STOCKHOLM SCHOOL OF ECONOMICS

Bachelor Thesis in Finance, Spring 2010

Private Ownership and Stock Performance

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Abstract

We examine if stocks of firms, in which one private owner owns a large fraction of the company's outstanding shares, generate positive abnormal returns for the shareholders. Our main results cannot show that this is true for all firms. However, secondary tests indicate that there is a relationship, at least for smaller firms. The outcome shows that these firms outperform the market significantly after controlling for well-known risk factors. The abnormal returns that we do find might be a reason why investors choose to invest a large fraction of his or her personal wealth in one firm and consequently pay the price of forgone diversification.

Keywords: Private Ownership, Stock Performance and large private owners

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Date: May 27 08:00-13:00

Location: Room 730

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1. Introduction

In 4 out of 10 of our sample firms a private owner owns more than 10 percent of the company's outstanding shares.[c] This means that, in most of these cases, a large fraction of a person's wealth is invested in one company. Hence, a relevant question arises. Why would anybody be willing to pay the price in terms of forgone diversification (Lambert, Larcker and Verrecchia, 1991 and Kahl, Liu and Longstaff, 2003)? We believe the reason for this is that, in the long run, it's a good investment. The economic reasoning is that we believe that when one person has a great fraction of his or her wealth invested in one company, the incentives are strong to try to influence the company in such ways that it increases stock returns and minimizes stock risk.

Principal agent problem arises since the shareholders of a firm are not usually managers in the firm they own (Jensen and Meckling, 1976). Often, the owners (principal) employ a manager (agent) to work for their interests which also gives the manager better insight and information about actions and consequences for the firm. This often lead to moral hazard problems since the manager has different incentives compared to the owner's, and therefore might act in a way that is good for him personally, rather than for the shareholders. For example, the incentives to exert effort might be small for the manager if he only gets a constant paycheck. We believe that for a person who has a large fraction of his wealth invested in one firm, this is a key issue that he will try to deal with and he has strong incentives to minimize the principal agent problem as well as the moral hazard problem. Off course, the incentives for an owner to try to minimize the problem are ultimately determined by the absolute value of his shareholdings in the firm, as a fraction of his total wealth. However, we do not have any information about the owner's personal wealth and are therefore forced to make the reasonable assumption that if he owns a large fraction of a listed firm, this makes up for a large fraction of his or her wealth.

One way for an owner to cope with the principal agent problem is by working within the firm. Through this way, the principal agent problem diminishes as long as the stock returns are significantly larger than the person's earnings from being a manager. Not only is the principal agent problem vanished, but also the moral hazard problem. Now, the person can help increase stock returns by exerting effort. Jensen and Murphy (1990) suggest that owning shares in the company where you are working gives you the right incentives. In those cases where the large private owner also works in the company it might be a reason for abnormal stock returns.

[c] The fraction is based upon data from January 2004. For further details, see "Table [1]".

Lilienfeld-Toal and Ruenzi (2008) showed that firms with high managerial ownership generate large positive abnormal returns. The economic reasoning behind their paper is much like the one in our paper, and for those firms where the owner also works as a manager in the firm, the companies are corresponding, however, on different markets; the US and Swedish equity markets respectively.

Another way to confirm that the manager's goals are in line with the owner's is by making sure that the corporate governance is working effectively. Corporate governance is the primary instrument owners can use to influence their firm if they do not work within it. The owner has strong incentives to make sure corporate governance work. In absence of corporate governance, our economic reasoning would not make any sense in those cases where the large private shareholder does not work within the firm. This means that our thesis also relates to papers on corporate governance and its role in stock performance. Gompers, Ishii and Metrick (2003) created measures of good corporate governance and showed the correlation between these measures and stock performance.

A firm in which the founder is the CEO significantly outperforms the market (Fahlenbrach 2008). In many of our companies, the largest private owner is also the founder of the company and one could consider the founder to be more attached to the firm and to exert effort for long term improvement in stock performance. The same argumentation applies for very large owners, even though they did not found the firm, since it is tough to reallocate their wealth into different investments. Hence, they are forced to exert effort for long term growth in stock returns.

We want to test if the reason why a person is willing to invest a large fraction of his or her wealth in one firm is because it is a good investment. Therefore, we empirically examine the following question: do stocks of firms, in which one private owner owns a large fraction of the company's outstanding shares, generate positive abnormal returns for the shareholders?

The above question also constitutes the purpose of our study which explicitly is to see if stocks of firms, in which one private owner owns a large fraction of the company's outstanding shares, can persistently deliver positive abnormal returns. To the best of our knowledge, we are the first to test this by using the Carhart 4-factor model (Carhart, 1997) when finding significant alphas, for firms with large private owners, in a regression analysis. Neither do we know of anyone who has used a comparable method to test this explanation. This means that we correct for three of the equity markets most well known anomalies when comparing stock performances. These are the size-factor, the book-to-market factor and the momentum-factor.

We examine the question by analyzing the returns of the majority of Swedish listed firms between 2000 and 2008. The results from the main analysis cannot show the earlier described relationship between the private owner's fraction of the firm and the level of the firm's stock returns. However, some of our secondary tests indicate the opposite. For example, one could have made abnormal returns, during the sample period, of over 20 percent if one would have invested in an equally weighted portfolio consisting of the firms where the largest shareholder holds more than 20 percent of the firm's equity.[d]

The main contribution of this paper is that we for the first time, to the best of our knowledge, have tested for abnormal returns among stocks of firms, in which one private owner owns a large fraction of the company's outstanding shares. As far as we know, this is the first time this has been tested using the Carhart 4-factor model (Carhart, 1997) on Swedish equity. We can also show that equally weighted portfolios, consisting of stocks with strong private owners, generate positive abnormal returns for the shareholders. Consequently, this paper helps to create further understanding of large private owner's and the active ownership's role in a firm's stock performance. These results can serve as valuable advice for investors in the Swedish equity market. It will also be a contribution in terms of additional understanding for risk-adjusted alphas of Swedish listed firms.

A. Outline

The remainder of this paper is organized as follows. In section 2 we discuss data and methodology. In section 3 we present, and briefly discuss the results from the main analysis. Section 4 presents a few robustness tests and respective results and finally, section 5 is a recapitulation and conclusion.

2. Data & Methodology

The methodology used in this paper is based on the methodology in "CEO ownership and stock market performance" by Ulf von Lilienfeld-Toal and Stefan Ruenzi (2008).

A. Data

The primary data source for this paper is *Datastream* by *Thomson Financial*, from where information concerning all available Swedish listed stocks is retrieved. The most important information collected was the market value for mentioned firms on a monthly basis. This enabled the possibility to calculate monthly returns ($R_{t,n}$) for all stocks (n) respectively.

[d] For further information about these test results, see "Table [7]"

$$R_{t,n} = (MV_{t,n} - MV_{t-1,n})/MV_{t-1,n}$$

(1)

In the above formula, $MV_{t,n}$ is the total market value for stock n in month t. In *Datastream* the market value is called *MV*[e] and is adjusted for dividends and other capital changes. In those cases where the firm has two or more types of stocks (e.g. A and B stocks) the total market value was calculated as the sum of the market value of each stock type.

Owner information about the firms was gathered from *SIS Ägarservice*. From there, the largest private shareholder for each firm as well as what fraction of the firm this person holds, could be determined. The relevant information was then imported into our database. From *SIS Ägarservice*, ownership information for companies listed on Large Cap, Mid Cap, Small Cap and NGM was collected.

+ + + Please insert TABLE [1] here + + +

With regards to the firms with ownership larger than 10, 20, 30 and 50 percent respectively, one can see that the portfolios' fractions of the total sample is nearly constant over time, with one exception. Observing the portfolio with a 10 percent cut-off rate, this portfolio's fraction of the total sample, ranges from 30 percent in year 2000 to 46 percent in 2008, implying a growth of 53 percent during the period. Finally, the total number of listed stocks on the Large Cap, Mid Cap, Small Cap and NGM has grown by 47 percent from 2000 to 2008. Since our sample is survivorship biased, it does not include companies that have been delisted during the period.

When determining the largest private owner we defined what should be considered as a private owner. This was made as simple as possible by only counting shares that were owned by people personally or through companies that clearly was their privately owned holding company.

Further, the monthly Carhart factors were generously provided by Philip Emtemark and Danny Liu which will be further discussed under "Factor model". The factors were calculated on firms listed as "alive" on *Datastream* as of April 10th 2009.[f] The main difference in stocks that are included when

[e] "MV" in *Datastream* is adjusted for dividends and other capital changes.
[f] For further details on how the factors were calculated see "*Performance Persistence, Fund characteristics and Initial Fund Performance in Swedish Mutual Funds" by* P. Emtemark and D. Liu 2009

calculating the factors, but that we were unable to include in the sample, are the stocks listed on First North and Aktietorget.

Moreover, the same proxy for the risk-free interest rate as P. Emtemark and D. Liu did in their paper "Performance Persistence, Fund characteristics and Initial Fund Performance in Swedish Mutual Funds" (2009) was used. This means that the risk-free rate proxy used is the STIBOR-30 interbank rate. STIBOR is calculated as an average of several interest rates that banks offer when borrowing form each other.[g] The STIBOR-30 is then compounded on a monthly basis.

As a proxy for the market return the OMXS indices was used, since it is a value-weighted index of all firms on Large Cap, Mid Cap and Small Cap. It is adjusted for dividends and other capital changes and the only difference from our sample is the firms listed on the NGM equity list and single observations that were omitted because of missing values. Since the ownership information was only available for firms listed on Large Cap, Mid Cap, Small Cap and NGM, these were chosen as our sample of firms. The Carhart factors were calculated for each month ranging from December 1999 to December 2008. We made this our sample time period. It resulted in a total of 25848 firm specific return observations.

Both our sample firms and the factors are subject to survivorship bias. This means that only firms that were listed as "alive", in *Datastream*, May 10th 2010 are calculated for in our sample. The Carhart factors are also calculated on a survivorship biased sample, thus, a valuable analysis can still be made. The biased portfolio returns are compared with survivorship biased stock returns. The only difference is that firms that have been delisted between April 19th 2009, when the factors were calculated, and May 10th 2010, when we created our sample, will not be calculated for in our sample. It means that our sample is slightly more biased than the sample that was used when calculating the Carhart factors.

B. Construction of portfolios

The portfolios are constructed on ownership data to test whether or not firms, in which one private owner owns a large fraction of the company's outstanding shares, can persistently deliver positive excess returns. The sample firms are divided into portfolios after how large fraction of the firm the

[g] For further details on how the STIBOR rates are calculated see:
http://www.riksbank.se/templates/stat.aspx?id=16738

largest private shareholder owns. Then, monthly value-weighted portfolios returns are calculated respectively using:

$$R_{i,t} = \sum_{n=1}^{N} w_{t,n} * R_{n,t}$$

(2)

where the dependent variable is the portfolio's value-weighted return. $w_{t,n}$ is the weight accounted for in the portfolio, for stock n in month t. Lastly, $R_{n,t}$ is the monthly return of stock n in month t.

The cut-off rates used for the portfolios are 10, 20, 30 and 50 percent of the firm's total market value.[h] The portfolios are rebalanced at the end of each year and ownership information from t-1 is used to make sure that the information was publicly available. For example, a firm qualifies to be in a portfolio year t if the largest private owner's fraction of the firm was greater that the threshold for that portfolio, at the end of year $t-1$.

C. Factor model

When evaluating portfolio returns, the Carhart 4-factor model (1997) is used to determine if they deliver abnormal returns. The model adjusts for some of the most well-known systematic risk factors.

$$R_{i,t} - R_{b,t} = \alpha_i + \beta_{i,M} * (R_{M,t} - R_{F,t}) + \beta_{i,SMB} * SMB_{M,t} + \beta_{i,HML} * HML_{M,t} + \beta_{i,WML} * WML_{M,t} + \varepsilon_{i,m}$$

(3)

In the factor model above the dependent variable $R_{i,m} - R_{b,m}$ is the portfolio i return in month t less a benchmark for the market in month t. In the analysis, the risk-free interest rate is used as a benchmark. Basically it means that the dependent variable in the model is the portfolio's excess return over the risk-free rate of return. When recalling "Model (1)" and "Model (2)" the excess return can be expressed though the following model:

$$R_{i,t} - R_{b,t} = \sum_{n=1}^{N} (w_{t,n} * \frac{MV_{t,n} - MV_{t-1,n}}{MV_{t-1,n}}) - r_{f,t}$$

(4)

[h] For firms with more than one type of shares we use the fraction of the shares with most voting rights.

In "Model (3)" the factor named SMB_t (Fama and French, 1993) represents the received return, given that one would hold a value weighted portfolio consisting of a long position in the 50 percent smallest firms, and a value weighted portfolio consisting of a short position in the 50 percent largest firms.[i] The factor named HML_t (Fama and French, 1993) represents the received return, given that one would hold a long position in a value weighted portfolio consisting of the 30 percent stocks with the highest book-to-market value, at a specific time, and a short position in a value weighted portfolio consisting of the 30 percent stocks with the lowest book-to-market value, at a specific time. The factor WML_t (Jegadeesh and Titman, 1993) represents the received return, given that one would hold a long position in a value weighted portfolio consisting of the 30 percent stocks that are best performing the previous 11 months, and a short position in a value weighted portfolio consisting of the 30 percent stocks that are worst performing in the previous 11 months. t represents month in all of the above factors.

As discussed earlier, the factors SMB_t, HML_t and WML_t are based on a different sample than the sample used to compose the portfolios.[j] Thus, initially we have to make sure that "Model (3)" and the factors used can price the sample of stocks correctly. This is done by calculating the returns of a value-weighted portfolio consisting of all the stocks in the sample. We then regress the portfolio's excess returns, over the risk-free rate, on the factors in the model. If the model correctly prices our sample, the intercept $\propto_i$ in the model, should not be statistically significant different from zero. The results from the regression are presented in "Table [2]" below.

+ + + Please insert TABLE [2] here + + +

From the table we read that $\propto_i$ is not significantly different from zero. This means a value-weighted portfolio containing all of the sample stocks yields no abnormal returns on the four factors. It can be established that "Model (3)" accounts for the relevant risk factors and that the model and the factors can be used when evaluating the private ownership portfolios.

[i] The size of the firms is with regards to total firm capitalization.
[j] The difference in stock sample is primarily stocks that have been delisted between April 2009 and May 2010 as well as stocks on First North and Aktietorget.

3. Results

We examine if there is a relationship between stock performance and the magnitude of the largest private shareholder's fraction of the firms equity. To do this, the methodology described above, where we regress the value-weighted portfolios on the Carhart 4-factor model (Carhart, 1997), is used. The portfolios are constructed for different cut-off rates on the largest private owner's fraction of the firm.

The estimation results received when conducting tests for abnormal returns on different portfolios are presented in "Table [3]" below. Again, when checking for abnormal returns, the constant in the model is observed. In "Model (3)" the constant is named α_i and need to be statistically different from zero to establish that the portfolio delivers abnormal returns.

+ + + Please insert TABLE [3] here + + +

In the table it can be observed that alpha is not statistically significant for any of the portfolios. It means that a relationship between stock performance and private ownership in the above described sense cannot be established. All of the other factors are significantly different from zero for all of the different portfolios with different cut-off rates, which means that they have explanatory value when pricing the portfolios.

These estimations suggest that no abnormal returns are generated by investing in either of these portfolios during the sample period. Further on in the thesis, a discussion regarding potential explanations and what conclusions this can bring us to will be conducted. First, some robustness tests are made to make sure that the results are in fact correct.

4. Robustness checks and further discussion

The above results can be seen as surprising and since we strongly believe in our economic reasoning, in the "Introduction" section of this paper, we want to make sure that we could not reach other results by conducting different tests.

A. Difference in portfolios

The first test performed is a test where we go long in the stocks that have large private owners and short in the rest of the firms in our sample. This means that we test four portfolios, one for each of the cut-off rates, consisting of a long position in the companies that have private owners, with fractions of the company that is above the threshold, and a short position in the companies below the cut-off rates. Practically, what is done is that we re-estimate "Model (3)" and set $R_{b,t}$ to the returns from going short in a value-weighted portfolio consisting of all the stocks below the cut-off rates respectively. As before, we test these portfolios on the factors in "Model (3)".

+ + + Please insert TABLE [4] here + + +

As we can see in "Table [4]" the alpha is not statistically significant for any of the portfolios except for the 10 percent cut-off rate. For three of the portfolios the test confirms our previous results but the results for the 10 percent cut-off rate indicates that one could have made abnormal returns of 1,2 percent per month by applying this portfolio strategy during the sample period.

The results for the 10 percent long-short portfolio somewhat opposes our previous results and to further investigate the founding we compose a portfolio consisting of the firms that have private owners that holds between 10 and 20 percent of the firms stocks. The portfolio is tested by applying the methodology from our main test. The test outcome is presented below in "Table [5]" and shows that we can not establish a statistically significant alpha for this portfolio.

+ + + Please insert TABLE [5] here + + +

B. Equally weighted portfolio

In the main analysis we have used value-weighted portfolios to make sure that the portfolio returns were not driven by extraordinary returns from some small firms. It means that in theory it can be one company that has a weight of 99 percent ($w_{t,n}$=0,99). In this case, all the other companies would

only account for 1 percent altogether. Basically this would mean that all we would do would be to test for abnormal returns in one company, with a tiny influence from a few other companies.

Looking more closely on our sample and the weights of the largest companies we see that a few companies have influenced the portfolio returns to a large extent. A breakdown of the three largest companies influence on the portfolios is presented in "Table [6]" below.[k]

+ + + Please insert TABLE [6] here + + +

For this test we construct portfolios that are equally weighted. This is a portfolio strategy where one would invest the same amount of money in each stock within the portfolio. The stocks in the portfolios are still determined from the cut-off rates. But now, every stock in the portfolio is weighted equally when calculating the portfolio returns. Other than the differences in calculating the portfolio returns, we use the same methodology as in the main test. Once again we are looking for significant values of alpha. The results are presented in "Table [7]" below.

+ + + Please insert TABLE [7] here + + +

We can see that we get significant alphas for all portfolios except for the 50 percent portfolio. For the portfolio with a cut-off rate of 10 percent we find abnormal returns of 2.7 percent per month on a 5 percent significance level. We find the most statistically significant alpha for the portfolio with a 20 percent cut-off rate and it is on the 1 percent significance level. The monthly abnormal returns for the portfolio are 1.3 percent. For the portfolio with a 30 percent cut-off rate we find abnormal returns of 1.3 percent and they are statistically significant on a 5 percent level.

These results confirm our suspicion that the results were driven by a few large companies. They also tell us that if one would have invested in the equally weighted portfolio with the 20 percent cut-off rate, during the sample period, one would have made abnormal returns of 1.3 percent per month.

[k] The size of the firms is based on their total market value in June 2004.

C. Value-weighted portfolios excluding H&M

Although our results for the equally weighted portfolios suggested that there is a positive relationship between large private owners and stock returns we want to perform one more test. We chose to construct value-weighted portfolios for our main test because we wanted to make sure that the portfolio returns would not be driven by some small firms with abnormal returns. When looking closely on our value-weighted portfolios we realize that H&M constitutes a large fraction of the portfolio's total market value. Hence, we create value-weighted portfolios excluding the returns from H&M. Thereafter we use the same methodology as in our main test. The estimation results are presented in "Table [8]".

+ + + Please insert TABLE [8] here + + +

As we can see we get a vague indication of abnormal returns for the 10 and 20 percent portfolios but they are only significant on a 14 and 15 percent significance level respectively.

5. Recapitulation and Conclusion

In our main analysis we could not show statistically significant alphas which means that we could not prove our theory about why investors choose to invest a large fraction of his or her personal wealth in one company and consequently pay the price of absence of diversification. This was further enhanced in our test of long-short portfolios with an exception for the 10 percent portfolio. Although we did find a statistically significant alpha for the 10 percent long-short portfolio we could not reinforce this when testing the long only 10 to 20 percent portfolio.

Realizing that the returns in the value-weighted portfolios were strongly driven by a few companies we constructed equally weighted portfolios that we tested on the same model and found statistically and economically significant abnormal returns for all four portfolios, except for the 50 percent portfolio. Though, we know that these abnormal returns can be driven by extraordinary returns from a few small firms and therefore we conducted a final test with the same portfolios as in our main test except this time we excluded H&M. When we tested these portfolios on our model we received vague alphas indicating abnormal returns for the 10 and 20 percent portfolios but these were only significant on a 15 percent significance level.

Altogether, we found that equally weighted portfolios, consisting of firms that have a large private owner, deliver statistical significant abnormal returns. At the same time, we cannot show that the

value-weighted portfolios, consisting of the same firms, deliver abnormal returns. These results are somewhat contradicting and we see two main reasons for this outcome. The first one essentially invalidates our explanation, for the puzzling investment strategy of investing a large fraction of your wealth in one company. The other one tells us the opposite.

The first explanation that seems reasonable to us is that the high abnormal returns for the equally weighted portfolios are driven by extra ordinary positive returns from a few small firms. This would mean that if you did the same test but without these firms we would not be able to show significant alphas. If this was the case we would not have any indication of a relationship between large private owners and stock return, at least not in the sense we have discussed.

The second explanation is the one that we think sounds most logical is that the ability decreases quickly with the size of the firm. After all the owner is only one person and it's hard to influence the company to fulfill your needs. As we discussed in our economic reasoning, under "Introduction", we believe that there are two main ways to influence the firm you own and minimize the principal agent problems. The two ways we presented were either by working in the firm or by making sure that the corporate governance was working correctly. The incentives to influence the firm are stronger for a person that owns 10 percent of large firm than for a person that owns the same percentage of a small firm. [1] This will not matter if the ability to influence the company diminishes when the firm gets larger.

The implications of this explanation is that stocks of firms, in which one private owner owns a large fraction of the company's outstanding shares, can persistently deliver positive abnormal returns as long as the companies are relatively small. If this explanation is valid, the reason why we did not get any significant alphas in our main test would be the following. The large companies are the main drivers of returns in the value-weighted portfolios and the ability to influence the company you own is reduced by the size of the firm. With that in mind, it is not surprising that we did not get any statistically significant alphas in our main analysis.

However, if the latter explanation is accurate, part of the question, that is the reason for this thesis, remains. Why would anybody be willing to pay this price in terms of forgone diversification by investing, a great fraction of their wealth, in *large* firms?

[1]The strength of the incentives to exert effort is ultimately determined by the absolute value of the investment in respect to the person's wealth.

6. Further research

Since we reach two different explanations that oppose each other it would be very interesting to see if one could invalidate the explanation that says that the abnormal returns for the equally weighted portfolios are because of a few small firms with extra ordinary returns. If one could nullify that explanation, it would further reinforce the latter explanation of the two discussed above. The way to do this would be to construct equally weighted portfolios for the cut-off rates. Although this time one should exclude the stocks that have performed outstanding during the period.

It would also be interesting to perform the same tests, as in our thesis, but for a sample that is not survivorship biased. Since we found some firms that persistently deliver abnormal returns, it would be good to see if the large private owners also raise the risk in the firm. This would lead to abnormal returns for some firms and bankruptcy for others. The latter firms are not included in our sample and might affect the alphas.

If the firms, that have large private owners, deliver abnormal returns, then why is this not priced in the market? This is a question that would be interesting to further investigate. Other topics that relate to our thesis is the following. It would be interesting to see if only the firms, in which the owner works in the firm, deliver abnormal returns. It would also be exciting to see if the corporate governance works better in firms that have one large private owner. The economic reasoning this is that these owners have strong incentives to make it work

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Table [1]: Private ownership firms

This table presents the yearly total number of sample firms, as well as the number of sample firms for each portfolio between the years of 2000-2008. The portfolios are constructed based on the fraction of shares controlled by the largest private shareholder. "Total", in Table 1, consists of the number of listed companies on the Large Cap, Mid Cap, Small Cap and NGM for the specified year. The columns ≥10%, ≥20%, ≥30% and ≥50% each implies the number of sample firms with a private owner controlling equal or more than the cut off.

Year Shown	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Total	195	214	225	223	235	243	256	277	286
≥10%	58	52	74	84	94	106	113	123	132
≥20%	50	40	64	68	72	71	75	81	85
≥30%	37	27	43	48	49	47	46	48	52
≥50%	20	12	21	22	22	19	20	22	23

Table [2]: Results for entire sample

In this table, the estimation results for the total sample's returns, using the Carhart 4-factor model (1997), are described. The sample period is January 2000 to December 2008. Alphas are on a monthly basis and standard errors are in parentheses. The adjusted R^2 and the number of months used to estimate the model are given in the last two columns. Significance at the level of one, five and ten percent are indicated by ***, ** and *, respectively.

Portfolio	**α**	**RMRF**	**SMB**	**HML**	**Mom.**	**Adj. R**	**Obs.**
Sample	0.000	1.039***	0.008	0.029	0.021**	97.63%	108
	(0.001)	(0.023)	(0.018)	(0.021)	(0.010)		

Table [3]: Value-weighted private ownership portfolios

This table describes the outcome of the Carhart (1997) 4-factor model ("Model (3)") for the value-weighted private ownership portfolios. Portfolios are constructed based on the largest private owner's fraction of the firm's outstanding equity. The cut-off rates for the portfolios are 10, 20, 30, and 50 percent respectively. The sample period is January 2000 to December 2008. Alphas are on a monthly basis and standard errors are in parentheses. The adjusted R^2 and the number of months used to estimate the model are given in the last two columns. Significance at the level of one, five and ten percent are indicated by ***, ** and *, respectively.

Portfolio	**α**	**RMRF**	**SMB**	**HML**	**Mom.**	**Adj. R**	**Obs.**
≥10%	0.000	0.788***	- 0.103*	0.203***	0.078**	76.54%	108
	(0.003)	(0.045)	(0.058)	(0.058)	(0.045)		
≥20%	0.000	0.761***	- 0.129**	0.216***	0.081**	74.50%	108
	(0.003)	(0.048)	(0.057)	(0.059)	(0.028)		
≥30%	0.000	0.755***	- 0.149**	0.232***	0.086*	70.58%	108
	(0.003)	(0.053)	(0.061)	(0.063)	(0.031)		
≥50%	-0.002	0.695***	- 0.225*	0.460**	0.156**	48.17%	108
	(0.005)	(0.094)	(0.124)	(0.155)	(0.075)		

Table [4]: Difference in portfolios – results

This table describes the outcome of the Carhart (1997) 4-factor model ("Model (3)") for four portfolios, one for each of the cut-off rates, that takes a long position in the companies that have private owners with fractions of the company that is above the threshold, and a takes a short position in the companies below the cut-off rates. The cut-off rates for the portfolios are 10, 20, 30, and 50 percent respectively. The sample period is January 2000 to December 2008. Alphas are on a monthly basis and standard errors are in parentheses. The number of months used to estimate the model is given in the last row. Significance at the level of one, five and ten percent are indicated by ***, ** and *, respectively.

Portfolio	**≥10%**	**≥20%**	**≥30%**	**≥50%**
α	0.012**	0.000	0.001	-0.002
	(0.005)	(0.003)	(0.004)	(0.005)
Obs.	108	108	108	108

Table [5]: 10 to 20 percent ownership – results

This table describes the outcome of the Carhart (1997) 4-factor model ("Model (3)") for the value-weighted private ownership portfolio consisting of the firms that have a private owner owning between 10 and 20 percent of the firm's outstanding shares. The sample period is January 2000 to December 2008. The alpha is on a monthly basis and the standard error is in the parenthesis. Significance at the level of one, five and ten percent are indicated by ***, ** and *, respectively.

Portfolio	**≥10%≤20%**
α	0.05
	(0.006)
Obs.	108

Table [6]: 3 largest companies' fraction of the portfolios' total market value

This table shows the 3 largest companies' consolidated market values' fraction of the value-weighted portfolios' total market value, for each portfolio respectively. The fractions are based on market values from June 2004, which is the median month of our sample. The cut-off rates for the portfolios are 10, 20, 30, and 50 percent respectively.

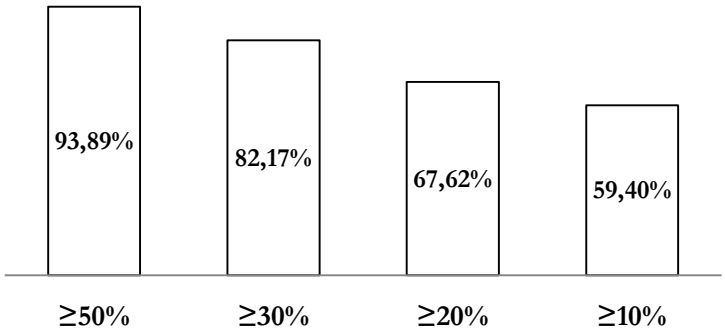

Table [7]: Equally weighted private ownership portfolios

This table describes the outcome of the Carhart (1997) 4-factor model ("Model (3)") for the equally weighted private ownership portfolios. Portfolios are constructed based on the largest private owner's fraction of the firm's outstanding equity. The cut-off rates for the portfolios are 10, 20, 30, and 50 percent respectively. The sample period is January 2000 to December 2008. Alphas are on a monthly basis and standard errors are in parentheses. The adjusted R^2 and the number of months used to estimate the model are given in the last two columns. Significance at the level of one, five and ten percent are indicated by ***, ** and *, respectively.

Portfolio	α	RMRF	SMB	HML	Mom.	Adj. R	Obs.
≥10%	0.027**	1.083***	-0.166	-0.056	-0.002	0.3302	108
	(0.011)	(0.132)	(0.105)	(0.124)	(0.050)		
≥20%	0.013***	0.913***	- 0.158*	0.073	0.054**	0.7275	108
	(0.004)	(0.050)	(0.094)	(0.072)	(0.026)		
≥30%	0.013**	0.915***	-0.15	0.049	0.043*	0.665	108
	(0.004)	(0.051)	(0.099)	(0.069)	(0.025)		
≥50%	0.004	0.876***	-0.04	0.091	0.02	0.6594	108
	(0.004)	(0.061)	(0.106)	(0.068)	(0.028)		

Table [8]: Value-weighted private ownership portfolios excluding H&M

This table describes the outcome of the Carhart (1997) 4-factor model ("Model (3)") for the value-weighted private ownership portfolios, each excluding H&M. Portfolios are constructed based on the largest private owner's fraction of the firm's outstanding equity. The cut-off rates for the portfolios are 10, 20, 30, and 50 percent respectively. The sample period is January 2000 to December 2008. Alphas are on a monthly basis and standard errors are in parentheses. The adjusted R^2 and the number of months used to estimate the model are given in the last two columns. Significance at the level of 1, 5, 10, and 15 percent are indicated by ***, **, and * respectively.

Portfolio	**α**	**RMRF**	**SMB**	**HML**	**Mom.**	**Adj. R_2**	**Obs.**
≥10%	0.004	0.873***	-0.012	0.002	0.021	77.28%	108
	(0.003)	(0.056)	(0.057)	(0.052)	(0.032)		
≥20%	0.004	0.853***	-0.036	0.007	0.023	75.31%	108
	(0.003)	(0.060)	(0.064)	(0.056)	(0.034)		
≥30%	0.003	0.881***	-0.05	0.004	0.031	71.97%	108
	(0.003)	(0.068)	(0.071)	(0.072)	(0.042)		
≥50%	0.004	0.754***	0.076	0.123	-0.027	67.69%	108
	(0.003)	(0.073)	(0.054)	(0.051)	(0.028)		