Ownership concentration, ownership identity and firm performance: An empirical analysis of Dutch listed firms

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ABSTRACT

Ownership structure is considered as an important corporate governance mechanism. However, the relationship between ownership structure and firm performance remains an empirical issue as different researches yield mixed results. This research aims at adding to the existing literature by providing empirical evidence about the ownership structure of Dutch listed firms. Ownership concentration by the largest shareholder has been found to have a positive effect on firm performance. Nevertheless, another measure of ownership concentration follows a quadratic relationship with firm performance, thereby highlighting both the incentive and the entrenchment effect. Multiple large shareholdings follow the same relationship. The control-ownership wedge was found to oftentimes have a positive effect on firm performance, which was not expected by literature. Institutional ownership has been found to have a positive effect on firm performance. Family ownership's influence on firm performance is firstly negative but after shareholdings of around 20 percent, its influence becomes positive. Unfortunately, managerial ownership does not provide a clear direction of the relationship. This research has practical relevance in the sense that managers can understand why a certain firm performance can be expected from ownership structure.

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Keywords
Ownership concentration, multiple large shareholdings, control-ownership wedge, institutional shareholdings, family shareholdings, managerial shareholdings

1. INTRODUCTION

Good corporate governance is vital for every business, as investors are willing to pay more for a well-governed company (Krivogorsky, 2006). There is a relatively large body of literature that demonstrates the relationship between good governance and firm value (Connelly et al., 2012). For example, Bebchuk et al. (2009) describe the widespread acceptability and growing empirical evidence that good corporate governance mechanisms can create higher shareholder value. In addition, Bell et al. (2014) argue that IPO firms have to enhance their corporate governance mechanisms to achieve higher stock market value, thereby highlighting the positive relationship between the two. This is due to investors being willing to pay a premium for a well-governed company. Bertoni et al. (2014) highlight that corporate governance is especially important for young and innovative firms, as well as for mature firms and for companies that experience a separation of ownership and control. Young and innovative firms have an incentive to enhance their corporate governance mechanisms in order to create firm value. Mature firms often experience minority shareholders which may lead to agency problems between the majority and minority of the shareholders. Corporate governance could in this instance serve as a protection mechanism for the minority shareholders to prevent expropriation behavior from large shareholders. The separation of ownership and control relates to agency problems, which occur when shareholders receive imperfect information in monitoring management (Aguilera and Jackson, 2003). The monitoring of management by outside shareholders might prevent managers from behaving opportunistically, which will eventually create higher shareholder value (Donker et al., 2009). This highlights the importance of studying ownership structure as a corporate governance mechanism. The influence of ownership structure on firm performance has been studied oftentimes (Margaritis and Psillaki, 2009). There is, however, no agreement on the direction of this relationship in theoretical literature, neither in empirical studies (Krivogorsky, 2006; Hamadi and Heinen, 2015).

The Netherlands is a country characterized by ownership concentration (Kabir et al., 1997) and a market-based economy (Demirgüç-Kunt and Maksimovic, 2002). It even has the most market-oriented corporate governance structure within Continental Europe, comparable with the United Kingdom and the United states (Donker et al., 2009). The level of ownership concentration is a cause of the civil law tradition prevalent in the Netherlands and the accompanying lower shareholder protection (Richter and Weiss, 2013). Poor investor protection makes it attractive for large controlling shareholders to invest in their assets as there is a lower cost of sacrificing diversification (Parigi and Pelizzon, 2008). Due to the high ownership concentration, the Netherlands deals with agency problems between large controlling shareholders and the smaller ones (Hamadi and Heinen, 2015). In the light of ownership concentration, large owners are able to gain much control over the firm in order to generate private benefits at the expense of minority shareholders (Schleifer and Vishny, 1997). In market-based financial systems, the primary monitoring role is left to the institutional investors, who mainly invest to pursue financial interests (Aguilera and Jackson, 2003).

Most of the literature regarding the influence of ownership structure on firm performance discusses the influence of managerial ownership on firm performance in firms with diffuse ownership (Hamadi and Heinen, 2015). It may be that the results on studies in countries with diffuse ownership do not yield the same results as studies conducted in the Netherlands. Although some researchers have investigated the influence of ownership structure on firm performance in the Netherlands specifically

(e.g. Donker et al., 2009), this research attempts to add to the current body of literature by looking at ownership concentration as well as shareholders' identities. This article will focus on Dutch firms that were publicly listed over the period spanning from 2012-2014. The research question of this article is as follows :

"What is the influence of ownership concentration and ownership identity on firm performance in the Netherlands?"

This research is structured as follows. The next section discusses the relevant theories and empirical evidence related to ownership concentration as well as shareholders' identities, including hypotheses that will be tested throughout the research. Section three is the methodology-section and describes the variables included in this study, as well as the research model and tests that will be used during the research. Section four is concerned with an explanation on how the data will be gathered. Section five describes the relevant results of this study, whereas section six concludes on the aforementioned research question, as well as providing reasons why hypotheses are accepted or rejected. The article ends with a discussion, including the practical and literary relevance, as well as the limitations of this study and some guidance for future studies.

2. LITERATURE REVIEW
2.1 Agency problems

The basic problem in corporate governance is termed the 'agency problem', which occurs because of the separation of ownership and control. Agency problems would no longer occur if all owners would be actively involved in managing the firm and when they would be able to monitor each other's actions (Colombo et al., 2014). At the heart of agency problems, therefore, lies information asymmetry. Information asymmetry influences the level of market illiquidity, which in turn raises the cost of capital (Lambert et al., 2011). This is due to an uncertainty about the value of a firm's equity (Barth et al., 2013). Another aspect that leads to agency problems is moral hazard, which is the failure of organizations to assess the firm or borrower (Chemla and Hennessy, 2014). The solution to this could be monitoring, as shareholders can detect opportunistic behavior in the firm through this (Park, 2000). However, this may increase monitoring costs, so the costs have to outweigh the benefits. One of the agency problems prevalent in the Netherlands is between majority and minority shareholders. As there is a concentration of ownership in the Netherlands, the largest shareholders are able to extract private benefits out of organization at the expense of the minority shareholders. This highlights the importance of studying ownership concentration within the Netherlands.

2.2 Ownership concentration

In the Netherlands, ownership concentration exerts a relatively important role (Kabir et al., 1997). According to Hamadi and Heinen (2015), the literature generally considers ownership to be concentrated if the largest shareholder holds more than 10% of the voting rights, but another measure that is often used compounds the shares of the shareholders owning 5 percent or more of the total shares outstanding (among others, Krivogorsky, 2006; Busta, 2014). The literature on ownership structure often addresses the differences between control and cash flow rights of dominant shareholders (Lin et al., 2013). The divergence between control and cash-flow rights is named the "control-ownership wedge" (Jiang et al., 2011). Large owners will structure their shareholdings in a way that they have large control rights and comparatively low cash-flow rights (Laeven and Levine, 2008). Shareholders are inclined to obtain excess control rights as they may be able to divert corporate resources for private benefits (e.g. Ben-Nasr et al., 2015; Lin et al., 2011;

Claessens et al., 2002), also referred to as the entrenchment effect by Bennedsen and Nielsen (2010). Minority investors are then vulnerable to expropriation behavior expressed by the controlling shareholder (Attig et al., 2008). However, small shareholders may also be less inclined to actively monitor management, possibly due to the 'free-rider problem' (Kabir et al., 1997). There are different ways in which owners can obtain excess control rights over cash flow rights, of which multiple class voting shares, pyramidal structures and multiple control chains are examples (Faccio and Lang, 2002). It has been found that the expropriation of corporate assets is discouraged if cash-flow rights are concentrated, at the same time increasing future valuations (Laeven and Levine, 2008). Excess control rights facilitate potential tunneling activities and other moral hazard activities by large shareholders (Lin et al., 2011). Examples of tunnelling activities pertain to several forms of self-dealing transactions, e.g. selling assets to listed companies at high prices, or the transference of assets and profits out of companies (Wang and Xiao, 2011; Lin et al., 2011). Tunneling does not only occur in emerging markets, but also in countries with effective civil law enforcement (Johnson et al., 2000). These tunneling activities increase the risk of financial distress, but there is a reverse causality as high financial distress risk also increases shareholders' tunneling incentives. (Lin et al., 2013). This is due to shareholders preferring to secure their money if a firm experiences financial distress. Excess control rights could therefore lead to large shareholders expropriating company resources, thereby negatively influencing firm performance (Maury and Pajuste, 2005). The first hypothesis is therefore as follows:

Hypothesis 1: Excess control rights of the largest owner have a negative effect on firm performance.

The literature has found mixed evidence on the influence of ownership concentration on firm performance. Denis and McConnell (2003) state that concentrated ownership often has a positive effect on firm value, but it may vary per country of blockholder identity. Hamadi and Heinen (2015) conducted a study in Belgium and found that the effect of ownership concentration on firm value is non-monotonic. Although ownership concentration in Belgium is characterized by voting blocks and business groups (Hamadi and Heinen, 2015), the outcome of this research may still be interesting as the Netherlands is also characterized by relatively high ownership concentration (Kabir et al., 1997). The non-linearity found in their study is related to the thresholds of disclosure of control that are prevalent in Belgium law. The Netherlands also has some thresholds after which firms should announce their level of shareholdings to the AFM, the Dutch financial authority. The levels of disclosure of shareholdings pertain to at 3%, 5%, 10%, 15%, 20%, 25%, 30%, 40%, 50%, 60%, 75% and 95% (Register substantial holdings, AFM). A company is obliged to announce its level of shareholdings to the AFM is it exceeds of falls below one of the thresholds.

Krivogorsky (2006) studied ownership concentration in European firms that were foreign U.S. registrants, but no strong relationship between blockholders and firm's profitability measures has been found. Krivogorsky (2006) argues that this may be due to blockholders experiencing their own agency problems, which has also been found by Black and Coffee (1994), who describe that shareholders need to balance the costs and benefits of their actions. However, she did not include institutional shareholdings in her measure of blockholders' influence, which may lead to less robust results in this sense. Oppositely, Donker et al. (2009), who studied the impact of ownership structure on financial distress of Dutch listed firms, found evidence that outside blockholders reduce the probability of financial distress, probably due to their possibilities to control management. In addition, Busta et al. (2014), have found a positive relationship between blockholder ownership and Return on Assets (ROA) in Western-European banks, as their investors will have an incentive to protect profit margins.

Overall, large owners are inclined to control management, as they have an interest in having a company operating well. However, after some threshold of shares owned by a single large shareholder, large owners may become too entrenched and they may even tend to extract private benefits of control. This is especially the case if the largest shareholder holds more control rights than cash-flow rights. Therefore, it is hypothesized that ownership concentration will first have a positive effect on firm performance, but after some point is will turn into a negative influence, thereby following a quadratic relationship with firm performance.

Hypothesis 2: Ownership concentration follows a quadratic relationship with firm performance.

Ben-Nasr et al. (2015) state that a growing number of studies show that multiple large shareholders can limit the expropriation behavior of the controlling shareholder. In addition, Maury and Pajuste (2005) have found empirical evidence that contestability of the largest shareholder by a second largest shareholder limits the expropriation of minority shareholders. Therefore, multiple large shareholders are assumed to serve as a powerful control mechanism. Although multiple large shareholders are less common in large corporations, it has been found that 34% of European firms have at least two large shareholders (Laeven and Levine, 2008). Multiple large shareholders with comparable voting power alleviate a firm's agency costs, probably due to the high control contestability that may enhance a firm's information quality (Attig et al., 2008). Therefore, multiple large shareholders can limit the expropriation behavior of the largest shareholder, thereby increasing firm performance. The following hypothesis is therefore derived:

Hypothesis 3: Multiple large shareholders have a positive effect on firm performance.

2.3 Ownership identity

As stated by Denis and McConnell (2003), it is important to know the identity of large shareholders. According to these researchers, there is evidence that the relationship between ownership concentration and firm performance depends on who the shareholders are. As the Netherlands is a rather market-based economy, the primary role is left to the institutional investors (Aguilera and Jackson, 2003). Therefore, it is assumed that institutional shareholdings are prevalent in the Netherlands. Family ownership is of particular importance in Western Europe, as many firms are found to have high family shareholdings (Faccio and Lang, 2002), which provides a reason for studying family ownership in Dutch firms. Managerial shareholdings are said to decrease agency costs as the interests of outside shareholders and managers will become aligned via this. Therefore, managerial shareholdings will be integrated in this study as decreased agency costs are found to enhance firm performance. These three ownership identities will be discussed in the subsequent sections.

2.3.1 Institutional ownership
As previously mentioned, the Netherlands is a rather market-based economy, in which the primary monitoring role is left to the institutional investors (Aguilera and Jackson, 2003). Therefore, it is important to study the influence of institutional shareholders, i.e. banks, insurance companies, pension funds and mutual funds (Kabir et al., 1997). Banks are considered as 'delegated monitors' who are specialized in gathering firm

information (Park, 2000; Boehmer, 2000). However, the monitoring of firms increases the banks' monitoring costs, which will eventually lead to higher costs of debt for the borrower (Lin et al., 2011). Monitoring institutions demand conservatism in financial reporting as institutional investors understand the value of the associated governance benefits (Ramalingegowda and Yu, 2012). Accounting conservatism has been found to improve investment efficiency as it facilitates a firm's access to debt financing due to firms not overestimating its earnings (Garcia Lara et al., 2016). Higher levels of institutional ownership are related to greater management disclosure due to shareholders requesting it, which will lead to lower information asymmetry that lies at the heart of agency problems (Boone and White, 2015). In addition, Shuto and Takada (2010) have found that accounting conservatism decreases agency problems between shareholders and management, as managers will not overstate the earnings in order to extract private benefits. This will lead to more transparent business and more possibilities for control, thereby potentially having a positive effect on firm value.

Nevertheless, Donker et al. (2009) have not found evidence for a relationship between higher levels of institutional shareholdings and a lower probability of financial distress in the Netherlands. They argue that this is due to institutional shareholders being relatively passive in the Netherlands. However, literature reports that bank monitoring complements shareholders' monitoring of management. (Ang et al., 2000). In line with this, Krivogorsky (2006) has found a strong positive relationship between institutional shareholdings and profitability, which is probably due to relational investing being a complementing mechanism for a weak market for corporate control in the Netherlands.

As the literature proposes that institutional ownership may enhance firm value due to better access to monitoring and accounting conservatism, there is evidence for institutional ownership having a positive effect on firm performance. The following hypothesis is therefore derived:

Hypothesis 4: Institutional ownership has a positive effect on firm performance.

2.3.2 Family ownership
According to Faccio and Lang (2002), 44.3% of the Western European firms are controlled by family owners. It has been found that in Western Europe, active family control is associated with higher profitability compared to non-family firms (Maury, 2006). The same has been found in a study only including German firms, as Andres (2008) found that family firms are more profitable than widely-held firms, but also perform better than firms with other types of shareholders. However, there has not been found statistically significant evidence in the Netherlands that firms with family owners are more or less likely to experience financial distress (Donker et al., 2009). According to Anderson and Reeb (2003), families are often long-time investors as their ownership is held through multiple generations. However, family shareholders with high levels of shareholdings often tend to be risk-averse as they invest for the long-term, which may lower firm performance if they tend to forego risky investment opportunities (Hamadi and Heinen, 2015). In addition, Fama and Jensen (1983) have found that family owners may extract private benefits from minority shareholders, which is called expropriation. Family ownership has been found to have a positive effect on firm performance, but literature states that this performance may decline after some level of shareholdings due to families tending to extract private benefits. This is therefore also proposed in the following hypothesis.

Hypothesis 5: Family ownership follows a quadratic relationship with firm performance.

2.3.3 Managerial ownership
The relationship between managerial ownership and performance has been studied oftentimes by the use of different data and various measures of performance and ownership structure (Coles et al., 2012). One of the first studies on this relationship found that the lower levels and the very high levels of managerial ownership have a positive effect on firm performance through the alignment of interests between inside and outside shareholders, whereas intermediate levels of managerial ownership have a negative effect on performance due to the entrenchment effect (Morck et al., 1988). The entrenchment effect occurs if managers pursue private benefits instead of maximizing shareholders' value (Claessens et al., 2002). There is significant evidence of there being a negative relation between management entrenchment and firm value (Mathur et al., 2013). Empirical evidence shows that Dutch firms with a higher level of managerial shareholdings have a higher chance to experience less financial distress, as well-considered decisions will also enhance managers' personal wealth (Donker et al., 2009). However, Krivogorsky (2006) found no strong relation between managerial ownership and profitability, probably due to relational investors acting as a counterweight to managerial decisions.

With lower levels of managerial shareholdings, it is proposed that managers have an incentive to act in accordance with shareholders' wants due to the incentive effect, but after some level of managerial ownership, the entrenchment effect will be present.

Hypothesis 6: Managerial ownership follows a quadratic relationship with firm performance.

3. METHODOLOGY
3.1 Variables
3.1.1 Dependent variables
The aim of this research is to identity the influence of ownership concentration and ownership identity in firm performance. In this study, firm performance will be measured by the use of four different variables: Return on Assets (ROA), Return on Equity (ROE), Market-to-book value (MTB) and Earnings per share (EPS). According to Krivogorsky (2006), Return on Assets, Return on Equity and Market-to-book ratio are a firm's profitability measures. The Return on Assets (ROA) and Return on Equity (ROE) are accounting rates of return (Krivogorsky, 2006). The ROA can be measured by taking the net income to total assets (Hamadi and Heinen, 2015), whereas the ROE can be measured by taking the net income to total equity. As the ROA and ROE reflect accounting returns, it may be that they do not precisely reflect the financial status of a company. The Market-to-book overcomes this shortcoming as it shows the extent to which the future performance is not currently reflected in the books (Krivogorsky, 2006). The market-to-book ratio can be used as a proxy for Tobin's Q (Hamadi and Heinen, 2015) and is measured by the end year market capitalization to total assets. Earnings per share is often perceived as an indicator of share value, therefore interesting for investors (Casson and McKenzie, 2007). Earnings per share is computed as the ratio of net income to total assets.

3.1.2 Independent variables
The independent variables used in the study pertain to measures of ownership concentration, multiple large shareholders, control-ownership wedge, institutional ownership, family ownership and managerial ownership. One way to measure ownership concentration is via the percentage shares of the largest shareholder (Hamadi and Heinen, 2015). In addition, ownership concentration can be measured by taking the total percentage of

a firm's shares of blockholders who hold at least 5 percent of the outstanding shares (Krivogorsky, 2006; Busta, 2014). As the literature generally considers ownership to be concentrated if the largest shareholders holds over 10 percent of the voting rights (Hamadi and Heinen, 2015), this will be added as a dummy variable. The reasons for choosing multiple variables to measure the same construct is to ensure more robust results. It is expected that these measures of ownership structure follow a quadratic relationship with firm performance due to the incentive and entrenchment effect. Multiple large shareholders may act as a counterweight against the largest shareholder as it may prevent expropriation of firm resources from occurring. Therefore, it is expected that multiple large shareholders have a positive effect on firm performance. Multiple large shareholdings will be measured by taking the percentage shares of the second largest shareholder (Hamadi and Heinen, 2015) as well as a dummy variable that equals one if the firm has at least one owner, besides the largest owner, that holds over 10 percent in control rights (Lin et al., 2013). The control-ownership wedge will be measured by taking the difference between cash flow and control rights of the largest owner (Lin et al., 2013). Another measure applied is the ratio of the largest shareholder's voting rights over cash-flow rights (Jiang et al., 2011). In addition, the control ownership wedge will be measured by a dummy variable, which equals one if the largest shareholder holds more control rights than cash flow rights (Connelly et al., 2012). It is expected that shareholders with excess voting rights have a negative effect on firm performance due to the entrenchment effect. The largest shareholder will then be able to extract private benefits of control out of the firm. Institutional ownership will be measured by taking the number of shares held by institutions divided by the total number of shares outstanding (Krivogorsky, 2006). Institutional shareholders comprise banks, insurance companies, pension funds and mutual funds. These institutional investors are expected to have a positive effect on firm performance as they have superior access to information and request accounting conservatism. Family ownership will be measured by taking the percentage of shares held by the family (Donker et al., 2009) and by a dummy variable if the family is the largest owner of the firm (Lin et al., 2013). Family ownership is also expected to follow a quadratic relationship with firm performance, as family owners with large stakes are often risk-averse and tend to forego investment opportunities which may have a negative impact on firm performance in the longer run (Hamadi and Heinen, 2015). Managerial ownership will be measured by computing the percentage shares of managerial shareholders (Krivogorsky, 2006; Donker et al., 2009). Managerial ownership has been hypothesized to follow a quadratic relationship with firm performance due to the incentive effect at first and the entrenchment effect after some point, as managers may extract private benefits out of the organization when having large shareholdings.

3.1.3 Control and dummy variables

The results of this study may vary due to some firm-specific circumstances, which need to be controlled for. Firm age since the firm's founding will be added as a control variable, following the logic of Connelly et al. (2012). In addition, there will be controlled for leverage, which will be measured by taking the sum of long term debts and debt in current liabilities divided by total assets (Lin et al., 2013; Krivogorsky, 2006). It is important to include this ratio as a control variable as borrowing increases a firm's financial risk. The third variable that will be controlled for is the logarithm of total assets (Hamadi and Heinen, 2015; Lin et al., 2013; Connelly et al., 2012). For example, Donker et al. (2009) have found that distressed firms are overall smaller in size and Claessens et al. (2002) state that firm size is positively

related to firm value as larger firm has a better disclosure and a more diversified portfolio. Firm size will also be measured by taking the logarithm of firm's sales (Margaritis and Psillaki, 2009). Following Jiang et al. (2011), year dummies as well as industry dummies will be added to the analysis as to control for the three years (2012-2014) and for the different industry sectors included. A complete overview of the variables used in the test can be found in Appendix 1.

3.2 Research model

This research aims to test the relationship between ownership structure measures and firm performance in the Netherlands. Following the methodology of Krivogorsky (2006), Jiang et al., (2011) and Rawalingegowda (2012), the initial research model that will be used is:

Firm performance (ROA, ROE, MTB, EPS) $_{it}$ = α_0 + β_1* *OWNCON1* $_{it}$ + β_2*OWNCON2 $_{it}$ + β_3*MLS $_{it}$ + β_4*WEDGE1$_{it}$ + β_5*WEDGE2 $_{it}$ + β_6*INST $_{it}$ + β_7*FAM $_{it}$ + β_8*MAN $_{it}$ + β_9*AGE $_{it}$ + β_{10}*LEV $_{it}$ + β_{11} * LASSETS $_{it}$ + β_{12}*LSALES + β_{13} * Yeardummies $_{it}$ + β_{14} * Industrydummies + ε $_{it}$

where i is used to differentiate between different firms and t is used to reflect on the time period, i.e. 2012-2014. First, a Pearson-correlation test will be conducted in order to detect correlations between the different variables used (Krivogorsky, 2006). In order to find out the influence of the independent variables on firm performance, ordinary least square (OLS) regression will be applied (Lin et al., 2013; Krivogorsky, 2006). This will give an overview of whether the coefficients have a statistically significant relationship with firm performance. The β-coefficients will also be tested on economic significance, as they need to make sense related to previously studied literature and empirical evidence. Before ordinary least square regression can be applied, influential outliers have to be removed and multiple robustness checks must be performed. Since the data covers three subsequent years, autocorrelation among the variables must be tested for. This can be done by the use of the Durbin-Watson test (Thomsen and Pedersen, 2000). Other robustness checks relate to multicollinearity, normality and heteroscedasticity (Krivogorsky, 2006). Multicollinearity will be measured via the "variable inflation factor". Especially the variables with a Pearson correlation higher than 0,3 are worth investigating (Krivogorsky, 2006). As long as the variable inflation factor does not exceed 10, the variables can be used in the same model as multicollinearity is then not a large issue. Normality will be measured via the Shapiro-Wilk test, and via histograms. Heteroscedasticity can be measured by the histograms of the standardized residuals, as well as the P-P plot and scatterplot of these residuals. In addition, variables have to follow (more or less) linear relationships with each other, which will be checked for via the use of scatterplots (De Veaux et al., 2014). If this is not the case, variables will be re-expressed as to be able to perform linear regression. After running the initial research model, some other models will also be tested by the use of regression analysis in order to identify the optimal research model, as well as the influence of ownership concentration and ownership identity separately. In addition, a couple of t-tests will be performed with the dummy variables created during this research, which pertains to ownership concentration, multiple large shareholders and control-ownership wedge. A t-test is useful in discovering differences in means between two different samples. In order to perform the t-test, the data will be checked for independence, randomization and the nearly normal condition.

4. DATA

This research will analyze firms over the period spanning from 2012 till 2014. The initial sample consists of all Dutch publicly

Table 1 Descriptive statistics

Variable	Mean	Median	Standard deviation	Minimum	Maximum	Number of observations
Dependent variables						
ROA Net Income (ROA)	2,581	2,255	7,164	-17,7810	39,645	231
ROE Net Income (ROE)	5,190	7,180	17,935	-57,335	71,051	232
Market-to-book ratio (MTB)	,676	,580	,542	0	2,846	230
Earnings per share (EPS)	0,6961	0,587	1,775	-7,621	6,449	233
Independent variables						
Ownership concentration 1 (%) (OWNCON1)	23,117	18,430	17,307	0	79,500	237
Ownership concentration 2 (%) (OWNCON2)	45,017	43,610	25,500	0	95,600	240
Multiple large shareholders (%) (MLS)	9,162	9,080	5,502	0	24,300	239
Control-ownership wedge 1 (WEDGE1)	0,103	0	3,604	-17,870	18,350	240
Control-ownership wedge 2 (WEDGE2)	,965	1	,221	0	2,11	231
Institutional shareholdings (%) (INST)	14,296	13,320	12,038	0	52,300	233
Family shareholdings (%) (FAM)	5,191	0	14,137	0	63,010	240
Managerial shareholdings (%) (MAN)	2,533	0	8,631	0	57,310	237
Control variables						
Firm age (AGE)	55,295	34,000	52,358	0	277	237
Leverage (LEV)	0,449	0,473	0,212	0	,991	238
Log assets (LASSETS)	5,866	6,011	1,213	1,910	9,070	240
Log sales (LSALES)	5,753	5,924	1,031	1,790	7,710	185

listed firms with their main listings on the Amsterdam Euronext index during that particular timespan. The initial dataset, therefore, consists of data from 99 firms from all different industries and sizes. If no data can be found for a certain firm in a certain time period, or if the IPO-date found place after 2012, these firms and/or years will be deleted from the dataset. The firms included may still be publicly listed at the time this article has been written, but this has not been set as a requirement for this study. Data on performance, i.e. Return on Assets, Return on Equity, Market-to-book value and Earnings per share, and on the control variables age, leverage, size and industry will be gathered from ORBIS, a financial database provided by Bureau van Dijk. This will be done in order to ensure consistency throughout the research. The data on ownership structure will be extracted from both the AFM (Dutch financial authority) and firms' annual reports. Annual reports are particularly helpful for finding out who the firm's largest shareholders are and to identify their identity. It also helps in finding background information about shareholders' identities as annual reports for example mention the managerial or family shareholdings explicitly. ORBIS contains some data on ownership structure, but this is often incomplete and will therefore not be used. The reason for using the database of the AFM is that Dutch firms are obliged by law to announce to the AFM if a shareholder possesses more than three percent of the total shares outstanding (since 2013), so it is assumed to be the most up-to-date and reliable source for data on ownership structure. Other thresholds are set at 3%, 5%, 10%, 15%, 20%, 25%, 30%, 40%, 50%, 60%, 75% and 95% (Register substantial holdings, AFM). The data of the AFM is publicly accessible but not all changes in the number of shares a certain owner possesses are shown, as the change does not always exceed or fall below a certain threshold. Therefore, this data will also be cross-checked as much as possible. As often little information is available on changes in ownership data throughout the year, all data will be measured at the end of each book year in order to achieve consistency. Only the shareholdings over 3 percent are included in this research, as this is the lowest threshold for disclosure.

5. RESULTS
5.1 Descriptive statistics
An overview of the descriptive statistics can be found in Table 1. The dependent variables show a skewness as the mean differs from the median. The median is in this instance a better predictor of the average firm performance as it is less sensitive to outliers. The ownership concentration measures indicate that the Netherlands have a high level of ownership concentration, as the largest shareholder of a firm holds on average 23,12 (18,43) percent of the firm's shares. This high level of ownership concentration has also been found in previous studies conducted in the Netherlands or Western Europe. In 80,8 percent of the cases, the largest shareholder holds over 10 percent of shares of the firm. All the large shareholders (with shareholdings over five percent) together hold on average 45,02 (43,61) percent of the shares. On average, the second largest owner of the firm (MLS) holds 9,16 (9,08) percent of the shares. In 42,1 percent of the cases, this second largest shareholder holds over 10 percent of the total shares outstanding. The average wedge (WEDGE1) is rather small (0,103), but positive. This indicates that shareholders who do not have similar cash flow rights as control rights, on average hold slightly more control rights. As the literature predicts, shareholders are inclined to obtain excess control rights (Laeven and Levine, 2008), which is in line with what has been found here. In this research, voting rights have a mean of 23,56 percent whereas cash flow rights have a mean of 23,49 percent. Not shown in this table is that a wedge is present in 44 cases, which pertains to 18,3 percent of the total cases. In 24 of these cases, the control rights of the largest shareholder outweigh the cash flow rights. On average, institutions (INST) hold 14,3 (13,32) percent of the total shares. This indicates that institutions are prevalent shareholders in the Netherlands, which aligns with the literature. Not displayed in the table is that banks hold on average 2,76 (0) percent of the shares, insurance companies 3,5 (0) percent, and pension funds and mutual funds holds 9,33 (5,69) percent of the total shares outstanding. Families (FAM) hold on average 5,19 (0) percent and managers (MAN) 2.53 (0) percent. There have been found 36 cases with family shareholdings and 26 cases with managerial shareholdings. The

Table 2 Pearson correlations

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
[1]	1,000															
[2]	**,870**	1,000														
[3]	**,408**	**,325**	1,000													
[4]	**,609**	**,655**	**,199**	1,000												
[5]	,142	,069	-,021	,132	1,000											
[6]	,132	-,009	-,040	,002	**,676**	1,000										
[7]	,088	-,015	-,020	-,013	**,191**	**,614**	1,000									
[8]	,001	-,003	,072	**,227**	-,021	-,033	,013	1,000								
[9]	,059	,080	-,022	,130	,114	,094	,025	**,665**	1,000							
[10]	**,213**	,158	,160	,149	**-,256**	,087	**,215**	,076	-,076	1,000						
[11]	,105	,102	,138	,129	**,294**	**,175**	,156	,015	,055	-,152	1,000					
[12]	-,054	-,073	,079	-,167	**,187**	**,201**	,135	,036	,045	-,137	**,230**	1,000				
[13]	-,013	,044	-,074	,033	,034	,033	-,009	-,146	-,031	,161	-,044	-,131	1,000			
[14]	-,102	**-,202**	,004	**-,184**	,036	,138	**,190**	-,076	-,024	,042	,061	,066	-,048	1,000		
[15]	,045	**,206**	-,134	**,275**	**-,227**	**-,360**	**-,266**	,101	,012	,128	,123	**-,189**	**,243**	**-,197**	1,000	
[16]	,129	**,213**	,099	**,226**	**-,267**	**-,329**	**-,206**	-,013	,045	,181	,159	-,128	**,365**	**,256**	**,893**	1,000

Significant at the 0,01 level.

[1] ROA Net Income, [2] ROE Net Income, [3] Market to book ratio, [4] Earnings per share, [5] Ownership concentration 1, [6] Ownership concentration 2, [7] Multiple Large Shareholders, [8] Control-ownership wedge 1, [9] Control-ownership wedge 2, [10] Institutional shareholdings, [11] Family shareholdings, [12] Managerial shareholdings, [13] Firm age, [14] Leverage, [15] Log assets, [16] Log sales

relatively small share of families is not in line with the literature as Faccio and Lang (2002) have found that 44.3 percent of Western European firms are controlled by families. The low number of managerial shareholdings relates to managers holding oftentimes less than 3 percent of the total shares outstanding, thereby being excluded from this research. The companies in the sample are on average founded 55 (34) years ago (AGE). The average leverage level (LEV) of 0,45 (0,47) indicates that companies have on average 0,45 euros of debt per unit of asset. Many variables show a minimum value of zero. The ownership concentration variables are only valuable if a firm has at least one shareholder with shareholdings over 5 percent, as otherwise there is no concentration of ownership. As some firms did not have this, a 0 was listed. There were also many firms who did not have any institutional, family, or managerial shareholdings which is the reason why the minimum value pertains to 0.

5.2 Univariate tests

Table 2 reports Pearson correlations among the variables included in this study. The very high correlations (significant at the 0,01 percent level) are made bold. As expected, there is a high correlation between all the firm performance indicators, i.e. ROA, ROE, MTB and EPS. In addition, there is a significant high correlation between the two ownership concentration measures (0,676), which is due to these two reflecting the same construct. The same holds true for the variables ownership concentration 2 and multiple large shareholders (0,614) and wedge 1 and wedge 2 (0,665). Ownership concentration 1 also very positively relates to family ownership (0,294), which may indicate that in the case of family ownership, the family is also oftentimes the largest shareholder in the firm. Family shareholdings and managerial ownership have a high positive correlation with each other (0,230), which may indicate that family members are often on the management board. Firm age has a significant correlation with assets (0,243) and sales (0,365). This may indicate that older firms are oftentimes larger. As expected, firm's assets and firm's sales have a high positive correlation (0,893) with each other, as these both reflect the control variable firm size. A significant negative correlation has been found between ownership concentration 1 and institutional shareholdings (-0,256). This

may indicate that the largest shareholder of the firm is often not an institutional shareholder. Significant negative correlations can be found between ownership concentration 2 and firm's assets (-0,360) and firm's sales (-0,329). This shows that firms with high ownership concentration have a lower level of assets and sales and are therefore smaller in size. It may be that larger firms do not like to be controlled by larger shareholders, or that large shareholdings have a negative performance on firm performance. This view is supported by the correlation between ownership concentration 1 and assets (-0,227) and sales (-0,267) and multiple large shareholders and assets (-0,266) and sales (-0,206).

5.3 Robustness tests

As this research aims at identifying the influence of ownership structure on performance, ordinary least squares regression will be applied. This test is particularly helpful in finding out how much influence the independent and control variables exert on the different measures of firm performance. However, in order for ordinary least square regression to be useful, some basic requirements have to be fulfilled. These requirements pertain to autocorrelation, multicollinearity, normality, heteroscedasticity and linearity, and will be discussed respectively.

Autocorrelation can be measured by the Durbin-Watson test, of which the outcomes are shown in Table 3 and Appendix 2. If no autocorrelation is present, the Durbin-Watson equals 2. Values nearby 0 indicate positive autocorrelation, whereas values nearby 4 indicate negative autocorrelation. As can be seen in both tables, the Durbin-Watson test does not show strong autocorrelations. Therefore, autocorrelation does not appear to be a problem.

If variables exert influence on each other, the regression results will be less reliable. Multicollinearity can be measured via the variable inflation factor (VIF) and by taking a look at the correlation matrix. Following Krivogorsky (2006), the variable inflation factor is especially important for variables with a Pearson correlation above 0,3 as these are variables worth investigating. After checking for multicollinearity, it appears that it is not an issue in this research as the maximum variable inflation factor does not exceed 6,305 in the original research

Table 3 Regression results

	Model 1				Model 2			
	ROA	ROE	MTB	EPS	ROA	ROE	MTB	EPS
OWNCON1	,153	,422	,003	0,046	,120	,323	,003	,036
	(2,776***)	(2,935***)	(,716)	(3,544***)	(3,401***)	(3,564***)	(1,122)	(4,451***)
OWNCON2	-,545	-1,458	-,020	-,111				
	(-,904)	(-,937)	(-,459)	(-,781)				
MLS	1,174	2,253	-,074	,244	,713	,929	-,076	,138
	(1,239)	(,938)	(-1,127)	(1,074)	(1,220)	(,619)	(-1,755*)	(,987)
WEDGE1	-,276	-,725	,031	,046	,005	-,155	,015	,087
	(-,892)	(-,902)	(1,438)	(,625)	(,031)	(-,390)	(1,326)	(2,500**)
WEDGE2	3,719	8,004	-,357	,450				
	(1,117)	(,925)	(-1,507)	(,551)				
INST	,148	,292	0,008	,010	,107	,198	,007	,007
	(2,372**)	(1,770*)	(1,696*)	(,695)	(2,039**)	(1,439)	(1,794*)	(,589)
FAM	,000	,000	,000	,000				
	(,472)	(,182)	(2,133**)	(-,737)				
MAN	-,090	-,116	0,002	-,030	-,091	-,129	,002	-,033
	(-1,408)	(-,701)	(,373)	(-2,256**)	(-1,491)	(-,813)	(,597)	(-2,557**)
AGE	-,020	-,053	-,001	,000	-,016	-,043	-,001	,000
	(-1,306)	(-1,310)	(-1,011)	(-,086)	(-1,121)	(-1,134)	(-1,346)	(,015)
LEV	-11,982	-18,177	-,863	-2,233	-12,133	-17,701	-,997	-2,199
	(-3,122***)	(-1,859*)	(-3,386***)	(-2,645***)	(-3,422***)	(-1,946*)	(-4,019***)	(-2,794***)
LASSETS	-1,449	1,633	-,260	,258	-1,144	2,630	-,240	,337
	(-1,149)	(,496)	(-2,891***)	(,842)	(-,980)	(,867)	(-2,769***)	(1,177)
LSALES	2,912	4,697	,300	,317	2,843	3,967	,319	,224
	(2,251**)	(1,385)	(3,299***)	(1,038)	(2,429**)	(1,297)	(3,711***)	(,805)
Adjusted R^2	,150	,123	,178	,272	,168	,136	,180	,303
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Durbin-Watson	2,027	1,853	1,038	1,710	1,995	1,854	1,115	1,703
N	165	166	168	166	171	172	173	172

Notation: b(t)   * Significant at the 10% level   ** Significant at the 5% level   *** Significant at the 1% level

model. As long as this factor does not exceed 10, it can be assumed that the variables do not hold too strong correlations among each other and therefore the original model can be tested without any multicollinearity issues.

It is important to check whether the variables used in the model show a close to normal distribution. This will prevent outliers from exerting influence on the statistical results. Normality is checked for via the histograms and via the Shapiro-Wilk test that provides a Normal Q-Q plot of the variables. Overall, all the variables show a relatively normal distribution after re-expression and therefore the initial research model can still be run without normality problems.

Heteroscedasticity relates to a normal distribution of the standardized residuals in which no clear pattern can be identified. All the variables included in this research have been tested by checking the histograms, the P-P plots and the scatterplots of the standardized residuals. All the histograms show a normal distribution. In addition, the P-P plots show a near/relatively straight line and the scatterplots show no clear pattern. Therefore, heteroscedasticity is no problem in this research.

In order for ordinary least square regression to yield the best results, the variables must be linearly related to one another. Linearity can be assessed by plotting the variables into a scatterplot. If a linear relationship can be identified, the variables

are good to use. After re-expression of the variables, all of them are relatively close to linear and do not show a different pattern.

5.4 Multivariate tests

The results of the regression analysis can be found in Table 3. The Adjusted R^2 shows that the initial model (Model 1) used in this research explains between 12,3 and 27,2 percent of the variance in firm performance. Consistent with the first hypothesis of excess control rights having a negative effect on firm performance, the variable control-ownership wedge 1 (WEDGE1) negatively correlates with ROA and ROE. This was also expected by literature as excess control rights facilitate tunneling effects, which may eventually lower firm performance. However, control-ownership wedge 1 has a positive influence on MTB and EPS. The results are therefore not unambiguous on this issue. The variable control-ownership wedge 2 (WEDGE2), however, oftentimes has a positive influence on firm performance, though not statistically significant. Consistent with the second hypothesis, the regression table indicates that multiple large shareholders (MLS) often have a positive influence on firm performance. However, when taking a look at the scatterplot, a quadratic relationship could be identified between multiple large shareholdings and firm performance. This relationship is even significant at the 1 percent level. In these figures, firm performance declines after share ownership of 10-12 percent of

shares for the second largest owners. Therefore, the second hypothesis has to be rejected, as the literature and previous studies show that multiple large shareholders have a positive effect on firm performance. The third hypothesis pertains to a quadratic relationship between ownership concentration and firm performance. As can be seen in the regression table, ownership concentration 1 (OWNCON1) follows a significant positive relationship with firm performance measured by ROA ($t = 2,776$, $P < 0,01$), ROE ($t = 2,935$, $P < 0,01$) and EPS ($t = 3,544$, $P < 0,01$). This is not in line with the proposed hypothesis and previous studies as oftentimes a quadratic relationship has been found. This has also been acknowledged by the literature on incentive and entrenchment effects (e.g. Bennedsen and Nielsen, 2010). However, when taking a look at the scatterplot of ownership concentration 2 (OWNCON2), a clear quadratic relationship can be identified, which indicates that between 40 and 50 percent, the entrenchment effect kicks in. After this point, performance declines. This quadratic relationship is significant at the 5 percent level, which is in line with the third hypothesis. Consistent with the fourth hypothesis, institutional ownership (INST) has a positive effect on firm performance. The relationship is significant when measuring performance by ROA ($t = 2,372$, $P < 0,05$), ROE ($t = 1,770$, $P < 0,10$) and MTB ($t = 1,696$, $P < 0.1$). Literature and previous studies are in line with this finding as it has been found that institutional investors demand accounting conservatism, thereby enhancing firm performance (Ramalingegowda and Yu, 2012). The fifth hypothesis stated that family ownership (FAM) follows a quadratic relationship with firm performance. However, this has not been found in the scatterplots. The relationship found is not as expected, as firm performance declines at first but as the family has more than 20 percent of the shares, firm performance starts to increase. This relationship is significant at the 10%-level. It is the opposite of what was expected in the literature as it was proposed that families may expropriate firm assets when having higher levels of ownership (Fama and Jensen, 1983). In addition, it was proposed that families may tend to forego riskier investment opportunities, thereby having a negative effect on firm performance. (Hamadi and Heinen, 2015). Managerial shareholdings (MAN) were hypothesized to follow a quadratic relationship with firm performance. At first, managers have an incentive to act in accordance with shareholders' wants, but after some point of shares the entrenchment effect becomes prevalent (Claessens et al., 2002). However, the different relationships found do not give clear guidance on the relationship. The regression table indicates that managerial ownership is often negatively correlated with firm performance, there even being a statistically significant relationship between managerial ownership and EPS ($t = -2,256$, $P < 0.05$). However, scatterplots show several different relationships. For example, the influence of managerial shareholdings on MTB shows an increase in performance after managerial shareholdings of around 20 percent. However, the influence of managerial shareholdings on EPS shows the opposite as the influence on firm performance turns negative after shareholdings of 20 percent. The difference may pertain to the smaller number of cases with managerial shareholdings included in the research after checking for outliers ($N = 26$). The effect of firm age (AGE) on firm performance is always negative, but not statistically significant. Leverage (LEV) is always negatively related to firm performance. All the measures are statistically significant at the 1 or 10 percent level. The influence of level of assets (LASSETS) on firm performance yields mixed results, as its influence on ROA and MTB ($t = -2,891$, $P < 0.10$) is negative, but its influence on ROE and EPS is positive. The level of sales (LSALES), however, is always positively related to firm performance. The relationship is even statistically significant if measured by ROA ($t = 2,251$, $P < 0.05$)

and MTB ($t = 3,299$, $P < 0.01$). This means that the control variable 'size' as measured by total assets as well as total sales does not provide unambiguous evidence for a certain relationship. Regarding the industry sector, firms within the manufacturing industry overall have a better performance than firms from other industries.

In order to find the model that explains the most variance for each measure of firm performance, trial and error has been applied. The optimal model found (Model 2) pertains to the following:

Firm performance (ROA, ROE, MTB, EPS) $_{it}$ = α $_0$ + β1 * OWNCON1 $_{it}$ + β2 * MLS $_{it}$ + β3 * WEDGE1 $_{it}$ + β4 * INST$_{it}$ + β5 * MAN $_{it}$ + β6 * AGE $_{it}$ + β7 * LEV $_{it}$ + β8 * LASSETS $_{it}$ + β9 * LSALES + β10 * Yeardummies $_{it}$ + β11 * Industrydummies $_{it}$ + ε $_{it}$

This model explains between 13,6 and 30,3 percent of the variance in firm performance, thereby overall yielding better results than the initial research model. However, the coefficients and statistics are relatively the same as in the initial research model, so the outcomes stated in the previous paragraph also apply here.

This research focuses on two large constructs' influence on firm performance, i.e. ownership concentration and ownership identity. Therefore, two research models have been constructed of which the outcomes are depicted in Appendix 2. The first model (Model 3) encompasses ownership concentration measures and is as follows:

Firm performance (ROA, ROE, MTB, EPS)$_{it}$ = α$_0$ + β1 * OWNCON1$_{it}$ + β2 * MLS$_{it}$ + β3 * WEDGE1$_{it}$ + β4 * AGE $_{it}$ + β5 * LEV $_{it}$ + β6 * LASSETS $_{it}$ + β7 * LSALES + β8 * Yeardummies$_{it}$ + β9 * Industrydummies$_{it}$ + ε $_{it}$

As can be seen in the table, ownership concentration measures explain between 12,9 and 26,9 percent of the variance in firm performance. The second research model (Model 4) comprises ownership identity measures, and is as follows:

Firm performance (ROA, ROE, MTB, EPS)$_{it}$ = α$_0$ + β1 * INST$_{it}$ + β2 * FAM $_{it}$ + β3 * MAN $_{it}$ + β4 * AGE $_{it}$ + β5 * LEV $_{it}$ + β6 * LASSETS $_{it}$ + β7 * LSALES + β8 * Yeardummies$_{it}$ + β9 * Industrydummies$_{it}$ + ε $_{it}$

Ownership identity measures are able to explain between 7,6 and 18 percent of the variance in firm performance. The variables included in these models behave more or less the same as in the initial research model, so the results mentioned in the previous paragraphs also apply here. It turns out that the ownership concentration measures are a better predictor of firm performance than the ownership identity measures. However, the model in which the two are integrated together (Model 2) yields higher results than the separate models. Therefore, the two together provide the best explanations for differences in firm performance.

A partial aim of this research is to find out whether firms with large shareholders perform better than firms without large shareholders. The same holds true for multiple large shareholdings and the control-ownership wedge. Therefore, several t-tests will be conducted in order to compare the means of the different groups. In order to perform a t-test, several conditions need to be fulfilled (De Veaux et al., 2014). The independence assumption is fulfilled as the level of shareholdings of one shareholder are independent from the other and per year. This also leads to the independent groups assumption being fulfilled. The nearly normal condition applies as the histograms of the dependent variables follow a normal distribution. However, the randomization condition is difficult to fulfil as all the companies from the sample are taken into account

Table 4 Results t-tests

	Ownership concentration		Multiple large shareholders		Control-ownership wedge	
	Ownership concentration	No ownership concentration	Multiple large shareholders	No multiple large shareholders	Control ownership wedge	No control-ownership wedge
ROA	2,731	1,907	3,476	1,934	2,155	2,626
	(-,674)	(-,674)	(-1,621)	(-1,621)	(,293)	(,293)
ROE	4,607	7,618	5,912	4,690	7,376	4,938
	(1,011)	(1,011)	(-,509)	(-,509)	(-,630)	(-,630)
MTB	,692	,608	,750	,625	,694	,674
	(-,909)	(-,894)	(-1,735*)	(-1,735*)	(-,158)	(-,158)
EPS	,899	,649	,672	,714	1,657	,596
	(,841)	(,841)	(,180)	(,180)	(-2,703***)	(-2,703***)
N	194	46	101	139	24	216

* Significant at the 10% level   ** Significant at the 5% level   *** Significant at the 1% level

in this research. Although this condition is not fulfilled, the 10%-condition is. The number of companies in the sample is way lower than 10 percent of all the companies in the Netherlands. Therefore, the t-tests can still be run without difficulties. The results of the tests can be found in Table 4. Regarding the ownership concentration measure, firms with high ownership concentration, i.e. the largest shareholder holds more than 10 percent of the shares, have a higher average performance according to three measures (ROA, MTB and EPS). This is in line with the regression analysis, which did find statistically significant results. When taking a look at the Levene's test for equality of variances, the ROA is significantly higher for firms with higher ownership structure at the 10 percent level ($P = 0,096$). For three out of four performance measures, the mean is higher when a firm has a multiple large shareholder which holds over 10 percent of the shares. This is in line with the second hypothesis as the second largest shareholder could act as a counterweight against the largest shareholder. The relationship between multiple large shareholdings and the MTB is statistically significant ($t = -1,735$, $P < 0,10$). Levene's test for the equality of variances also finds a statistically significant relationship at the 10 percent level ($P = 0,059$). Regarding the control-ownership wedge, the firms that have a shareholder with excess voting rights have a better ROE, MTB and EPS. This is not in line with what was hypothesized as a shareholder may then be able to reap individual benefits. The relationship between the control-ownership wedge and EPS is statistically significant at the 1 percent level ($t = -2,703$, $P < 0,01$). However, a limitation here is the rather low number of cases with excess voting rights ($N = 24$), but as three out of four performance measures indicate the same direction of the relationship, it can be assumed that the conclusions are still useful. Although not many statistically significant relationships have been identified, all three measures indicate a clear direction of the relationship with firm performance.

6. CONCLUSION

The aim of this research was to answer the following research question: 'What is the influence of ownership concentration and ownership identity on firm performance in the Netherlands?' This research shows that ownership concentration is prevalent in the Netherlands with the largest shareholder owning on average 23 percent of the outstanding shares. All the large shareholders together even hold over 45 percent of the shares. This therefore facilitates the agency problem between majority and minority shareholders from occurring. The results of the regression as well as the t-test, however, indicated a positive relationship between the percentage shares of the largest owner and firm performance, showing that large owners act in the interest of the company. This

is in line with the literature as large owners may be in a good position to control management (Donker et al., 2009). However, the entrenchment effect was not visible here. Nevertheless, the second measure of ownership concentration did indicate the quadratic relationship as hypothesized. This means that if the largest shareholders hold over 40-50 percent of the shares, firm performance will decline. This entrenchment effect has been described by Bennedsen and Nielsen (2010). Majority owners have an incentive to behave opportunistically at the expense of minority owners (Bennedsen and Nielsen, 2010; Morck et al., 1988). In line with this, large shareholders are often inclined to obtain more control rights than cash-flow rights as they may be able to divert corporate resources for private benefits (e.g. Ben-Nasr et al., 2015; Lin et al., 2011; Donker et al., 2009; Claessens et al., 2002). Therefore, it was hypothesized that excess control rights of the largest shareholder have a negative influence on firm performance. However, both control-ownership wedge variables oftentimes show a positive effect on firm performance, both within the regression and within the t-test. An alternative explanation might be that these largest shareholders have an incentive in the company operating well, as they oftentimes also hold a substantial percentage of the cash-flow rights. This concentration of cash-flow rights discourages the expropriation of corporate assets, thereby providing an explanation for higher firm performance (Laeven and Levine, 2008). There have just been found 24 cases in which the voting rights exceeded cash flow rights. This might be due to several takeover defenses present in the Netherlands. As Kabir et al. (1997) describe, technical takeover defenses are relatively strong in the Netherlands. According to them, these technical takeover defense mechanisms, such as limiting voting power, impede hostile takeovers. Limiting voting power might be an explanation for why the control-ownership wedge is not often present at the largest shareholder. Multiple large shareholders are able to limit the power of the largest shareholder according to the literature. Therefore, it was hypothesized that multiple large shareholders have a positive influence on firm performance. In this study, the second largest shareholder holds on average 9,16 percent of the total shares outstanding. However, the results indicated a different relationship than was hypothesized, as a quadratic relationship, statistically significant at the 1 percent level, has been found between multiple large shareholdings and each measure of firm performance. This relationship shows that firm performance decreases after a level of shareholders of 10-12 percent. However, the t-test indicates that the mean firm performance is oftentimes higher with a second largest shareholder than having one owning less than 10 percent of the total shares outstanding. However, these results are not statistically significant, except for the relationship between

multiple large shareholders and the market-to-book ratio. An explanation might be that the regression analysis included less cases than the t-test, as the regression analysis also depended on the outliers that were removed from other variables. The significant quadratic relationship found in the scatterplot is therefore considered as the best indicator of the relationship between multiple large shareholders and firm performance in this instance. The same argument as for ownership concentration could be used for this relationship, as large shareholders may become entrenched after some level of ownership. They may then be inclined to divert corporate resources for private benefits. Institutional shareholdings were hypothesized to have a positive effect on firm performance, due to institutional investors requesting accounting conservatism and therefore greater management disclosure (Ramalingegowda and Yu, 2012). The results also indicate a positive relationship of institutional shareholdings on firm performance. The average level of institutional shareholdings pertains to 14,3 percent, of which banking ownership comprises 2,76 percent, insurance companies 3,53 percent, and pension funds and mutual funds 9,33 percent. Family ownership was hypothesized to follow a quadratic relationship with firm performance as families have an incentive to run the company well so that it can be passed on to next generations (Anderson and Reeb, 2003). However, it was hypothesized that after some point, families may extract private benefits out of the corporation (Fama and Jensen, 1983). In addition, it has been found in previous studies that families tend to be risk-averse which may lead to them foregoing profitable business opportunities (Hamadi and Heinen, 2015). In this research, it was found that family ownership comprises on average to 5,19 percent of the shares. However, family ownership's influence on performance has been found to be negative at first and then it becomes positive after shareholdings of around 20 percent. This may be due to the incentive effect as families with high levels of shareholdings are very eager to work in the best interests of the company, so that it stays a profitable business in the future. Families with little shareholdings may have less incentives to put much effort in having the organization run well as they do not have that much of a financial interest in it. Minority shareholders may be less incentivized to control the firm, possibly due to the free-rider problem (Kabir et al., 1997). The average shareholdings of management comprise 2,53 percent in this sample. It was hypothesized that managerial ownership follows a quadratic relationship with performance. Managers will at first have an incentive to act in accordance with outside shareholders, but after some point they may become too entrenched and extract private resources out of the organization (Claessens et al., 2002). In this research, there has not been found a clear relationship between managerial shareholdings and performance. The regression results table depicts a statistically significant negative relationship between managerial ownership and firm performance in terms of earnings per share. In addition, the scatterplot for these two variables shows the expected relationship, thereby confirming the hypothesis. However, the relationship between market-to-book value and managerial shareholdings is exactly the opposite, where its influence on firm performance becomes positive after managerial shareholdings of 20 percent or more. This is in line with Shuto and Takada (2010) who stated that managers with high levels of shareholdings have an incentive to act in accordance with outside shareholders. The relationship not being straightforward may be due to the relatively small sample size of companies having managerial shareholders after checking for outliers (N = 26). Krivogorsky (2006) has also not found a strong relation between managerial ownership and firm performance, as she argues that relational investors already act as a counterweight to managerial decisions. In total, the measures of ownership concentration and ownership identity as included in the optimal model explain between 13,6 and 30,3 percent of the variation in firm performance in this sample. Ownership concentration measures by itself explain between 12,9 and 26,9 percent of firm performance, whereas ownership identity measures explain between 7.6 and 18 percent of variance in firm performance. The sample size is large enough to draw the aforementioned conclusions based on the findings. The next section will add to the conclusion by discussing the study's practical and literary relevance, as well as the limitations of this research and some guidance for future studies.

7. DISCUSSION

First and foremost, this research adds to the large existing body of research encompassing ownership structure. This study was able to identify some relationships that were expected by literature. However, the outcomes also show different results with regards to the control-ownership wedge, multiple large shareholdings, family ownership and managerial ownership. However, the results have economic significance as all relationships can be explained by literary sources. Previous studies have oftentimes focused on ownership concentration and ownership identity, without reflecting on multiple large shareholdings or the control-ownership wedge, or the other way around. This research attempts to give a full overview of the different ownership structure measurements available. Many variables have been measured in different ways as to ensure more robust results. For example, the two ownership concentration measures revealed different results of which both make sense after considering the literature again. Regarding the practical relevance, it might be especially important for managers to understand why a certain performance can be expected from ownership structure. Having this wisdom may offer a strategic advantage for such companies, as the ownership structure measures included explain between 13,6 and 30,3 of variance in firm performance. Especially knowing that several large shareholders may have a negative effect on firm performance is something that can be taken from this research. However, this research also has its limitations as the ownership data available may not reflect the situation as it really was as shareholders are only obliged to disclose their shareholdings if a certain threshold was exceeded or fallen below. Also the shareholdings of less than 3 percent have not been taken into account, as shareholders are not obliged to disclose their shareholdings. The data on ownership structure has been collected manually, so one cannot fully control for mistakes being made. However, the rather large sample size of 240 cases will limit the influence of possible errors. Nevertheless, some variables, e.g. managerial shareholdings (N = 26), show quite a low number of useful cases. Therefore, future studies may want to focus on more years, but within the course of this project, i.e. 10 weeks, it has not been possible to reflect on more years. The scope could also be broadened as to reflect companies outside the Netherlands, e.g. Western Europe. Other countries in Western Europe also have high ownership concentration, but there are country-specific differences. It might be interesting to see whether studies in other countries yield the same results.

8. ACKNOWLEDGEMENTS

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10. APPENDIX
10.1 Appendix 1

Variables used in the test

Dependent variables	
ROA Net Income (ROA)	Return on Assets; Net income to total assets
ROE Net Income (ROE)	Return on Equity; Net income to total equity
Market-to-book value (MTB)	Market-to-book ratio; End year market capitalisation to total assets
Earnings per share (EPS)	Earnings per share; Net income to outstanding common shares
Independent variables	
Ownership concentration	Percentage shares of single largest shareholder (OWNCON1); total percentage shares of shareholders who hold at least five percent of outstanding shares (OWNCON2)
Multiple large shareholders	Shares of the second largest shareholder (MLS)
Control-ownership wedge	The difference between percentage voting and cash flow rights of the largest shareholder (WEDGE1); ratio of the largest shareholder's voting rights over cash flow rights (WEDGE2)
Institutional shareholdings	Percentage of shares held by institutions (INST)
Family shareholdings	Percentage of shares held by family (FAM)
Managerial shareholdings	Percentage of shares held by managers (MAN)
Control variables	
Firm age	Firm age since the firm's founding (AGE)
Leverage	Short term and long term debts weighted by total assets (LEV)
Size	Log of total assets (LASSETS); log of total sales (LSALES)

10.2 Appendix 2

Regression results

	Model 3 Ownership concentration				Model 4 Ownership identity			
	ROA	ROE	MTB	EPS	ROA	ROE	MTB	EPS
OWNCON1	,081	,254	,000	0,027				
	(2,568**)	(3,175***)	(-,010)	(3,654***)				
OWNCON2								
MLS	1,162	1,791	-,027	,176				
	(2,210**)	(1,349)	(-,702)	(1,368)				
WEDGE1	,058	-,059	,018	,086				
	(,385)	(-,153)	(1,566)	(2,487**)				
WEDGE2								
INST					,114	,167	,006	,008
					(2355**)	(1,311)	(1,717*)	(,698)
FAM					,001	,003	,000	,000
					(1,738*)	(1,402)	(1,946*)	(,935)
MAN					-,070	-,080	,000	-,021
					(-1,094)	(-,488)	(,111)	(-1,512)
AGE	-,010	-,033	-,002	-,001	-,014	-,030	-,002	-,002
	(-,757)	(-,942)	(-1,507)	(-,182)	(-,964)	(-,804)	(-1,704*)	(-,546)
LEV	-12,405	-18,217	-1,105	-2,423	-11,975	-18,457	-1,093	-2,504
	(-3,549***)	(-2,054**)	(-4,480***)	(-3,077***)	(-3,391***)	(-2,009**)	(-4,521***)	(-2,992***)
LASSETS	-1,078	2,759	-,244	,450	-1,686	,949	-,213	,304
	(-,925)	(,924)	(-2,823***)	(1,570)	(-1,462)	(,316)	(-2,547**)	(1,022)
LSALES	2,944	4,185	,346	,229	2,635	3,794	,290	,173
	(2,516**)	(1,387)	(4,028***)	(,819)	(2,186**)	(1,206)	(3,385***)	(,571)
Adjusted R^2	,138	,129	,173	,269	,108	,076	,180	,168
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Durbin-Watson	1,993	1,846	1,149	1,614	1,874	1,741	1,172	1,490
N	174	175	176	175	171	172	173	172

Notation: b(t)   * Significant at the 10% level   ** Significant at the 5% level   *** Significant at the 1% level