Ownership Structure and Firm Performance: An Analysis of Publicly Listed Firms in The Netherlands

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ABSTRACT

This study's main goal is to find an answer to the question what effect the ownership structure of Dutch publicly listed firms have on their performance. It was expected that there is a positive effect at first, but that this positive effect would become negative when ownership becomes too concentrated. This relationship was tested by calculating the ownership concentration levels for Dutch publicly listed firms by using two measures of ownership concentration: the share of capital held by the five largest shareholders and the share of capital held by the largest shareholder. Firm performance was measured by using three variables: the ROA and MBV ratios and Sales Growth. The effect of ownership identity on performance was also examined. The results of the regression analyses show that there is not a lot of statistically significant evidence available that supports the view that the ownership structures of firms have a large effect on firm performance. Statistically significant evidence is found, however, after adjusting the original models during the robustness checks.

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1. INTRODUCTION

The separation of ownership and control is a phenomenom that is at the heart of modern corporations. The individuals that are the owners of the firm are typically not the same as the individuals that manage it. According to the research of Berle and Means (1932), the interests of the individuals who own firms (the shareholders) need not be the same as the interests of the managers of the firm. This leads to divergent interests between these two groups. Maximizing the wealth of the shareholders could be the most important goal for the owners of the firm, while management prefers to act in their own best interests and pursue other goals that benefit them more. Jensen and Meckling (1976) proposed the phenomena called agency theory in their research, stating that small shareholders have less of an inventive to monitor the actions of management compared to large shareholders. This division of ownership and control is one of the aspects of a firm's ownership structure. A firm's ownership structure essentially explains the distribution of the firm's shares among different shareholders. The identity of these shareholders also plays a role.

The main goal of this study is to empirically investigate the relationship between the ownership structures of publicly listed firms in The Netherlands and their financial performance. It will be investigated whether firms with large shareholders perform better compared to firms with more diffuse ownership structures. A distinction between different types of shareholders can also be made (i.e. Governments, Financial Institutions and Families) and this paper will also investigate if certain types of shareholders perform better than other types. The research question of this study is:

What is the relationship between the ownership structures of publicly listed firms in The Netherlands and their performance?

The analysis will include observations of firms listed on the Dutch stock exchanges between 2011 and 2013. The financial performance of the firms is defined by using two measures: the Return-On-Assets (ROA) and Market-To-Book (MTB) values. The ownership structures of the firms will be analyzed by using three measures. First, the share of equity held by the largest shareholder will be documented. The second measure is similar to the first, except data on shareholdings by the five largest investors will be collected. And third, the identity of these shareholders will be investigated and documented, in order to be able to distinguish between different types of shareholders and see if there are performance differences between the groups of shareholders.

Research on the relationship between ownership structures and firm performance has been conducted by multiple studies. There are studies that focus on multiple countries and analyze the differences and similarities between these countries and there are studies that focus on only one country. There are a few studies available on this topic for The Netherlands, but not a lot and herein lies the academic contribution of this paper. Practical relevance can be found in this paper because firms in The Netherlands can assess their ownership structures and see whether their ownership structure is beneficial to their performance or not. Firms will be able to see if their ownership structure aligns with their corporate strategy. Therefore it will provide the shareholders and stakeholders of the firm an extra insight into the effectiveness of their ownership structure.

A review of the relevant literature on this topic and the hypotheses that will be derived from the literature will be discussed in the next section. The third section of this paper will explain the methodology and data used for this research. In the fourth part the results of the analysis will be discussed and the fifth part will be a summary of the results and its implications.

2. LITERATURE REVIEW

2.1 The separation of ownership and control

There is a branch of literature that states that large shareholders have a beneficial effect on the performance of the firm. In their paper, Berle and Means (1932) mention the separation of ownership and control in modern corporations. One result of this separation is that managers will not always act in the best interests of the shareholders who own the firm. The authors state that this is particularly common for firms who do not have large shareholders and thus a diffuse ownership structure. In a diffuse ownership structure, managers hold more power, which gives these managers the opportunity to pursue their own interests. The pursual of these interests of management could not necesseraly lead to the goal of owners, namely maximizing the wealth of the shareholders. According to Gedaljovic and Shapiro (1998) management can pursue two different types of goals. Firstly, managers can ignore the long-term performance objectives of the firm and follow a strong focus on attaining short-term goals, which lead to a maximization of non-salary income for management. And secondly, management can engage in empire-building activities, which leads to a focus on the growth of the firm. This growth, however, does not have to lead to an improvement in firm performance and is mostly done in order to improve the prestige of the management. This branch of literature states that a concentrated ownership structure with large shareholders is more beneficial to the performance of the firm. Large shareholders have more power to control the actions of management and ultimately align the interests of shareholders with those of management (Jensen and Meckling, 1976).

On the contrary, there is also a branch of literature that does not support the view that large shareholders have a beneficial effect on the firm. Large shareholders have more power compared to smaller shareholders. These large shareholders can abuse their power to expropriate private benefits of control at the expense of other shareholders (Fama and Jensen, year; Connelly et al. 2010; Barclay and Holderness, 1989). Ownership concentration is more concentrated in Continental Europe than it is in other parts of the world. Therefore, this abuse of power by large shareholders will be more prevalent in firms in this part of the world (Thomsen et al. 2006).

2.2 The influence of concentrated ownership

The ownership structure of firms is one important aspect of firms that influences the extent to which the interests between shareholders and managers are the same (Daily, Dalton, & Cannella Jr., 2003). The influence of concentrated ownership structures is documented by the research of Shleifer and Vishny (1986) and Claessens et al. (2002), stating that a concentrated ownership structure has a positive effect on the performance of the firm, because of the existence of large shareholders who have an incentive to monitor the performance of management. This incentive is created by the investment of a large amount of funds in to the firm by these shareholders. Consequently, the large shareholder has something to gain from monitoring management's performance and aligning their own interests with those of management. As large shareholders invest more in

to the firm, they become more interested in supporting wealth-creating activities (Mikkelson and Ruback, 1985) A dispersed ownership structure does not lead to this incentive for management to control management because of the absence of large shareholders who are considerably financially invested in the firm. Forcing a change in management would provide the shareholders of firms with dispersed ownership structures some gains, but these gains do not outweigh the costs of forcing the change needed. The incentive to monitor management is also absent, as these smaller shareholders do not have a large enough stake in the firm to absorb the costs of monitoring the management (Grossman & Heart, 1980). Because large shareholders have invested a considerable amount of funds in to the firm, they have an incentive to monitor the performance of management and to overcome the principal-agent problem caused by the separation of ownership and control. So based on the literature there is a positive effect to be observed from large shareholders but there is also a negative effect of large shareholders. The positive effect is that large shareholders have more power to monitor the actions of management, which should lead to an alignment of interests between the management of the firm and its shareholders. But there is also a negative effect, because when large shareholders become too powerful they have the opportunity to expropriate minority shareholders.

A difference in ownership concentration can also be observed around the world. In the United States we can observe more dispersed ownership levels of firms, while ownership tends to take more concentrated levels in Continental Europe (Thomsen et al. 2006). This finding is supported by the work of Shleifer and Vishny, who state the following about concentration levels: "In the United States, large share holdings and especially majority ownership, are relatively uncommon." As well as: "In the rest of the world, large share holdings in some form are the norm." According to the work of La Porta et al. (1999) and Barca and Brecht (2001), ownership concentration tends to be more concentrated in countries situated in Continental Europe. The country of focus in this study is The Netherlands, so according to these findings we should expect a concentrated ownership structure to be the dominant form of ownership in Dutch firms. The research of Donker et al. (2009), however, states that ownership structures of Dutch firms are more similar to those of their counterparts in the United Kingdom and the United States, where diffuse ownership is more prevalent. This provides an interesting situation, as The Netherlands turns out to be different from the other countries situated in Continental Europe.

Previous studies on the relationship between ownership structures and performance state mixed outcomes. Demsetz and Lehn (1985) noted that they did not find a relationship between firm performance and ownership structures, which was confirmed by a later study on the subject. In their study, Demsetz and Villalonga (2001) conclude that they were also unable to find evidence that changes in the ownership structures of firms lead to changes in the performance of these firms. The fact that there should be no relationship is because the ownership structures of firms most suit the conditions in which they operate.

Thomsen & Pedersen (2000) find a positive and a negative effect of ownership concentration on firm performance and they state the following: "the relationship between ownership concentration and economic performance is nonlinear so that ownership concentration beyond a certain point leads to entrenchment and has adverse effects on performance." So at first there is a positive effect of large shareholdings on firm performance, but when the concentration level of shareholdings becomes too high the performance of the firms will be lower. Other studies conducted by Morck, Shleifer and Vishny (1988) and McConnell and Servaes present the same results.

For The Netherlands, Chirinko et al. (2003) have conducted a study on the effects of investor protections, concentrated ownership structures and performance. This study concluded that ownership concentration does not have a considerable impact on the performance of firms, caused by a dual-role of large shareholders. On the one hand, large shareholders minimize agency costs between management and its owners, on the other hand these large shareholders increase agency costs because large shareholders have more power to expropriate smaller shareholders. This study also suggests that there is a positive effect at first, which levels off when a shareholder gains too much power.

Based on the literature and previous studies about this topic, there should be an inverted U-shape relationship between ownership concentration and performance. Therefore, the following hypothesis has been constructed:

> *H1: The relationship between ownership concentration and firm performance is bell-shaped.*

2.3 Ownership identity and firm performance

Besides investigating the relationship between a firm's ownership concentration and its performance, Thomsen and Pedersen (2000) have also documented on the effect that different types of large shareholders have on the performance of the firm. The authors argue that the identity of the shareholder is equally important as the concentration of shareholdings, when it comes to performance. A division can be made between different types of shareholders, each one having their own distinct relationship with firm performance. These different categories of shareholders also have their own goals for the firms they own. Higher market-to-book values can be found with firms that have a financial institution as a large shareholder. Sales growth is more preferred when (member of) a family is a large shareholder, while this growth of sales is lower when the firm has got an institutional investor as a large shareholder (Thomsen and Pedersen, 2000). Differences in performance can also be observed. Anderson and Reeb (2003) found that family ownership does not lead to value creation for the firm and the other shareholders of the firm.

Different categories of shareholders can also take different roles on them, as has been documented by Kabir et al. (1997) in their study of Dutch firms. Institutional investors like banks, insurance companies, pension funds and mutual funds are expected to be more involved in controlling management's performance: "They are in a better position to invest resources for increased monitoring so that management's inclination to adopt defense mechanisms decreases." Since institutional investors have more financial resources available to them, they are more inclined to control the management of the firm in which they have a shareholding.

Based on the literature on the relationship between the identity of the shareholders and the performance of the firm, the following hypotheses have been derived:

> *H2: Shareholder value creation will be higher when the largest shareholder of a Dutch firm is an institutional investor.*
>
> *H3: Sales growth will be higher when the largest shareholder of a Dutch firm is a family (member), individual or foundation.*

3. METHODOLOGY AND DATA

3.1 Models

The relationship between the ownership structures of publicly listed firms in The Netherlands and their financial performance will be analyzed in this paper. This section of the paper will explain how this relationship is tested. As stated in the first hypothesis, it is expected that the relationship between ownership concentration and performance takes a bell-shaped form. This bell-shaped form is chosen because ownership concentration is expected to have a positive effect on performance up to a certain point where ownership becomes too concentrated. At first, shareholders will have an incentive to control the management and their actions, which should have a positive effect on firm performance. Also, shareholders will be less inclined to extract private benefits of control from the firm, because doing so would harm the firm and lower its value. But after a certain point, the shareholders will become too powerful, which has got negative consequences for the performance of the firm. Shareholders will be able to extract private benefits of control, as they have acquired to right amount of power to do so (Claessens et al. 2002). Based on these findings, a model is constructed that resembles the relationship between ownership concentration and firm performance. This model is stated as follows:

$$\textit{Firm performance} = \alpha + \beta 1 * \textit{Ownership Concentration} + \beta 2 * \textit{CONTROL} + \varepsilon$$

The performance of the firm will be measured by using two variables. The first variable that will be used is the Return-On-Assets (ROA) ratio while the second variable used will be the Market-to-Book-Value (MBV) ratio. Ownership concentration will also be measured by using two variables: the share of capital held by the five largest shareholders of a firm (T5) and the share of capital held by the largest shareholder (T1). Because it is expected that there will be a positive effect at first and a negative effect after a certain point, we have to include the squared definitions of T5 and T1, which will be called $T5^2$ and $T1^2$ respectively. The squared variables will account for the non-linearity that is expected in the relationship. These two measures are chosen because different papers use different variables to calculate ownership concentration. This paper will use these two commonly used variables and combine them in one analysis. It should provide a more complete view of the effect of ownership concentration on firm performance, as the influence of the five largest shareholders and the influence of the largest shareholder alone will be tested. In order to test the effect of these two measures of ownership concentration, two variations on this model will be used. One model will incorporate the T5 variable while the other will use the T1 variable of ownership concentration. This model will also use control variables to check for the effect of other variables that are known to have an effect on firm performance. The control variables that will be used are the debt-equity ratio, sales growth, the logarithm of total assets, year dummies and industry dummies. Both variations of the model will use the same control variables. In order to analyze the data, correlation analysis will be performed to see how the variables correlate with each other. After this, regression analyses will be conducted to test the relationship between ownership concentration and firm performance

The second and third hypotheses will be tested by using the following equation:

$$\textit{Firm performance} = \alpha + \beta 1 * \textit{Ownership Concentration} + \beta 2 * \textit{OWNID} + \beta 3 * \textit{CONTROL} + \varepsilon$$

This model incorporates the effect that different categories of shareholders are expected to have on the performance of the firm. These different categories of shareholders will be resembled by the OWNID part of the regression model. The model will be similar to the previous model that tests the first hypothesis: the same variations of ownership concentration variables will be used, as well as the same control variables. As stated before, we expect firms that have a (non-bank) financial institution as the largest shareholder to have higher MBV values and firms with a family (member) as the largest shareholder are expected to have higher values for sales growth. The variables that are used in the analysis will be explained in more detail in the next section

3.2 Variables

3.2.1 Dependent Variables

Three dependent variables will be used in this paper: the ROA and MBV ratios and sales growth. The ROA ratio is used to measure the accounting performance of the firm, while the MBV ratio will be used to measure the firm value performance of the firm. The ROA ratio is used in multiple studies to analyze the financial performance of firms in relation to their ownership structures (Thomsen et al. 2000; Van Ees et al. 2003; Krivogorsky, 2006) and for this reason it will also be included in this analysis of firm performance. The ROA ratio provides information on how well the management of a firm has performed when looking at the amount of profits a firm has generated with respect to its assets. The ROA ratio is calculated by dividing a firm's net income by its total assets and multiplying this figure with 100 in order to arrive at a percentage. The ROA ratios will be obtained from the ORBIS database.

The second measure of firm performance that will be used is the Market-to-Book-Value ratio (MBV) (Thomsen and Pedersen 2000; Claessens et al. 2002). This ratio will give information about the market value of firms and their book values. Low MBV's indicate that a firm's stock is undervalued while high MBV's indicate that the stock is overvalued. ORBIS provides this ratio as a part of their database.

The third hypothesis, which measures the relationship between different categories of shareholders and sales growth, requires the use of a third dependent variable. In this case sales growth will be used as a dependent variable. Sales growth is measured as the total sales of a firm in one year, minus the sales of the previous year. This number is then divided by the sales of the previous year. As stated before, the sales growth variable will be used as a dependent variable for testing the third hypothesis and it will be used as a control variable when the other hypotheses are being tested Measuring sales growth is an appropriate method to proxy for growth opportunities of firms and it is therefore expected to have a positive effect on firm performance (Thomsen & Pedersen 2000; Claessens et al. 2002). According to the third hypothesis, Sales growth is believed to be higher for firms that have a family member as a large shareholder when compared to other types of shareholders.

3.2.2 Independent variables

One of the aspects of a firm's ownership structure is the ownership concentration. Shareholders are obliged by Dutch law to disclose their shareholdings of a firm when these shareholdings exceed a certain threshold (5 per cent, 10 per

cent, etc.). The shareholder who exceeds a threshold will have to notify the AFM and the company that issued the shares in the first place. The AFM has made a register on their website where a publicly accessible database can be found on all the notifications issued by shareholders. Almost all of the firms in the sample disclose their major shareholders in their annual reports, stating their name and total ownership percentage. In some annual reports the company only states that a shareholder has exceeded a certain threshold and that the shareholder should own a stake between two thresholds (i.e. between 25 and 30 per cent). When this was the case, the register of the AFM on shareholder disclosures was consulted in order to obtain the correct figure.

Ownership concentration will be measured by calculating the share of capital held by the five largest investors in a firm (T5). All shareholders holding more than five per cent of a firms stock will be included in the analysis. When there are more than five shareholders who own more than five per cent of a firm's stock, only the five largest shareholders will be considered (Demsetz and Villalonga, 2001). Next to this measure of ownership concentration, the share of capital owned by the largest investor will also be considered (T1). The same minimum threshold of owning five per cent of a firm's stock is used here as well (Thomsen & Pedersen, 2000; Claessens et al. (2002). The reason for only including shareholders who own more than five per cent of the shares is that when a shareholder owns less, it will be hard to find an accurate number because the shareholder is not obliged to disclose his holding. Thomsen & Pedersen (200) also had hypothesized that there would be a bell-shaped relationship between ownership concentration and firm performance. In order to test whether the relationship is indeed bell-shaped, the authors added a squared definition of ownership concentration to their analysis. Therefore this measure will also be included in this analysis. Industry effects will also be accounted for by including a measurement to identify different types of industries.

Ownership identity will also be used as an independent variable. There are different categories of shareholders prevalent. The classification used by Thomsen and Pedersen (2000) will be used to distinguish between different categories of shareholders:

- **B** = Bank
- **C** = (nonfinancial) Company
- **FA** = Family, single person or foundation
- **G** = Government
- **I** = Institutional investor

Dutch firms report the identity of their largest shareholders in their annual reports. Based on these reports and further investigation in to the identity of these shareholders, we can classify a majority shareholder as belonging to one of the beforementioned categories.

An other control variable that will be included in the analysis is *firm size*. Claessens et al. (2002) and Anderson and Reeb (2003) state in their studies that firm size is an appropriate control variable to include in the analysis, because larger firms have a lower risk of financial distress. This is so for a number of reasons. Large firms disclose information in a better way than small firms, also their trading is more liquid and these firms get more attention from analysts. Because of these reasons, it is expected that firm size and firm performance will be positively correlated. The log measure of the total assets will be used to measure this variable.

A distinction between different industries will also be made, in order to account for valuation differences between industries (Thomsen & Pedersen, 2000; Claessens et al. 2002). To distinguis between the different types of industries, the 'NACE rev 2 Main Section' will be used, which provides a total of thirteen industries in The Netherlands. Year dummies will also be included in the analysis, which allows year-by-year analyses to be made. The Debt/Equity ratio will also be included as a control variable (Thomsen & Pedersen, 2000). This ratio is calculated by adding up the current and non-current liabilities and then dividing this number by the shareholder's funds.

3.3 Data

As mentioned before, the firms will be analyzed for the period spanning from 2011 till 2013. Information from the year 2014 is not included in the analysis, because not all of the annual reports for this year are available in Orbis at the moment on which this research is being conducted. The sample used in this research consists of all publicly listed firms in The Netherlands, with the exception of financial companies. Financial companies are excluded because it is difficult to analyze data on profitability and valuation for these firms (Claessens et al. 2002). All firms that are prevalent in the sample are listed companies for the 2011-2013 period. Firms that are not listed on the Dutch stock exchanges for the entirety of the period of analysis or firms for which no data can be found in either the annual reports or the register of the AFM will be excluded from the sample.

Information on the ownership structures of the firms in the sample has been obtained in two ways. Shareholders of Dutch firms are required by the Dutch financial authority (AFM) to notify both the company and the AFM when their ownership stake exceeds a certain threshold (i.e. 5%, 10%, etc.). The AFM holds a register of these notifications on their website, which is publicly accessible. The second method to obtain the required information is to consult the annual reports of the firms. Information on the largest shareholders can be found in these reports. These annual reports will be used as the primary source of information, as they provide a more accurate view of the significant shareholdings in the firm. The register of the AFM lists all notifications for a firm for the whole period on which the firm is listed and can thus contain double entries of data. The identity of these major shareholders is also stated in the annual reports as well as in the AFM register. Further research on the exact identity of these major shareholders can be done by consulting the internet, if the annual report does not provide sufficient data.

All variables have been controlled and adjusted for outliers by using the 'Winsorize' method. All entries below the 5^{th} percentile and above the 95^{th} percentile have been adjusted according to this method. This method leads to a more reliable set of data, because the extreme values that influence the data set as a whole will be adjusted.

4. RESULTS

This part of the paper will state the results of the different analyses performed. The first part of this section will clarify the descriptive statistics of the sample used in the analysis. The second part will cover the analysis of the correllations between the different variables. After this, the outcomes of the regression analyses will be presented and discussed.

4.1 Descriptive statistics

In the table below, the descriptive statistics for the sample used in this research are shown. A total of 231 observations have been included in the analysis, which leads to the conclusion that 77 firms have been included in the analysis. Quite some firms have been excluded for the analysis for a number of reasons.

Not all firms listed in the ORBIS database had information available for all of the three years that will be analysed in this study. Firms that did not have this information available have been excluded. There were also firms in the ORBIS database with inconsistent data entries. As an example, there were firms that had considerable sales in one year and zero sales in the following year, followed by considerable sales in the next year. Companies that had inconsistencies in their data like explained before have also been excluded. This leads to the sample that will be analysed in this study.

As can be seen from the table, the mean value for T5, which represents the total ownership share held by the five largest shareholders, is 45.00 per cent for the period of 2011-2013, while the mean value for T1 is 24.85 per cent. Mean ROA and MBV values are 1.78 and 1.62 respectively. The descriptive statistics have also been analysed on a year-to-year basis. These tables will not be presented in this section and these can be found in the Appendix of the paper. What we can observe from this year-to-year analysis is the following. Firstly, ownership concentrations remain fairly stable over the period on which the analysis is focussed. No large changes in ownership structure appear during the period, when looking at the mean values of both definitions of ownership concentration (T5 and T1). Second, there are large variations in the mean value for the ROA ratio, before adjusting the variables by using the winsorizing method. The mean value for this ratio in 2011 is quite higher compared to the value for 2012: 2.09 per cent in 2011, 1.39 percent in 2012 and 1.88 percent in 2013. The ROA variable changes a lot over time and this provides a motivation for additionally analysing the years separately. The MBV ratio remains somewhat constant over the period of analysis. Sales growth takes the highest value in 2011 with a mean value of 7.08 per cent.

Table 1. Descriptive Statistics.

	N	Min	Max	Mean	St. Dev.
T5	231	10.00	85.61	45.00	22.22
T1	231	5.04	73.00	24.85	18.65
ROA	231	-17.78	14.06	1.78	7.82
MBV	231	0.42	4.81	1.62	1.06
Sales Growth	231	-16.37	34.10	4.75	12.93
D/E Ratio	231	36.26	513.92	160.25	121.29
logTA	231	9.82	18.54	13.69	2.38

The following variables are in percentages: T5, T1, ROA, MBV, Sales Growth and D/E Ratio. logTA is a logarithm.

Table 2 presents the distribution of ownership concentration amongst different categories for the two measures of ownership concentration that are used in this research. When we look at the T5 measure of ownership concentration it can be observed that the concentration level of shareholdings is well distributed from 20 per cent until 89 per cent, with each of the groups holding approximately the same amount of observations in it. So the observations for the T5 measure of ownership concentration are well distributed around the different categories, but the same cannot be said for the T1 measure of ownership concentration. This measure, that represents the ownership stake of the largest shareholder, is more concentrated around the lower end of the categories with the largest part of the observations focussing around 10 till 49 per cent. This is not a surprising finding, as there are not a lot of publicly listed companies in The Netherlands that are wholly owned by one entity or individual. What this means, however, is that most of the extreme values lie on the right side of the mean value for this variable, which is confirmed when looking at the frequency table for this variable.

Table 2. Frequency Table.

	T5	T1
<10%	7 (3.0)	6 (2.6)
10-19%	5 (2.2)	35 (15.2)
20-29%	24 (10.4)	75 (32.5)
30-39%	28 (12.1)	52 (22.5)
40-49%	38 (16.5)	23 (10.0)
50-59%	32 (13.9)	16 (6.9)
60-69%	36 (15.6)	3 (1.3)
70-79%	28 (12.1)	21 (6.54)
80-89%	33 (14.3)	

The amount of observations is showed in the table, with percentages in brackets.

Table 3 presents the frequencies for the identity of the largest shareholders. As can be seen from the table, two categories are prominently represented in our sample: families and institutional investors. Large shareholdings by the government are not very common in our sample, with only three counts found in the data, but because we observed the firms for a period of three years we can state that only one firm has the government as the largest shareholder. Quite some banks in The Netherlands are (partially) owned by the Dutch government, but since these companies were excluded from the analysis these firms do not appear in the dataset.

Table 3: Owner identity frequencies

	Frequency	Percentage
B	22	9.5%
C	21	9.1%
FA	83	35.9%
G	3	1.3
I	96	41.6
Total	*231*	*100%*

Frequencies are counted by calculating the number of observations. The percentage collumn shows that, i.e. 9.5% of the observations fall in the B category.

4.2 Correlation analysis

This section will present and discuss the Pearson correlation between the variables. The correlation table can be found in the Appendix part of the paper.

Looking at the relationship between ownership structures and firm performance, the following can be observed from the correlation table. Firstly, all measures of ownership concentration are negatively correlated with the MBV measure of firm performance. The correlation is not strong but it is, however, significant for all measures of ownership concentration. The other measure of firm performance, the ROA ratio, is positively correlated with all measures of

ownership concentration. All of these correlations are statistically significant. The correlations is not very strong, just

like what was observed with the MBV ratio. Ownership concentration is slightly stronger correlated with the MBV measure of firm performance than it is with the ROA measure. The third measure of firm performance, sales growth, correlates positively with all definitions of ownership concentration. These correlations are also not very strong, but they are statistically significant. The measures of ownership concentration all correlate significant, strong and positively with each other.

4.3 Regression Analyses

4.3.1 Ownership concentration

Table 3 presents the results of the different regression analyses that have been performed in relation to the first hypothesis. As can be seen in the table, four models have been used to test the hypotheses. Model one and two measure the relationship between the level of ownership concentration of firms, as measured by the T5 and $T5^2$ variables, and firm performance (ROA in model 1 and MBV in model 2). The third and fourth models examine the same relationship as the first two models do, but only a different measure of ownership concentration is used (T1 and $T1^2$).

Table 3. Regression: ownership concentration

	ROA	MBV	ROA	MBV
	1	2	3	4
T5	.057 (.512)	.024 (1.620)	.	.
$T5^2$	0.000 (-.291)	.000** (-2.216)	.	.
T1	.	.	-.037 (-.358)	-.016 (-1.192)
$T1^2$	.	.	.001 (.461)	.00007 (.399)
Log_TA	.641* (2.614)	.080** (2.432)	.573** (2.413)	.078** (2.430)
Sales Growth	.112* (2.903)	.010*** (1.943)	.117* (3.064)	.012** (2.295)
D/E Ratio	-.013* (-2.679)	.002* (2.820)	-.014* (-2.962)	.002* (2.595)
Industry dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
R^2	.228	.239	.225	.229

: significant at 99.9 per cent; ** significant at 95 per cent; * significant at 90 per cent. Beta coefficients listed, t-statistics in brackets. Performance measure stated at the top of the table indicates the dependent variable used in the model. Industry and year dummies have been included in all models in this table.*

This section contains the results of the different regression analyses that have been done. The first four models will be discussed here, as they all relate to the first hypothesis. Return-On-Assets is positively influenced by the T5 measures of ownership concentration, but this effect is not significant as the p-values are not low enough. The Market-to-Book-Value ratio is also positively influenced by the T5 variable. Only the $T5^2$ measure has a significant effect on the MBV ratio, but its effect is close to zero. These results indicate that there is a positive effect of the concentration level of shareholdings on the performance of the firm, but that this effect levels of when a certain level of ownership concentration is reached. No evidence is found that there is a negative effect of ownership concentration on firm performance, when ownership reaches a certain level. These results are not entirely in line with what was expected in the hypothesis, but the part that there is a level of ownership after which the effect on performance levels off is an encouraging sign. The models that were using the T5 variables of as measures of ownership concentration have R^2-values of 0.228 and 0.239 respectively and are both statistically significant at the 99.9 per cent level. The variables used in these models account for around 23 per cent of the variation in firm performance. When we take a look at the other measure of ownership concentration, T1, different results can be seen. Both linear measures of ownership concentration appear to have a negative effect on both measures of firm performance. The effect is not significant though, because of the high p-values. The squared measures of T1 have a positive and non-significant effect on firm performance. Although the coefficients are not significant, it is remarkable to see that the opposite of what was hypothesized can be seen in these results. Both of the models are again statistically significant at the 99.9 per cent level and have R^2-values of 0.225 and 0.229 respectively. While the T5 ownership variables behave almost in-line with the hypothesis, the T1 variable do not. The share of capital held by the five largest shareholders does seem to have a positive effect on firm performance, up to a certain point. But no strong conclusions can be made from these results, as all but one of the coefficients are not statistically significant. Also, both measures of ownership concentration do not have a large economic significance, as their effect on the dependent variables are not very large. This implies that ownership concentration does not have a large effect on the performance of firms in The Netherlands. The squared variables of ownership concentration have a very low economic significance with regard to firm performance. All of the squared variables have an effect on firm performance that is close to zero. A robustness check will be performed to check if there are changes to be observed when we exclude the squared definitions of ownership concentration from the models.

4.3.2 Ownership identity

The results of the regression models that test the 2^{nd} (5^{th} and 6^{th} models) and 3^{rd} (7^{th} and 8^{th} models) hypotheses will be presented in this section. It was hypothesized that the MBV ratio would be higher when the largest shareholder of a firm was an institutional investor. But as we can see in the table below, this is not the case for the data sample used in this research. Family ownership has a slightly more positive influence on the MBV ratio than institutional ownership has. Although the model is significant at the 99.9 per cent level, the coefficients for family ownership and institutional investor ownership are both not statistically significant, so yet again it is hard to bind strong conclusions to these results. In short, no evidence is found to support the hypothesis that institutional ownership leads to better performance on the MBV ratio. When we take a look at the models that resemble the third hypothesis, the following can be observed. Institutional ownership has a more positive effect on sales growth than family ownership.

Both coefficients are not far apart from each other. But it was hypothesized that family ownership would lead to higher sales growth and it can be seen from the regression results that the opposite is true. No evidence is found that supports the third hypothesis, as can be seen in the table. A surprising finding is that the T5 variables of ownership concentration have a statistically significant effect on the MBV ratio when the identity of the largest shareholder is also taken in consideration. The share of capital held by the five largest shareholders positively influences sales growth and this effect is also statistically significant. So while no statistically significant evidence is found that supports the second and third hypotheses, there is evidence that states that ownership concentration has a statistically significant effect on the MBV ratio and on Sales Growth.

Table 4. Regression: Owner Identity

	MBV	MBV	SalesGr.	SalesGr.
	5	6	7	8
T5	.027*** (1.729)	.	.341*** (1.665)	.
$T5^2$	.000** (-2.314)	.	-0.003 (-1.453)	.
T1	.	-.020 (-1.395)		.172 (.901)
$T1^2$	.	.000 (.478)		-.001 (-.433)
logTA	.079** (2.380)	.070** (2.165)	-.340 (-.769)	-.413 (-.963)
Sales Growth	.010*** (1.915)	.012** (2.305)	.	.
D/E ratio		.002* (2.621)	.001 (.077)	-.001 (-.160)
Family	-.138 (-.681)	.060 (.293)	1.599 (.592)	1.563 (.570)
Inst.	-.270 (-1.430)	-.239 (-1.281)	2.965 (1.076)	3.224 (1.305)
Industry dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
R^2	.250	.245	.110	.107

: significant at 99 per cent; ** significant at 95 per cent; * significant at 90 per cent. Beta coefficients listed, t-statistics in brackets. Performance measure stated at the top of the table indicates the performance measure used. SalesGr. is an abbreviation of Sales Growth.*

4.3.3 Robustness checks

As observed in the descriptive statistics section, 2011 has a higher mean value for the ROA ratio compared to the other years of the analysis period. In this section the results of year-by-year regression analyses will be presented, in order to check if there is a difference between the years on which this study focusses. The same regression models that have been used in the previous sections will be used here as well. The robustness check will start with the analysis of 2011, followed by 2012 and finishing with 2013.

From this robustness analysis we can see that there are changes between the years of analysis, especially for the ROA measure of firm performance. In 2011, both the T5 and the T1 measures of ownership concentration have a negative effect on ROA, while the $T5^2$ and $T1^2$ measures have a positive effect on firm performance. This is the opposite of what was expected from previous studies. The values for ownership concentration more or less take their previously predicted values in the other years. When looking at the MBV ratio only small effects of ownership concentration on firm performance can be seen. All these effects on the MBV ratio are rather small and do not always take the expected form. All coefficients are not statistically significant, which yet again confirms that there is no significant relationship between ownership concentration and firm performance.

Table 3. Robustness checks ROA & MBV

ROA	T5	$T5^2$	T1	$T1^2$
2011	-0.259	0.003	-0.258	0.003
2012	0.269	-0.003	0.053	-0.001
2013	0.126	-0.001	0.073	0.000
MBV	T5	$T5^2$	T1	$T1^2$
2011	0.025	0.000	-0.028	0.000
2012	0.020	0.000	-0.002	-0.00009
2013	0.023	0.000	-0.021	0.000

Beta coefficients listed in the table. The top half uses the ROA variable as the dependent variable and the bottom half uses the MBV variable as the dependent variable.

The regression analyses all showed that the squared variables of ownership concentration have a very low effect on firm performance. Therefore, robustness checks have been carried out to see whether the exclusion of the squared variables of ownership concentration produces different results. First the results relating to the first hypothesis will be discussed. When the ROA variable is used as the dependent variable, no changes are observed in the results. Ownership concentration still does not have a statistically significant effect on the ROA ratio. Both the T5 and T1 coefficient take a positive sign, with beta coefficients of 0.025 and 0.009 respectively. Stronger results are found when the MBV ratio is used as the dependent variable. Both variables of ownership concentration have a negative effect on the MBV ratio and both variables are statistically significant at the 99% level, with beta coefficients of -0.008 for the T5 variable and -0.011 for the T1 variable. The coefficients do not have a strong economical significance though, as their values are close to zero. But the exclusion of the squared variables of ownership concentration does yield more statistically significant results. When the models for the second and third hypothesis are re-run we find no different results. No statistically significant evidence is found to support the hypotheses.

5. CONCLUSION AND IMPLICATIONS

5.1 Conclusion

This study's main goal was to find an answer to the question what effect the ownership structures of Dutch publicly listed firms have on their performance. It was expected that there was a positive effect at first, but that this positive effect would become negative when ownership becomes too concentrated. This relationship was tested by calculating the ownership concentration levels for Dutch publicly listed firms by using two measures of ownership concentration: the share of capital held by the five largest shareholders and the share of capital held by the largest shareholder. Firm performance was measured by using three variables: the ROA and MBV ratios and Sales Growth. The effect of ownership identity on performance was also examined. The results of the regression analyses show that there is not a lot of statistically significant evidence available that supports the view that the ownership structures of firms have a large effect on firm performance. Statistically significant evidence is only found after adjusting the original models during the robustness checks.

The first hypothesis stated that a quadratic relationship was expected between ownership concentration and firm performance. Based on previous literature ownership concentration was expected to have a positive effect on firm performance up to a certain level, after which the positive effect would turn into a negative one. This was based on the findings in the literature that large shareholders have the incentive to monitor the performance of the management, because these shareholders have invested a significant amount of their wealth in the firm. But when these large shareholders become too powerful, they should be able to expropriate the minority shareholders and extract private benefits of control from the firm. The results of this paper show that there is indeed a positive effect of the share of capital held by the five largest shareholders on firm performance prevalent. But instead of finding a negative effect at a certain point of ownership concentration, only a levelling-off of the effect is observed and not a negative effect on performance. When the influence of the largest shareholder alone is analysed, we see the opposite. At first there is a negative effect on firm performance and after a certain level of ownership by this largest shareholder the effect on firm performance becomes positive. These findings are not strong because the results are not statistically significant. The robustness checks that were performed also did not provide significant evidence. When the observations of the year 2011 were excluded from the analysis, more consistent results were found. The linear variables of ownership concentration had a positive effect on the performance of the firm and the quadratic components had a negative effect on firm performance. Although these coefficients were not statistically significant, it hints in the direction that there is a bell-shaped curve for the relationship between ownership concentration and firm performance. But based on the data used in this study, it is hard to make strong conclusions.

The second and third hypothesis related to the effect that the identity of the largest shareholder has on the performance of the firm. Based in previous findings, institutional ownership was expected to have a more positive effect on the MBV ratio of firms than other types of ownership would have and family ownership should have a more positive effect on the growth of sales of firms. This effect was tested by analyzing the ownership structures of firms and checking who the largest shareholder of the firm was. Following this, the shareholders were divided amongst different categories and then a regression analysis was performed. What we can see from these results is actually the opposite of what was expected. The analysis showed that firms who had a shareholder of the family category as their largest investor had higher MBV ratios than firms with an institutional investor as the largest shareholder, but the results were not statistically significant. When we take a look at the results that relate to the third hypothesis, we see that institutional ownership has a more positive effect on sales growth than family ownership. Both types of ownership had a positive effect on the sales growth of a firm but both effects were not statistically significant. Ownership identity proves to be an aspect to take in mind when considering a firm's ownership structure in relation to its performance. An interesting finding from the regression models that relate to the second and third hypotheses is that the effect of ownership concentration (T5) on the MBV ratio becomes statistically significant when shareholder identity is included in the regression models. Sales Growth is also influenced positively and statistically significant by the T5 measure of ownership concentration.

In short, no strong evidence was found that supports the hypothesis that there is a bell shaped curve for the relationship between ownership concentration and firm performance. One of the reasons for this is that the market responds to the forces that are at the heart of ownership structures of firms. And this removes any predictable relation between ownership structures and performance of firms (Demsetz and Villalonga, 2001). Because most of the coefficients were not statistically significant, caution must be taken in drawing conclusions from these results. But the results point in the direction that there is a positive as well as a negative effect of ownership concentration on firm performance to be observed. For the relationship between the identity of owners and the performance of the firm evidence is found that the identity of the owner does matter to the performance of the firm. The effect of the share of capital held by the five largest shareholders of a firm on the MBV ratio became statistically significant after the identity of the largest shareholder was also included in the regression analysis. This finding could point in the direction that there are more factors that influence the effect of ownership concentration on firm performance than the factors that have been included in this paper's regression models. Authors of different papers use different variables in their models and the variables used in this paper's analyses could prove not to be the optimal mix of variables. Future research for Dutch publicly listed firms could thus choose to use a different set of variables

5.2 Limitations

There are some limitations to this study that hinder the generelization of the results to other settings. Firstly, the sample size is small when compared to the samples used by other studies. Using a larger sample could provide more accurate results or different findings. Repeating the study for a longer period of time provides more observations, which could make the results more reliable compared to this paper's results. Secondly, only firms that were listed for the entire period of 2011-2013 were included in the sample of this study. Although, not a lot of companies were found in ORBIS that were either only listed for one or two years or went bankrupt during the period of this study, including these firms could provide a more accurate view of the situation which publicly listed firms in The Netherlands face. Thirdly, although most of the results found in this study hint at a relationship between ownership structures and performance, it is not possible to draw strong conclusions from this study. Repeating the study with the inclusion of more observations could provide stronger results that are generalizable to other situations.

5.3 Practical implications

This study has analyzed the relationship between the ownership structures of publicly listed firms in The Netherlands and their performance. Ownership concentration does not have a statistically significant influence on the performance of the firms in this sample, but it does hint in the direction that there is a certain point of ownership after which the positive effect of concentrated shareholdings diminishes. Companies can keep this finding in mind when analyzing their ownership structures and if possible take appropriate actions to ensure that their ownership concentration levels fit their strategic goals. For the relationship between the identity of the largest shareholder and performance stronger conclusions can be drawn, because results were found that were statistically significant. The identity of the largest shareholder does play a role in influencing the performance of firms. Some types of shareholders have a more positive influence on firm performance than others. This finding is helpful for firms, as they can see whether the largest shareholder of their firm fits the goals that they want to achieve. In example, Institutional investors have higher sales growth levels compared to other groups.

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7. APPENDIX

7.1 Descriptive statistics per year (post winsorizing)

Some of the Minimum and Maximum values can be the same during the three years of observation. This is the case because the data has been adjusted for outliers by using the winsorizing method. All numbers in the tables are percentages, except for the logTA numbers. These numbers are the logarithm of Total Assets.

2011:

	Min.	Max.	Mean	Std. Dev.
T5	10.00	85.50	44.36	22.16
T1	5.04	73.00	24.76	18.82
ROA	-17.78	14.06	2.09	8.01
MBV	0.42	4.81	1.71	1.03
Sales Growth	-16.37	34.10	7.06	15.08
D/E Ratio	36.26	513.92	158.76	118.52
logTA	9.82	18.54	13.68	2.40

2012:

	Min.	Max.	Mean	Std. Dev.
T5	10.00	85.50	45.49	21.87
T1	5.04	73.00	24.96	18.64
ROA	-17.78	14.06	1.39	8.24
MBV	0.42	4.81	1.54	1.07
Sales Growth	-16.37	34.10	3.38	12.76
D/E Ratio	36.26	513.92	167.76	125.57
logTA	9.82	18.54	13.69	2.40

2013:

	Min.	Max.	Mean	Std. Dev.
T5	10.00	85.50	45.13	22.87
T1	5.04	73.00	24.83	18.72
ROA	-17.78	14.06	1.88	7.27
MBV	0.42	4.81	1.61	1.07
Sales Growth	-16.37	34.10	3.80	10.38
D/E Ratio	36.26	513.92	154.23	120.86
logTA	9.82	18.54	13.71	2.38

7.2 Pearson Correlation Matrix

	T5	$T5^2$	T1	$T1^2$	ROA	MBV	Sales Growth	D/E Ratio	logTA
T5	1	0.973*	0.789*	0.696*	0.125**	-0.178*	0.161*	-0.118**	-0.136**
$T5^2$	0.973*	1	0.815*	0.761*	0.121**	-0.190*	0.144**	-0.103***	-0.098***
T1	0.789*	0.815*	1	0.961*	0.108***	-0.163*	0.177*	-0.092***	-0.072
$T1^2$	0.696*	0.761*	0.961*	1	0.118**	-0.138**	0.170*	-0.076	-0.047
ROA	0.125**	0.121**	0.108***	0.118**	1	0.276*	0.211*	-0.208*	0.133**
MBV	-0.178*	-0.190*	-0.163*	-0.138**	0.276*	1	0.095***	0.136**	0.024
Sales Growth	0.161*	0.144**	0.177*	0.170*	0.211*	0.095***	1	-0.048	-0.004
D/E Ratio	-0.118**	-0.103***	-0.092***	-0.076	-0.208*	0.136**	-0.048	1	0.043
logTA	-0.136**	-0.098***	-0.072	-0.047	0.133**	0.024	-0.004	0.043	1

*: significant at 99 per cent; ** significant at 95 per cent; *** significant at 90 per cent.