.64)	
Family dummy					0.18
<i>Vote holding 50% or above</i>					(1.30)
(Intercept)	1.45 *	1.43 *	1.67 **	1.52 *	1.41 *
	(2.36)	(2.21)	(2.64)	(2.47)	(2.43)
Industry dummies	No	No	No	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes
Number of family observations	[517]	[456]	[274]	[207]	[152]
R squared	0.27	0.27	0.26	0.27	0.27
Adjusted R squared	0.25	0.25	0.25	0.25	0.26

Cronqvist and Nilsson (2003) defined a controlling minority-shareholder as an individual who holds at least 25% of the outstanding votes, whereas Faccio and Lang (2002) set a threshold of 20% vote holding for the definition of a family firm. In our initial regression analysis presented in Table 5, we established a vote holding threshold of 15% for family firms and found a significant positive coefficient for the family-dummy variable. However, in Table 12, we note that this effect loses significance when examining higher levels of vote holdings. Unlike Cronqvist and Nilsson (2003), we did not observe a significant negative impact on any performance measures for Swedish public firms when using a vote control threshold of 25% or higher. It is plausible that the smaller sample size in our study may contribute to these divergent results.

5. Conclusions

Family firms play a crucial role in the Swedish corporate landscape, with a notable presence on the stock market through influential investment companies and founding families. Despite the importance of these companies, research on family firms in the Swedish context remains limited, with most existing studies conducted two decades ago. This study aims to contribute to a nuanced understanding of the relationship between family control and firm performance, examining both market and operational perspectives. By analyzing a sample of all publicly listed Swedish firms with a market capitalization of 2,000 SEKm or above as of the end of 2015, this study provides valuable insights into the effects of family control on firm performance.

The study defines a firm as a "family firm" when the largest vote holder is a family controlling more than 15% of all outstanding votes. The results indicate that family control, measured by vote holding, has a positive effect on market performance with family firms having a 12% higher Tobin's Q compared to non-family firms. These findings show that family control in public firms make shareholders better off but does not seem to affect operational performance, measured by Return on Assets. When separating between different types of family firms, we find no difference in performance between founding-family firms and firms controlled by a family other than the founding-family. Similarly, we find no statistical difference between firms indirectly held by a family-controlled investment company and directly controlled family firms.

To examine the effects of management and control structure on firm performance, this study incorporates several variables into the regression analysis. The results suggest that having a family member as CEO or chairman of the board does not seem to contribute to better performance, both in terms of market value and operational performance. However, the presence of unaffiliated block holders in family firms is associated with improved operational performance, indicating that strong shareholders other than the family can mitigate agency costs associated with a family shareholder controlling a significant share of the outstanding votes. Hence, this finding has important implications for families wishing to improve their firm's operational performance.

Furthermore, this study examines the interaction between Agency Problem 1 and Agency Problem 2 on Tobin's Q and industry adjusted q in family firms. Agency Problem 1 refers to conflicts of interest between the controlling family and external managers, while Agency Problem 2 refers to conflict of interests between the controlling family and minority shareholders. The results suggest that family firms exposed to both agency problems have

higher Tobin's Qs than firms with exposure to only one of the problems, indicating that family firms with large exposure to agency problems do not exhibit lower market values than those firms who have limited exposure to agency problems, contrary to the notion that these problems are costly for shareholders.

Regarding dual share class structures, we find that the positive effect of family control on Tobin's Q is offset when these control enhancing mechanisms are utilized. The effect becomes significant when the voting stake of the largest vote holder exceeds the cashflow rights of the same shares by 25 percentage points or more. These findings demonstrate that families and other shareholders may be worse off when such discrepancies exist between vote control and cashflow rights. Redefining control enhancing mechanisms as when the excess vote holding is 25 percentage points or above yields results showing that family firms with limited exposure to agency problems have higher industry adjusted q than firms with agency problems, in line with agency theory and previous studies (Villalonga and Amit, 2003).

The study also underscores the importance of defining a "family firm" when analyzing firm performance. Different definitions of family firms can provide varying results, which may explain the ambiguous findings in previous literature, as discussed by Miller et al. (2007). Sensitivity analysis shows that the positive effect of family control on Tobin's Q becomes insignificant when the family vote holding is 20% or above. The implications of this finding are that researchers need to carefully consider their definition of a "family firm" when studying the relationship between family control and firm performance. Different definitions of family firms can lead to different results, and in this case, a higher threshold for family vote holding (20% or above) leads to the positive effect of family control on Tobin's Q becoming insignificant. This suggests that the impact of family control on firm performance may be overstated in studies that use a lower threshold for family control. Researchers should be aware of this when designing their own studies.

We acknowledge potential limitations to our results. One potential limitation is related to the sample selection. Our sample consists of the largest public firms in Sweden as of 2015. This may limit the generalizability of our findings to firms in other contexts or with different characteristics, such as private firms or in other countries. A further limitation is related to the potential endogeneity between family control and firm performance. Family-controlled firms may perform well because of the family's unique skills and long-term vision, but it could also be that successful firms attract family control. A further limitation to our study is the potential presence of reverse causalities. Reverse causality refers to a situation where the cause-and-effect relationship between two variables is reversed from what is initially assumed. In the context of family firms, reverse causality may arise when families retain control of firms that have a strong outlook and dispose of firms that perform poorly, rather than family control causing firm performance.

In conclusion, this study sheds light on the relationship between family control and firm performance in the Swedish context, contributing to a better and nuanced understanding of the role of family firms in the Swedish corporate landscape. Our findings have important implications for policymakers, practitioners, and investors as well as for families wishing to improve their firm's operational performance and market values.

References

Papers published in periodicals:

ANDERSON, R.C. and REEB, D.M., 2003. Founding-Family Ownership and Firm Performance: Evidence from the S&P 500. *The Journal of Finance*, **58**(3), pp. 1301-1328.

BARONTINI, R. and CAPRIO, L., 2006. The Effect of Family Control on Firm Value and Performance: Evidence from Continental Europe. *European Financial Management*, **12**(5), pp. 689-723.

CHUNG, K.H. and PRUITT, S.W., 1994. A Simple Approximation of Tobin's q. *Financial Management*, **23**(3), pp. 70-74.

CRONQVIST, H. and NILSSON, M., 2003. Agency Costs of Controlling Minority Shareholders. *The Journal of Financial and Quantitative Analysis*, **38**(4), pp. 695-719.

FACCIO, M. and LANG, L.H.P., 2002. The ultimate ownership of Western European corporations. *Journal of Financial Economics*, **65**(3), pp. 365-395.

GHARBI, S. and OTHMANI, H., 2022. Threshold effect in the relationship between family ownership and firm performance: A panel smooth transition regression analysis. *Cogent Economics and Finance*, **10**(1),.

HENREKSON, M., JOHANSSON, D. and STENKULA, M., 2020. The rise and decline of industrial foundations as controlling owners of Swedish listed firms: the role of tax incentives. *Scandinavian Economic History Review*, **68**(2), pp. 170-191.

HERMALIN, B.E. and WEISBACH, M.S., 2003. Boards of directors as an endogenously determined institution: A survey of the economic literature. *Economic Policy Review - Federal Reserve Bank of New York, suppl.Special Issue: Corporate Governance:...*, **9**(1), pp. 7-26.

MILLER, D., LE BRETON-MILLER, I., LESTER, R.H. and CANNELLA JR., A.A., 2007. Are family firms really superior performers? *Journal of Corporate Finance*, **13**(5), pp. 829-858.

MORCK, R., SHLEIFER, A. and VISHNY, R.W., 1988. Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, **20**, pp. 293-315.

POUTZIOURIS, P., SAVVA, C.S. and HADJIELIAS, E., 2015. Family involvement and firm performance: Evidence from UK listed firms. *Journal of Family Business Strategy*, **6**(1), pp. 14-32.

SEKERCI, N., 2020. Factors Associated with Strategic Corporate Decisions in Family Firms: Evidence from Sweden. *International Review of Finance*, **20**(1), pp. 45-75.

VILLALONGA, B. and AMIT, R., 2006. How do family ownership, control and management affect firm value? *Journal of Financial Economics*, **80**(2), pp. 385-417.

Monographs (Books) as sources:

MORCK, R.K., 2000. *Concentrated Corporate Ownership*. Chicago: University of Chicago Press.

Government documents and institutional policies:

Institutional Shareholder Services Inc. (2022). ISS proxy voting guidelines benchmark policy recommendations, Continental Europe. Retrieved May 12th from <https://www.issgovernance.com/file/policy/active/emea/Europe-Voting-Guidelines.pdf?v=1>

Riksdagen. (1995). Lag om årsredovisning i kreditinstitut och värdepappersbolag [Law on the Annual Accounts for Credit Institutions and Securities Companies]. SFS 1995:1559. Retrieved May 12th from https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-19951559-om-arsredovisning-i_sfs-1995-1559

Riksdagen. (2005). Aktiebolagslag [Swedish Companies Act]. SFS 2005:551. Retrieved May 12th from https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/aktiebolagslag-2005551_sfs-2005-551

The Global Industry Classification Standard (GICS). (2023). Retrieved from <https://classification.codes/classifications/industry/gics/>

Websites:

Knut och Alice Wallenbergs stiftelse. (2023). Retrieved May 12th from <https://kaw.wallenberg.org/knut-och-alice-wallenbergs-stiftelse>

Appendix

Table 13. Descriptive statistics for the full sample.

In the first table financial variables (Table 1) are winsorized at the 5th and 95th percentile and the table below show the financial variables without winsorizing. The sample consists of 914 firm-year observations and include 136 companies listed on Nasdaq Stockholm. Firms that are classified as banks and utilities have been excluded from the sample.

Descriptive statistics with "winsorizing"

Variable	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
Tobin's Q	1.60	0.71	0.29	0.98	2.30	2.70
Industry adj. Tobin's Q	0.13	0.70	-1.30	-0.35	0.62	1.30
ROA	0.08	0.05	-0.03	0.04	0.11	0.17
Family ownership stake	0.16	0.19	0.00	0.00	0.25	0.86
Family voting stake	0.23	0.25	0.00	0.00	0.35	0.98
Unaffiliated blockholdings (family)	0.09	0.13	0.00	0.00	0.17	0.56
% of outside board members (less family)	0.91	0.11	0.50	0.83	1.00	1.00
Largest ownership stake	0.21	0.16	0.02	0.10	0.29	0.86
Largest voting stake	0.30	0.20	0.04	0.16	0.39	0.98
Excess vote holdings	0.09	0.13	-0.60	0.00	0.17	0.51
Control enhancing mechanism	0.56	0.50	0.00	0.00	1.00	1.00
ROE	0.17	0.11	-0.04	0.10	0.24	0.38
Leverage	0.26	0.15	0.00	0.16	0.36	0.55
Cash flows from investment activities / LT assets	0.10	0.08	-0.08	0.04	0.16	0.24
Price volatility	31.00	10.00	8.90	23.00	39.00	50.00
Sales growth	0.08	0.12	-0.14	0.00	0.15	0.30
Ln(firm age)	4.00	0.77	2.30	3.30	4.60	5.90
Ln(sales)	9.00	1.70	5.60	7.80	10.00	12.00
Ln(total assets)	9.60	1.60	6.10	8.50	11.00	13.00
Ln(marketcap.)	9.80	1.40	6.70	8.70	11.00	13.00
Number of observations	[914]					

Descriptive statistics without "winsorizing"

Variable	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
Tobin's Q	2.10	2.40	0.29	0.98	2.30	23.00
Industry adj. Tobin's Q	0.59	2.30	-1.90	-0.35	0.62	21.00
ROA	0.09	0.15	-0.79	0.04	0.11	1.90
ROE	0.16	0.77	-21.00	0.10	0.24	5.70
Leverage	0.26	0.15	0.00	0.16	0.36	0.85
Cash flows from investment activities / LT assets	0.12	0.16	-1.40	0.04	0.16	1.20
Price volatility	33.00	15.00	7.80	23.00	39.00	148.00
Sales growth	0.12	0.49	-0.94	0.00	0.15	11.00
Ln(firm age)	4.00	0.80	0.69	3.30	4.60	6.00
Ln(sales)	9.00	1.70	3.90	7.80	10.00	13.00
Ln(total assets)	9.60	1.70	4.60	8.50	11.00	14.00
Ln(marketcap.)	9.80	1.40	5.70	8.70	11.00	14.00
Number of observations	[914]					

Table 14. Difference in mean test between family and non-family firms, without winsorizing.

Financial variables (Table 1) are not winsorized on the 5th and 95th percentile. The means are derived from 914 firm-year observations and include 136 companies listed on Nasdaq Stockholm. T-statistics are based on OLS regression for each variable on the family dummy, and serial correlation (within clusters) is correct through using clustered sandwich estimator (clustering by firm). The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variable	Family	Non-family	Diff in means	t-stats
	Mean	Mean		
Tobin's Q	2.28	1.84	0.44	1.58
Industry adj. Tobin's Q	0.79	0.28	0.51	2.12 *
ROA	0.10	0.07	0.03	2.18 *
Family ownership stake	0.26	n.a.	n.a.	13.28 ***
Family voting stake	0.38	n.a.	n.a.	16.37 ***
Unaffiliated blockholdings (family)	0.14	n.a.	n.a.	10.07 ***
Family CEO/CoB	0.47	n.a.	n.a.	9.38 ***
% of outside board members (less family)	0.85	1.00	-0.15	-13.54 ***
Largest ownership stake	0.26	0.15	0.11	4.88 ***
Largest voting stake	0.38	0.19	0.19	6.92 ***
Excess vote holdings	0.12	0.04	0.08	3.96 ***
Control enhancing mechanism	0.72	0.31	0.41	5.38 ***
ROE	0.20	0.11	0.09	1.34
Leverage	0.25	0.28	-0.03	-1.51
Cash flows from investment activities / LT assets	0.12	0.12	0.00	-0.20
Price volatility	31.39	35.80	-4.41	-2.69 **
Sales growth	0.15	0.07	0.08	2.97 **
Ln(firm age)	3.93	4.04	-0.11	-0.83
Ln(sales)	8.67	9.40	-0.73	-2.48 *
Ln(total assets)	9.39	9.91	-0.52	-1.82 .
Ln(marketcap.)	9.66	9.92	-0.26	-1.04
Number of observations	[557]	[357]		

Table 15. Results from multivariate OLS regression on market performance measures, including banks in the sample.

Multivariate regression on Tobin's Q and industry adjusted q, the same regression model is used as in Table 5. The table show a subset of our regressions results as a robustness check, displaying the impact on key control variables when banks is included in the sample. Serial correlation and heteroskedasticity is corrected for by using clustered sandwich estimator (clustered by firms). T-statics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	a)	b)	c)	d)
Family dummy	0.18 . (1.74)		0.12 (0.84)	
Family voting stake		0.49 . (1.91)		0.53 . (1.80)
Control enhancing mechanism	-0.01 (-0.12)		0.01 (0.06)	
Excess vote holdings		-0.68 * (-2.20)		-0.69 * (-2.04)
(Intercept)	2.29 *** (3.85)	2.01 ** (3.23)	1.38 * (2.30)	0.87 (1.36)
Industry dummies	Yes	Yes	No	No
Year dummies	Yes	Yes	Yes	Yes
Number of observations	[946]	[946]	[946]	[946]
R squared	0.53	0.54	0.28	0.29
Adjusted R squared	0.52	0.52	0.26	0.27

Table 16. Results from multivariate OLS regression on market performance measures, excluding investment companies from the sample.

Multivariate regression on Tobin's Q and industry adjusted q, the same regression model is used as in Table 5. The table show a subset of our regressions results as a robustness check, displaying the impact on key control variables when investment companies (as well as banks and utilities) is excluded from the sample. Serial correlation and heteroskedasticity is corrected for by using clustered sandwich estimator (clustered by firms). T-statics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	a)	b)	c)	d)
Family dummy	0.18 (1.55)		0.11 (0.72)	
Family voting stake		0.38 (1.30)		0.41 (1.25)
Control enhancing mechanism	-0.03 (-0.33)		-0.03 (-0.28)	
Excess vote holdings		-0.74 . (-1.86)		-0.84 * (-1.97)
(Intercept)	2.31 *** (3.39)	2.27 ** (3.16)	1.36 * (2.10)	1.12 (1.58)
Industry dummies	Yes	Yes	No	No
Year dummies	Yes	Yes	Yes	Yes
Number of observations	[851]	[851]	[851]	[851]
R squared	0.48	0.48	0.28	0.29
Adjusted R squared	0.46	0.46	0.26	0.27

Table 17. Results from multivariate OLS regression on return on equity (ROE).

Multivariate regression on ROE as dependent variable, the same regression model is used as in Table 6. The table show a subset of our regressions results as a robustness check, displaying the impact on key control variables with ROE instead of ROA as the dependent variable. Serial correlation and heteroskedasticity is corrected for by using clustered sandwich estimator (clustered by firms). T-statics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	e)	f)
Family dummy	-0.01 (-0.29)	
Family voting stake		-0.07 . (-1.65)
Control enhancing mechanism	0.00 (0.07)	
Excess vote holdings		-0.02 (-0.30)
(Intercept)	0.12 (1.56)	0.21 * (2.34)
Industry dummies	Yes	Yes
Year dummies	Yes	Yes
Number of observations	[914]	[914]
R squared	0.26	0.27
Adjusted R squared	0.24	0.25

Table 18. Introducing new definitions of “family firm” testing on ROA

Multivariate regression on operational performance measure. We redefine “family firm” by setting new thresholds for family voting stake, testing on 15%, 20%, 30%, 40% and 50% or above. The table reports a subset of our regressions results as a robustness check. The multivariate regressions use the same set of control variables as in Table 6, regression e). The full sample includes 914 observations, firms classified as banks and utilities have been excluded. Number of family observations for each voting stake thresholds is displayed in Square brackets ([]). Financial variables (Table 1) are winsorized at the 5th and 95th percentile. The regressions include year dummies for all sample years excluding 2015 and industry dummies based on two-digit GICS codes to control for fixed effects. Serial correlation and heteroskedasticity is corrected for by using clustered sandwich estimator (clustered by firms). T-statistics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	ROA				
Family dummy	0.00				
<i>Vote holding 15% or above</i>	(0.20)				
Family dummy		0.00			
<i>Voteholding 20% or above</i>		(-0.41)			
Family dummy			-0.01		
<i>Vote holding 30% or above</i>			(-1.40)		
Family dummy				-0.01	
<i>Vote holding 40% or above</i>				(-1.06)	
Family dummy					-0.01
<i>Vote holding 50% or above</i>					(-0.61)
(Intercept)	0.13 *** (3.44)	0.14 *** (3.59)	0.17 *** (4.45)	0.16 *** (4.34)	0.14 *** (4.13)
Industry dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Number of family observations	[517]	[456]	[274]	[207]	[152]
R squared	0.34	0.34	0.34	0.34	0.34
Adjusted R squared	0.32	0.32	0.32	0.32	0.32

Table 19. Difference in mean test between family and non-family firms, using time-series averages. Means are derived from time-series averages for 136 unique firms, with data for the years 2015-2021. A firm is considered to have family CEO/CoB and/or control enhancing mechanism in the time series average if they have had it for 50% or more of the sample period. Financial variables (Table 1) are winsorized at the 5th and 95th percentile. T-statistics are based on OLS regression for each variable on the family dummy, and serial correlation (within clusters) is correct through using clustered sandwich estimator (clustering by firm). The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variable	Family	Non-family		t-stats
	Mean	Mean	Diff in means	
Tobin's Q	1.66	1.42	0.24	2.10 *
Industry adj. Tobin's Q	0.25	-0.03	0.28	2.72 **
ROA	0.08	0.07	0.01	2.41 *
Family ownership stake	0.25	n.a.	n.a.	11.10 ***
Family voting stake	0.39	n.a.	n.a.	14.00 ***
Unaffiliated blockholdings (family)	0.14	n.a.	n.a.	8.54 ***
Family CEO/CoB	0.46	n.a.	n.a.	7.00 ***
% of outside board members (less family)	0.85	1.00	-0.15	-11.44 ***
Largest ownership stake	0.26	0.16	0.10	3.87 ***
Largest voting stake	0.39	0.19	0.20	6.77 ***
Excess voteholdings	0.13	0.03	0.10	4.84 ***
Control enhancing mechanism	0.73	0.31	0.42	5.33 ***
ROE	0.18	0.16	0.02	1.63
Leverage	0.25	0.27	-0.02	-0.87
Cash flows from investment activities / LT assets	0.10	0.10	0.00	0.39
Price volatility	30.48	33.10	-2.62	-2.18 *
Sales growth	0.09	0.07	0.02	1.59
Ln(firm age)	3.96	3.97	-0.01	-0.01
Ln(sales)	8.67	9.31	-0.64	-2.28 *
Ln(total assets)	9.42	9.85	-0.43	-1.59
Ln(marketcap.)	9.67	9.85	-0.18	-0.81
Number of firms	[78]	[58]		

Table 20. Results from multivariate OLS regression on market performance measures, using time-series averages.

Result from regression on Tobin's Q and industry adjusted q. The sample consists of time series averages from 136 unique firms, firms classified as banks and utilities have been excluded. Financial variables (Table 1) are winsorized at the 5th and 95th percentile. A fixed effect model is used in our regression, where the fixed effect is industry dummies based on two-digit GICS codes. When running the regression on industry adjusted q, we drop the industry dummies. T-statistics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	a)	b)	c)	d)
Family dummy	0.22 (1.54)		0.14 (0.86)	
Family voting stake		0.48 (1.63)		0.50 (1.49)
Control enhancing mechanism	0.01 (0.15)		0.02 (0.18)	
Excess vote holdings		-0.51 (-1.24)		-0.56 (-1.24)
% of outside board members (less family)	0.55 (0.93)	0.58 (0.90)	0.56 (0.87)	0.81 (1.14)
Family CEO/CoB	0.02 (0.20)	0.06 (0.54)	0.08 (0.61)	0.10 (0.81)
Unaffiliated blockholdings (family)	-0.21 (-0.47)	0.22 (0.61)	0.10 (0.21)	0.39 (0.95)
Leverage	-1.30 ** (-3.29)	-1.30 ** (-3.30)	-1.30 *** (-3.62)	-1.29 *** (-3.61)
Cash flows from investment activities / LT assets	1.38 . (1.67)	1.50 . (1.79)	1.31 (1.58)	1.59 . (1.89)
Price volatility	-0.01 (-0.86)	0.00 (-0.51)	-0.02 . (-1.71)	-0.01 (-1.35)
Sales growth	3.18 *** (4.10)	3.01 *** (3.83)	3.08 *** (3.69)	2.79 ** (3.31)
Ln(firm age)	0.06 (0.92)	0.09 (1.36)	0.06 (0.91)	0.09 (1.35)
Ln(total assets)	-0.09 * (-2.33)	-0.08 . (-1.97)	-0.10 * (-2.49)	-0.09 * (-2.22)
(Intercept)	1.51 . (1.76)	1.14 (1.20)	0.70 (0.82)	0.12 (0.12)
Industry dummies	Yes	Yes	No	No
Number of observations	[136]	[136]	[136]	[136]
R squared	0.62	0.62	0.37	0.38
Adjusted R squared	0.55	0.55	0.31	0.32

Table 21. Results from multivariate OLS regression on operational performance measure, using time series averages.

Results from regression on ROA. The sample consists of time series averages from 136 unique firms, firms classified as banks and utilities have been excluded. Financial variables (Table 1) are winsorized at the 5th and 95th percentile. A fixed effect model is used in our regression, where the fixed effect is industry dummies based on two-digit GICS codes. T-statistics is presented in parentheses under the coefficients for each independent variable. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Variables	e)	f)
Family dummy	0.00 (-0.26)	
Family voting stake		-0.02 (-1.04)
Control enhancing mechanism	0.00 (0.44)	
Excess vote holdings		0.00 (0.02)
% of outside board members (less family)	0.04 (0.84)	0.00 (0.09)
Family CEO/CoB	0.00 (0.26)	0.00 (0.54)
Unaffiliated blockholdings (family)	0.05 (1.62)	0.05 . (1.90)
Leverage	-0.14 *** (-4.96)	-0.14 *** (-5.08)
Cash flows from investment activities / LT assets	0.06 (0.95)	0.05 (0.83)
Price volatility	0.00 * (-2.43)	0.00 * (-2.49)
Sales growth	0.29 *** (5.28)	0.29 *** (5.25)
Ln(firm age)	0.00 (0.87)	0.00 (0.74)
Ln(total assets)	0.00 (-0.92)	0.00 (-0.75)
(Intercept)	0.11 . (1.79)	0.14 * (2.10)
Industry dummies	Yes	Yes
Number of observations	[136]	[136]
R squared	0.50	0.51
Adjusted R squared	0.42	0.43

Table 22. Mann-Whitney U test on family and non-family firms.

The test assess difference between groups, and if the two groups follow the same distribution. P-values < 0.05 indicates that there is a significant difference between the groups. Standard errors are not corrected for correlation within clusters (firm level), the p-value may therefore not be completely accurate.

	n	Tobin's Q	Industry adj. Tobin's Q	ROA
Family	557	1.45	0.10	0.08
Non-family	357	1.19	-0.11	0.06
<i>p</i> -value		1.49E-06	5.44E-13	8.34E-12

Table 23. Hausman test on fixed effects and random effects model for firm-specific effects.

Hausman test to test the consistency of the two models. The test results should indicate if the firm specific effects are correlated or uncorrelated with the independent variables, to determine which model is preferred. The same regression model as in Table 5, regression a) is used, except for that we drop the industry and year dummies. Standard errors are not clustered by firm as in Table 5. A small p-value (< 0.05) indicate that there is a significant difference in consistency between the fixed and random effects model and would imply that a fixed effect model would be preferred over the random effects model. The statistical significance is denoted from the asterisk, at 0.1% (***), 1% (**), 5% (*) and 10% (.).

Hausman test	Fixed effects	Random effects
Family dummy	0.13	0.13 .
<i>t</i> -value / <i>z</i> -value	(1.38)	(1.65)
<i>p</i> -value	4.37E-09	

Table 24. List of firms and their definitions included in the sample

The table display the 136 firms included in our sample, and number of years they been classified as family firm and/or founding-family and family IC controlled. The list does not include banks included in the robustness test in Table 15.

Firm	Family firm	Founding family	Family IC controlled	Firm	Family firm	Founding family	Family IC controlled
AAK	7	0	7	Electrolux	0	0	0
ABB	0	0	0	Elekta	7	7	0
Addtech	7	7	0	Eltel	0	0	0
Afry	0	0	0	Ericsson	0	0	0
Alfa Laval Corporate	7	0	0	Evolution	4	0	0
Alimak Group	5	0	5	Fabege	7	0	7
AQ Group	7	7	0	Fagerhult	7	0	7
ASSA ABLOY	7	0	7	FastPartner	7	7	0
AstraZeneca	0	0	0	Fenix Outdoor International	7	7	0
Atlas Copco	0	0	0	Fingerprint Cards	7	0	0
Atrium Ljungberg	0	0	0	Getinge	7	0	0
Attendo	0	0	0	Gränges	0	0	0
Autoliv	0	0	0	H & M Hennes & Mauritz	7	7	0
Axfood	7	7	7	Heba	7	7	0
Balder	7	7	0	Heimstaden	6	0	0
Beijer Alma	7	7	0	Hexagon	7	0	7
Beijer Ref	0	0	0	HEXPOL	7	0	7
Bergman & Beving	4	0	0	HMS Networks	7	0	7
Besqab	7	0	0	Hoist Finance	0	0	0
Betsson	7	7	0	Holmen	7	0	7
Bilia	7	0	0	Hufvudstaden	7	0	7
Billerud	0	0	0	Husqvarna	7	0	7
BioGaia	7	7	0	Industrivärden	5	0	5
Boliden	0	0	0	Indutrade	7	0	7
Bravida Holding	0	0	0	Intrum	0	0	0
Bufab	6	0	6	Investment Latour	7	7	0
Bure Equity	7	0	0	Investment Öresund	5	4	0
Bygghmax Group	0	0	0	Investor	7	7	0
Camurus	6	0	0	Invisio	3	0	0
Castellum	2	0	0	Inwido	0	0	0
Catena	7	0	7	IT Shop Concept	6	6	0
Clas Ohlson	7	7	0	JM	0	0	0
Cloetta	7	7	0	Kambi Group plc	7	7	0
Concentric	0	0	0	Kindred Group plc	0	0	0
Coor Service Management	0	0	0	Kinnevik	3	3	0
Corem Property Group	7	0	0	L E Lundbergföretagen	7	7	0
Creades	7	7	0	Lagercrantz Group	7	0	0
Diös Fastigheter	7	0	0	Lifco	7	0	0
Dometic Group	0	0	0	Lindab International	0	0	0
Duni	7	0	7	Loomis	4	0	4
Dustin Group	6	0	6	Lucara Diamond Corp.	7	7	0

Table 24. Continued.

Firm	Family firm	Founding family	Family IC controlled	Firm	Family firm	Founding family	Family IC controlled
<i>Lundin Gold</i>	0	0	0	<i>Scandi Standard</i>	0	0	0
<i>Lundin Mining Corporation</i>	0	0	0	<i>Scandic Hotels Group</i>	0	0	0
<i>Meko</i>	1	0	1	<i>Sectra</i>	7	7	0
<i>Millicom International Cellular</i>	3	3	3	<i>Securitas</i>	7	0	7
<i>Modern Times Group MTG</i>	3	3	3	<i>Sensys Gatso Group</i>	7	7	0
<i>Mycronic</i>	0	0	0	<i>Sinch</i>	0	0	0
<i>NCC</i>	0	0	0	<i>Skanska</i>	0	0	0
<i>Nederman Holding</i>	7	0	7	<i>SKF</i>	7	0	7
<i>Net Insight</i>	0	0	0	<i>SkiStar</i>	7	7	7
<i>New Wave Group</i>	7	7	0	<i>SSAB</i>	0	0	0
<i>NIBE Industrier</i>	7	0	0	<i>Starbreeze</i>	4	4	0
<i>Nobia</i>	7	0	7	<i>Stora Enso</i>	7	0	7
<i>Nolato</i>	7	7	0	<i>Sweco</i>	7	7	0
<i>NP3 Fastigheter</i>	7	7	0	<i>Swedish Orphan Biovitrum</i>	7	0	7
<i>OEM International</i>	7	0	0	<i>Systemair</i>	7	7	0
<i>Orexo</i>	0	0	0	<i>Tele2</i>	6	6	6
<i>Pandox</i>	0	0	0	<i>Telia Company</i>	0	0	0
<i>Peab</i>	7	7	0	<i>Thule Group</i>	0	0	0
<i>Platzer Fastigheter Holding</i>	7	0	7	<i>Tobii</i>	0	0	0
<i>Precise Biometrics</i>	0	0	0	<i>Trelleborg</i>	0	0	0
<i>Ratos</i>	7	7	0	<i>Troax Group</i>	6	0	6
<i>RaySearch Laboratories</i>	7	7	0	<i>Vitec Software Group</i>	7	7	0
<i>Saab</i>	7	0	7	<i>Vitrolife</i>	0	0	0
<i>Sagax</i>	7	7	0	<i>VNV Global</i>	0	0	0
<i>Sandvik</i>	0	0	0	<i>Volvo</i>	0	0	0
<i>SAS</i>	0	0	0	<i>Wallenstam</i>	7	7	0
<i>SCA</i>	0	0	0	<i>Wihlborgs Fastigheter</i>	0	0	0