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Managerial Ownership and Firm Performance in German Small and Medium-Sized Enterprises

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Non–technical Summary

This paper studies the incentive effect and entrenchment effect of managerial ownership in a sample of small and medium–sized companies in the German business–related service sector.

Up to now, questions of corporate governance have mostly been studied in samples of large firms that are listed on the stock market. We address these questions in a sample of private limited liability firms (GmbHs). GmbHs are the most important legal form in Germany. They are characterized by the fact that the liability of the owners is restricted to the amount of equity capital they invested in the company. Typically, GmbHs are small and medium–sized companies. We aim to analyse whether the distortions caused by the separation of company ownership and control are also present in GmbHs.

For our analysis we combine information from a business survey with company data from Creditreform, Germany's largest credit rating agency. The data set is an unbalanced panel of 356 companies from 1997-2000. The survey covers the business-related service sector and is conducted by the ZEW Mannheim. The companies are asked on a quarterly basis whether their profits have increased, stayed the same or decreased in the last three months. On the basis of these quarterly answers, we construct an annual performance measure. The credit rating agency provides us with information about managerial ownership share defined as the sum of the ownership share of all managers.

We find a positive relationship between managerial ownership share and company performance up to around 40 percent owing to the incentive effect. Our findings suggest that there are important differences between public and private companies. For public companies, very high values of managerial ownership have a negative influence on performance due to managerial entrenchment. In contrast, we do not find an entrenchment effect for private companies.

Managerial Ownership and Company Performance in German Small and Medium-Sized Private Enterprises

by

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Abstract

We analyze the relationship between managerial ownership and company performance, testing the incentive and entrenchment hypothesis. Differently from previous literature, we focus on small and medium-sized private enterprises which constitute an important part of the German economy. We use a panel of 356 companies in the German business-related service sector for the years 1997-2000. Our findings are that performance, measured by survey-based profit information, is increasing in managerial ownership up to around 40 percent. We do not find a significant entrenchment effect, possibly because at levels at which managers could become entrenched, they already bear a large proportion of the costs and have therefore an incentive to maximize company value.

JEL classification: G32

Keywords: company performance, managerial ownership, corporate governance, small and medium-sized enterprises

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1 Introduction

Economic theory identifies two opposing effects of managerial ownership – the incentive and the entrenchment effect. On the one hand, managerial ownership aligns the objectives of owners and managers because managers then bear a part of the costs of their actions themselves. From this incentive effect we expect a positive relationship between managerial ownership and company performance. On the other hand, managers with large ownership shares have the ability to "entrench" themselves because a high managerial ownership share makes it difficult for other shareholders to control the management and gives the owner-managers the power to potentially disregard the interests of small shareholders. Their large ownership share makes them immune to control by outside owners. If the entrenchment effect is larger than the incentive effect, performance decreases in managerial ownership.

The emphasis of much of the literature has been large, publicly held US corporations. Although listed companies play a large role in the United States and in the UK, their importance for other countries is much smaller. Small and medium-sized private companies with limited liability in Germany (GmbHs), for example, accounted for more than 33 percent of total turnover in 2000 and their overall importance has increased steadily in the last thirty years.[1] In this paper, we address the relationship between managerial ownership and performance empirically for a sample of 356 GmbHs.[2]

GmbHs have one or more owners who enjoy limited liability. In contrast to public companies, their shares cannot be listed on a stock market. GmbHs are run by managers who can hold a stake in the company as well. Compared to large publicly held companies, the ownership share of managers is often relatively large. However, non-managing owners of private companies usually also have a high ownership share, which makes it likely that they are well informed. Therefore, the possibility for managers to "entrench" themselves is restricted, even if they hold substantial ownership shares. This differentiates private from public companies. In public companies, ownership is often so dispersed that, for example, an ownership share of 5 percent can be enough for managerial entrenchment. At such low levels of ownership shares, managers have not full incentives to maximize company value.

[1] See Table A1 in the appendix for more details.

[2] The counterparts of German GmbHs are limited companies (Ltd) in the UK and closely-held corporations in the USA.

For our analysis we combine information from a business survey with company data from Creditreform, Germany's largest credit rating agency. The data set is an unbalanced panel of 356 companies from 1997-2000. The survey covers the business-related service sector and is conducted by the Centre for European Economic Research (ZEW) in Mannheim, Germany. The companies are asked on a quarterly basis whether their profits have increased, stayed the same or decreased in the last three months. On the basis of these quarterly answers, we construct an annual performance measure. The credit rating agency provides us with information about managerial ownership share defined as the sum of the ownership share of all managers.

Our empirical specification explaining company performance includes managerial ownership share up to the third power and controls for the number of managers who hold ownership shares, the number of outside owners, the number of a company's bank relationships, the size and age of the company. We find a positive relationship between managerial ownership share and company performance up to a maximum of around 40 percent of ownership.

In the context of our analysis we need to be concerned with problems of endogeneity. It is possible that managerial ownership itself is influenced by company performance, that is there is the potential of reverse causality. Since we use panel data, we are able to control for reverse causality by using lagged regressors. However, unmeasured factors such as changes in corporate governance might also be driving our results. Whatever unobserved variable may be driving the relationship between ownership and performance, it is very likely to drive the relationship between lagged ownership and performance. Owing to the panel structure of the data set, we are able to take into account unobserved company heterogeneity that is time-invariant, for example, managerial ability as long as there are no changes in the management team. By contrast, we are not able to control for unobserved factors that are time varying.

The main contribution of this paper to the literature is the study of the relationship of managerial ownership and performance for private companies. Up to now this relationship has mainly been studied for listed companies.[3] In general it is difficult to observe the performance of private companies because data from balance sheets and profit and loss

[3]See, for example, Jensen and Murphy (1990) and Kaplan (1994) for the US, Köke (2000) and Januszewski et al. (2002) for Germany. Examples of the rare studies for small companies are Ang et al. (2000), Bennedsen et al. (2000) and Harhoff and Stahl (1995). Hellmann and Puri (2002) provide evidence on venture capital financing of small and medium-sized companies.

accounts are rarely available. Our findings suggest that there are important differences between public and private companies. For public companies, very high values of managerial ownership have a negative influence on performance due to managerial entrenchment. In contrast, we do not find an entrenchment effect for private companies.

The theoretical literature distinguishes between insiders, who manage the company, and outsiders, who supply funds to the company (Jensen and Meckling, 1976). Inside managers adopt investment strategies that benefit them but reduce the payment to outside suppliers of funds. This behaviour is constrained by higher managerial ownership because this increases the costs that managers have to bear (incentive effect). On the other hand, for a given ownership distribution, the higher the level of managerial ownership, the more difficult it is for outsiders to control the management. Therefore, the management has the possibility to "entrench" themselves. Taking the incentive hypothesis and the entrenchment hypothesis into account, the relationship between management's ownership share and company performance can be non-linear. At low levels of ownership the incentive effect can be dominant, that is, there is a positive effect. However, at very high levels of ownership the entrenchment effect might be more important and the effect of ownership could be negative.[4]

This theoretical view is supported by empirical results of Morck et al. (1988) who investigate the relationship between managerial ownership of the company's equity and Tobin's Q for large publicly held companies in the US. They find that Tobin's Q rises as managerial ownership increases from 0 percent to 5 percent, as ownership share increases further up to 25 percent it falls, and then continues to rise again as ownership share exceeds 25 percent. Other empirical studies support their results qualitatively, although they do not agree on the exact functional form of the relationship (for example, McConnell and Servaes, 1990; Mehran, 1995; Kole, 1995). In addition, the relationship between managerial ownership and company performance has been found to become insignificant after including fixed effects (Himmelberg et al., 1999). This may be due to the trade-off between utility maximization of managers and their profit orientation pointed out by Demsetz (1983). In a competitive environment managers have to pay for their on-the-job consumption by a reduction in their pecuniary managerial compensation. As a consequence, managers will not consume while on the job unless the cost of doing so is less

[4]See Shleifer and Vishny (1997) for a comprehensive review of the corporate governance literature discussing the relationship between ownership structure and performance.

than if they consumed at home. However, with a greater ownership share and loose market discipline the owner manager has the power to enjoy both on-the-job consumption and a high salary. In equilibrium, the structure of ownership that emerges is an endogenous result depending on monitoring costs and incentives. This theoretical view is supported by the empirical analysis by Demsetz and Lehn (1985), who find no significant linear relationship between ownership concentration and company performance, measured as the accounting profit rate.

The previously mentioned empirical studies are all concerned with large, publicly held corporations. In contrast, Ang et al. (2000) study the relationship between a company's ownership structure and its agency costs for a sample of small US companies. Two efficiency measures serve as proxy for agency costs: the ratio of operating expenses to annual sales and the ratio of annual sales to total assets. They find that companies with an owner-manager have lower agency costs, that agency costs decrease with the managerial ownership share, and that agency costs increase with the number of outside shareholders.

This paper is structured as follows: Section 2 describes the data, Section 3 presents the estimation results, and Section 4 concludes.

2 Data Description

2.1 Data Set

The data comes from a business survey in the German business-related service sector carried out since 1994 by the ZEW and Creditreform, Germany's largest credit rating agency. The industries as well as their industrial classification codes are displayed in Table A2 in the appendix.

The survey is carried out quarterly. A single page questionnaire is sent to about 4000 companies, achieving a response rate of approximately 25 percent. In 1994, when the survey was launched, a stratified sample covering all companies included in the Creditreform database was taken. The stratification was done according to company size, region and sector affiliation. A sample refreshment takes place annually.[5]

[5]The sample is stratified with respect to the ten sectors listed in Table A2 in the appendix, five size classes (two for East and three for West Germany), as well as with respect to regional affiliation (East/West Germany). For more details of the sample design and the data set see Kaiser et al. (2000).

The questionnaire is divided into two parts. The first part contains questions on the business development of the companies in the current quarter with respect to the previous quarter and on their expectations for the next quarter. The second part is devoted to questions of current economic or political interest. The survey is conducted as a panel.

We merged the data derived from the survey with company information from the Creditreform database. This database includes detailed information on the ownership structure of private companies with limited liability. It states the ownership share of managers and gives the identity of outside owners. Furthermore, the number of bank relationships a company has is displayed. Other information is the number of employees and the age of a company. These variables have been gathered on a yearly basis since 1997. We therefore obtain an unbalanced panel data set that includes observations from 1997 to 2000. The participation pattern is as follows: 20 percent of the companies participated in all 4 years, 14 percent participated in 3 years, and 24 percent of the companies are observed twice.

The empirical results are based on 918 observations referring to 356 companies. The number of observations and companies per sector is displayed in Table A3 in the appendix.

Several biases could affect the data analysis. While the population for the questionnaire is all registered companies, the response pattern of companies may be correlated with variables of interest. We check the correlation of ownership and response for 2000. For managerial ownership share below or equal to 50 percent, we find that 35.5 percent of the contacted companies answered to the questionnaire. For managerial ownership share between 51 and 99 percent, the response rate is 34.5 percent and for managerial ownership share of 100 percent, 31.4 percent of the companies answered. We also investigated whether there is a relationship between the average of managerial ownership share and a company's response pattern. Companies that answered only in one year have a mean value of 75 percent. Companies that answered in two years have a mean value of 72 percent, which is also the case for companies that answered in three and four years. This response pattern suggests that there is no relationship between the willingness to answer and the ownership structure. A survivorship bias is present in our sample since we can only observe profitability for companies that still exist. In an annual sample refreshment all companies that have not responded in the six preceding waves are deleted. The last source of bias is the frequency with which Creditreform updates company information. Companies for which there are more inquiries are updated more often. Again, if the updating frequency is not related to our analysis, we face no problem.

2.2 Definition of Variables

The performance measure is based on the responses to the business survey. Participating companies are asked about the development of their profits, sales, prices, demand, and number of employees. They indicate whether these variables have decreased, stayed the same, or increased in the current quarter compared to the previous quarter. For the purpose of this paper the variable of most interest is the assessment of the company's profits.[6] The performance variable **(Performance)** is measured as the difference between the number of times a company has responded that its profits have increased and the number of times a company has reported that its profits have decreased. The exact formula is:

Performance:

of 'increases' per company per year − # of 'decreases' per company per year

The definitions of the variables determining performance are as follows (descriptive statistics are shown in Table 1):

- Ownership share of managers **(Share)** is the sum of ownership shares held by the management of the company. It is measured between 0 and 1.[7]

  The share of companies that are totally owned by managers varies according to sector between 32 percent and 61 percent. The average in the whole sample is 45 percent. Excluding companies that are totally owned by managers the distribution of ownership share is approximately normal, centered around 55 percent and with relatively more observations above the mean. This distribution does not vary substantially across sectors.

- **Number of Owner Managers** denotes the number of managers who hold ownership shares.

[6]The exact question is: in comparison to the last three months, have your profits increased, stayed the same or decreased?

[7]Our considerations always refer to relative ownership share because this is the information included in our data set. The absolute amount, however, may also be important with respect to the incentive effects. A 10 percent share of a Euro 50,000 company, for example, may have different incentive effects than 10 percent in a Euro 5 million company. This difference also depends on the private wealth of the owner-manager. Incentives increase if a higher share of personal net worth is invested in the company (see Mueller, 2004).

- **Number of Outside Owners** denotes the number of outsiders holding equity. The ownership share of each outside owner is *ceteris paribus* smaller, the higher the number of outside owners.
- **Bank** is the number of a company's bank relationships.
- **Ln Employment** denotes the natural logarithm of the number of employees. The companies in our sample are relatively small. 78 percent of the companies have fewer than 50 employees, 14 percent have between 50 and 100 employees and only 9 percent have more than 100 employees.
- **Ln Age** is the natural logarithm of the age of the company in years.

Table 1: Descriptive Statistics

Variable	Mean	Median	Std. Dev.	Minimum	Maximum
Performance	-0.293	0	1.739	-4	4
Share	0.726	0.850	0.309	0.010	1
No. of owner managers	1.664	1	0.965	0	10
No. of outside owners	1.269	1	1.805	0	16
Bank	1.397	1	0.709	1	6
Employment	44.72	24	65.82	1	800
Age	14.98	10	12.95	2	115
West	0.602	1	0.489	0	1

3 Estimation Results

In this section, we present the estimation results on the relationship between company performance and ownership share of managers. Our regression specification includes managerial ownership share up to the third power, the number of managers who hold ownership shares, the number of outside owners, the number of bank relationships, the size and the age of the company. It is possible that the size of the ownership share of managers not only influences company performance but also that company performance has an influence on the size of the ownership share that managers are willing to take. Managers tend to be very well informed about the potential of a company before they decide on the share. This could lead to higher ownership shares in well performing companies and lower ownership shares in badly performing companies, although one also has to consider that equity stakes of well performing companies are in general more expensive. In order to take this reverse causality problem into account, we include lagged values of managerial ownership share into the specification. If the major concern of the endogeneity issue is market timing, for example, then using lags will help. It is conceivable that managers increase their ownership share on private information that company performance will improve.

However, we additionally need to be concerned about a more general form of endogeneity. Some unobserved factor may lead to increases in both ownership and performance. An example of such unobserved factors is changes in corporate governance, including more pressure from outsiders or the arrival of a new manager. Owing to the panel structure of the data set, we are able to control for unobserved time-invariant effects by estimating fixed effects models.[8] Thus, the structure of the data set allows us to address some of the endogeneity concerns.

Table 2, column (1), shows the estimation results for the basic specifications that only addresses the reverse causality problem. This basic specification indicates a cubic relationship between company performance and managerial ownership share.[9]

[8]We also estimated random effects models. In a comparison with the fixed effects method, the random effects method is rejected by the Hausman test. The test is on the null hypothesis that the company-specific effects are uncorrelated with the regressors. For example, the Hausman test of the lagged specification in Table 2, column (2), has been rejected with a p-value of 0.012.

[9]Because it is a priori not clear what functional form is appropriate for managerial ownership, we started with a polynomial including share up to the fourth power. Since the fourth power was not significant, we used a polynomial up to the third power. Here we found the third power to be significant and therefore stayed with this functional form.

In order to take time-invariant unobserved heterogeneity into account, we extent this specification by including various fixed effects. Column (2) shows the results when company fixed effects are included. The company fixed effects control for any permanent differences across companies in unmeasured determinants of company performance. Column (3) additionally takes year fixed effects into account and column (4) also includes year/industry interaction dummies. The year dummies control for the effects of changes over time in unmeasured determinants which are common to all companies, and the year/industry interaction dummies consider differences across industries in the effect of changes over time in unmeasured determinants in company performance.

The inclusion of the fixed effects does not change the qualitative results of the relationship between company performance and managerial ownership but the precision of the coefficients of the additional controls improves considerably.

The functional form of the relationship between managerial ownership share and company performance is very similar for specifications (1) to (4). The functional form plotted in Graph 1 is based on the results of the specification including the most controls, shown in column (4). The positive incentive effect for low values of managerial ownership share is quite pronounced, whereas there is no clear evidence for a negative entrenchment effect for high values of managerial ownership share. We further investigate the relationship by plotting the slope of the function (Graph 2). From the confidence intervals it can be seen for which areas of managerial ownership share the marginal effect is significantly different from zero. The incentive effect has a significant impact on performance up to 40 percent, whereas the marginal effect is never significant for the range of values where the performance function has a negative slope. We therefore do not find a negative entrenchment effect for our sample of private companies.

Companies perform better when fewer managers with ownership stakes are involved. If there are several managers it becomes more difficult to agree on the company strategy and, furthermore, the incentive provided by the managerial ownership share is smaller for each single manager.

Table 2: Managerial Ownership and Company Performance

Dep. Variable: Performance					
	(1)	(2)	(3)	(4)	(5)
Share (lag)	5.45**	15.13***	15.74***	16.66***	26.53***
	(2.49)	(5.20)	(5.24)	(5.67)	(8.19)
Share squared (lag)	-10.42**	-22.56**	-23.57**	-25.53**	-48.04***
	(5.31)	(10.99)	(10.92)	(11.49)	(16.31)
Share cubed (lag)	5.60*	10.98	11.51*	12.74*	26.31***
	(3.18)	(6.75)	(6.67)	(6.93)	(9.61)
No. of owner managers (lag)	0.09	-0.60***	-0.62***	-0.59***	-0.44*
	(0.07)	(0.20)	(0.21)	(0.21)	(0.26)
No. of outside owners	-0.01	0.19**	0.20**	0.18**	0.04
	(0.04)	(0.09)	(0.09)	(0.09)	(0.10)
Bank	-0.06	-0.16	-0.25*	-0.28**	-0.02
	(0.10)	(0.12)	(0.13)	(0.14)	(0.13)
Ln employment	0.08	-0.34	-0.30	-0.16	-0.41
	(0.06)	(0.22)	(0.22)	(0.25)	(0.33)
Ln age	0.05	-0.95	-2.45*	-3.29**	-1.68
	(0.10)	(0.64)	(1.39)	(1.47)	(1.31)
Performance (lag)					0.14**
					(0.06)
Company fixed effects	No	Yes	Yes	Yes	Yes
Year fixed effects	No	No	Yes	Yes	Yes
Year industry interaction	No	No	No	Yes	Yes
No. of obs. (companies):	918 (356)	918 (356)	918 (356)	918 (356)	580 (361)
F-Test:	1.23	4.10***	3.42***	1.79***	
(degrees of freedom)	(8, 909)	(8, 554)	(10, 552)	(28, 534)	

Note: ***,**,*=significant on the 1, 5 and 10 percent level. Robust standard errors are in parentheses. Column (1) shows the results of an OLS estimation, in column (2)-(4) various fixed effects are successively included into the specification. Column (5) shows Arellano-Bond GMM estimation results.

With regard to the effect of outside owners we find that performance is increasing in the number of outside owners. This finding is consistent with the absence of a significant entrenchment effect, however, it is in contrast to some part of the corporate governance literature. This literature indicates the importance of monitoring activities, best performed by concentrated ownership. In contrast, widespread ownership leads to a free rider problem since there are only weak incentives for individual investors to seek information about the managers' work. We, in turn, do not find that owners with a large share would be more effective in monitoring. For the interpretation of this result it is also important to consider that family ownership is widespread in small and medium-sized companies. It is very likely that family members who are not part of the management are not so well informed about the business. If those family members have a high ownership share, they can easily influence business decisions which may be harmful.[10]

Monitoring by banks has a positive effect. Theory does not give an unambiguous prediction about the sign of this variable. On the one hand, a negative influence on performance is to be expected. If a company has more bank relationships, each bank will *ceteris paribus* have a smaller loan volume to the company and therefore less incentives to monitor. On the other hand, a positive influence on performance is also possible because companies with few bank relationships may have the problem that the banks try to hold them up. The ex-post information monopoly provides banks with a substantial bargaining power (Sharpe, 1990; Rajan, 1992). Banks, therefore, may be able to charge above-market loan rates. Our finding is that the more bank relationships a company has, the worse its performance. This is compatible with the argument that banks with a high loan volume to one company will spend more resources on monitoring than banks with a small loan volume. But it could also be that companies with a poor performance need to seek loans from several banks because no bank wants to make a big commitment. It is not possible to differentiate between these two arguments.[11]

Company size in terms of the natural logarithm of the number of employees does not have a significant effect on company performance. Younger companies do, however, show a better performance than older companies.

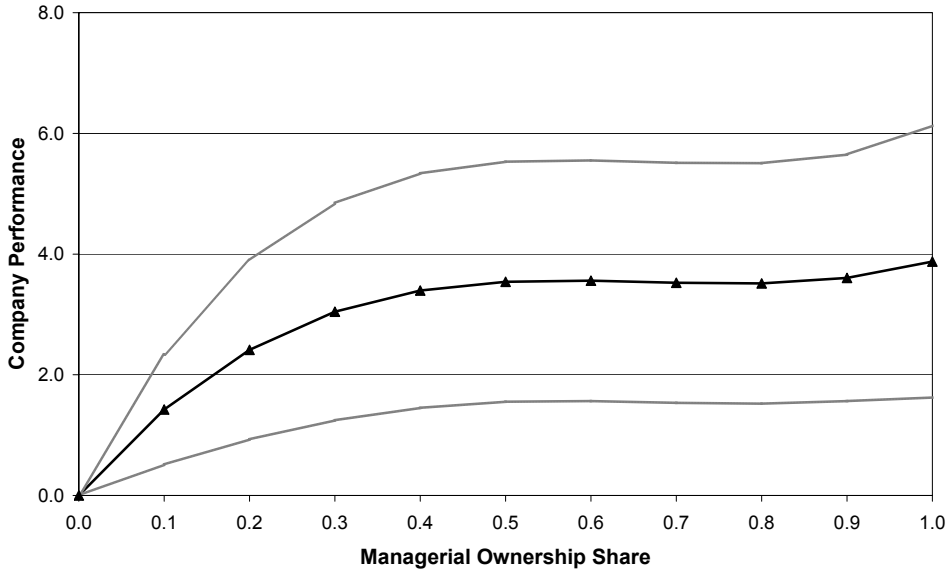
[10]This rather pessimistic view about the business acumen of family members is supported by other empirical analyses, see for example Morck et al. (2000).

[11]This result is in line with previous empirical findings by Petersen and Rajan (1994), who find that companies that borrow from multiple banks are charged a significantly higher interest rate. In addition, concentrating on few bank relationships has a positive effect on the availability of loans.

Although we regress the change in profits on the level of managerial ownership share our results do not imply that better companies will grow faster than weaker companies for ever. Nickell et al. (1997) find that competitive pressure has a positive influence on productivity growth. Companies that grow faster build up market share over time, but then they often lose their power to innovate and hence their productivity declines.

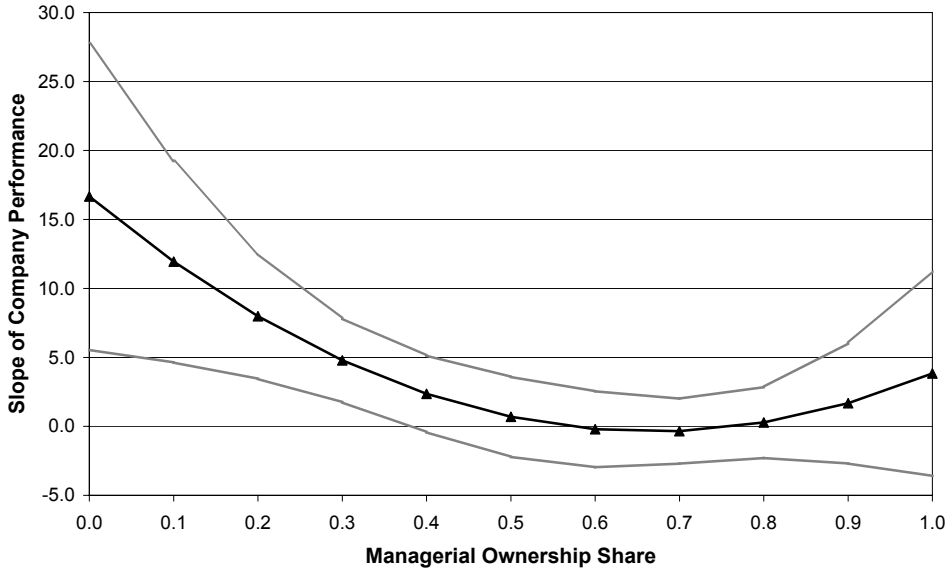
We also investigate the dynamic structure of the specification applying an Arellano-Bond GMM estimator. The results are shown in the last column of Table 2. Lagged company performance has a positive significant influence on current performance, indicating persistence. However, with a value of 0.14 the coefficient is relatively small. This additional specification does not alter our previous findings regarding company performance and managerial ownership, but the significance of the additional controls declines.

Graph 1: The Influence of Managerial Ownership Share on Performance



Note: 95 percent confidence intervals are indicated. This graph is based on specification (4) shown in Table 2.

Graph 2: Slope of the Performance Function



Note: 95 percent confidence intervals are indicated. This graph is based on specification (4) shown in Table 2.

4 Conclusion

In this paper, we investigate the relationship between the ownership share of managers and company performance for German small and medium-sized private companies. Up to now, most studies on managerial ownership have concentrated on companies that are listed on the stock market. However, the distortions caused by the separation of ownership and control may also affect private companies with limited liability. Since this company type is the most important legal form in Germany, it is crucial to have a good understanding of the basic corporate governance mechanisms for these companies as well.

We use an unbalanced panel data set of private companies with limited liability in the German business-related service sector. The main conclusion from our analysis is that ownership does influence company performance. We find a positive relationship between managerial ownership share and company performance up to around 40 percent owing to the incentive effect. However, we do not find a significant entrenchment effect. This result is in contrast to previous findings for public companies that found evidence for the entrenchment effect. The discrepancy in results can be interpreted in terms of structural differences between private and public companies. The ownership share of managers in private companies is generally quite high. At levels at which they could become entrenched with respect to outside owners, they already bear a large proportion of the costs. The incentive to maximize company value therefore dominates entrenchment considerations.

5 Appendix

Table A1: Turnover Accounted for by Companies With Different Legal Form (in percent of overall turnover)

Type of legal form	1972	1986	1990	1998	2000
Sole proprietor	23.8	15.4	14.9	13.3	12.3
OHG	-	6.8	6.8	6.1	6.1
KG	-	24.0	23.9	22.4	22.5
GmbH	17.1	25.5	29.1	32.0	33.6
AG	19.1	21.2	20.2	21.5	20.3
Other	7.9	7.2	5.1	4.7	5.3

Note: A sole proprietor is a single entrepreneur with unlimited liability. The OHG is a private company that has several owners with unlimited liability. The KG has at least one owner with unlimited liability and at least one owner with limited liability. GmbHs have one or more owners with limited liability. AGs are companies that are allowed to issue shares. They may or may not be listed on a stock market. Other includes state-owned enterprises and cooperatives. This information is taken from Statistisches Bundesamt, 1972 to 2000.

Table A2: The Business-Related Service Sector

Sector	WZ 93
Computer Services	72100, 72201-02, 72301-04, 72601-02, 72400
Tax Consultancy & Accounting	74123, 74127, 74121-22
Management Consultancy	74131-32, 74141-42
Architecture	74201-04
Technical Advice & Planning	74205-09, 74301-04
Advertising	74844, 74401-02
Vehicle Rental	71100, 71210
Machine Rental	45500, 71320, 71330
Cargo Handling & Storage	63121, 63403, 63401
Waste and Sewage Disposal	90001-07

Note: The WZ93 industrial classification code is a classification system developed by the German Federal Statistical Office in accordance with the European NACE Rev. 1 standard that classifies economic units according to their sector of concentration.

Table A3: Distribution of Observations and Number of Companies

Sector	No. of Observations	No. of Companies
Computer Services	111	44
Tax Consultancy & Accounting	76	29
Management Consultancy	81	31
Architecture	133	52
Technical Advice & Planning	186	69
Advertising	61	27
Vehicle Rental	73	29
Machine Rental	66	25
Cargo Handling & Storage	66	25
Waste and Sewage Disposal	65	25
Total	918	356

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