CORPORATE OWNERSHIP STRUCTURE AND FIRM PERFORMANCE: EVIDENCE FROM THE NETHERLANDS

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Abstract

This paper examines the relationship between corporate ownership structure and firm performance. For a sample of 100 Dutch firms listed on the Amsterdam stock exchange, we collect data on the shareholdings of the 5 largest shareholders and the total fraction of shares held by insiders. In addition, we collect information on the type of largest shareholder. Using a simultaneous equation model, estimated by three-stage least squares, to control for a potential endogeneity bias, we find a significant positive relationship between the holdings of the largest shareholder and firm performance. Likewise we find a significantly positive relationship for the stake held by insiders. Further testing provides some evidence that this relationship is nonlinear, i.e. at lower stakes insider ownership aligns management with shareholder, whereas at higher stakes entrenchment of management depresses performance. Splitting the sample into different types of owners provides some evidence that financials have a negative impact on performance, while other firms have a positive impact.

Keywords: Ownership structure, Ownership type, Firm performance.

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1. Introduction

The existence and exact nature of the relationship between corporate ownership structure and firm performance has been the subject of considerable debate. This debate has been fuelled by the fact that existing theories either suggest relationships that run in opposite directions or suggest that there is no relationship at all. In addition, empirical evidence has also remained inconclusive, given that the findings for the same market have been contradictory in some cases. Moreover, whether the relationship is linear or whether it takes a more complex form such as curvilinear or even quadratic forms is another issue that has not yet been resolved. However, if a relationship exists, understanding its exact nature has important implications for shareholders as well as public regulators.

Another important issue in this debate is the fact that the nature of the ownership structure depends on the institutional settings within a specific country (see e.g. La Porta et al. (1998)), which may, in its turn, affect the relationship between ownership structure and performance. Indeed, most studies up to date have focussed on the US or the UK, whereas limited evidence exists for other markets. In a European context, Thomsen and Pedersen (2003) consider the ownership structure-performance relationship by pooling data for various countries. Their approach however, does not acknowledge the fact that this relationship can be inherently different in each country, and we therefore argue that it is also important to consider different markets in isolation.

In this paper we address the ownership structure-performance relationship for one specific market, the Netherlands. Besides the fact that this market has received very little coverage in the past, the market is also interesting because of its unique corporate governance structure. While the Dutch market is often classified as Continental European, which are characterized by having highly concentrated ownership, the Netherlands has a more dispersed ownership structure. At the same time, however, ownership structure is not as dispersed as in Anglo-Saxon countries. The Dutch market therefore sits between the more traditional Continental countries and the Anglo-Saxon countries. As there is an ongoing change in terms of the corporate governance of European countries towards the Anglo-Saxon systems, the results of this study may have important implications for these markets as well.

To examine the relationship we consider a sample of 100 Dutch non-financial firms listed on the Euronext Amsterdam at 31 December 2005. For each firm, ownership holdings of the top 1 and 5

shareholders were collected, along with the ownership stake of the firm's insiders.

Employing three-stage least squares regressions, we test the relationship between ownership holdings and two market-driven measures of firm performance: Tobin's Q and book to market value. In addition, we explore the impact of the identity of the largest shareholder on this relationship, because the assumption that all investors pursue value maximisation may not be entirely valid. We examine this impact by splitting the sample according to the identity of the largest shareholder in each company into one of four classifications: insiders, financials, government and other firms.

Our findings show that there is a positive relationship between the percentage of shares held by the largest shareholder and firm value. Equally, there is a positive relationship between Tobin's Q and the percentage of shares held by insiders. However, when we examine the total holdings of the top 5 shareholders the positive relationship disappears. We examine the possibility of non-linear relationships between insider's holdings and firm value by running piecewise linear regressions and find that there is a significant positive relationship for holdings under 1%, an insignificant relationship between 1% and 25% and a negative, and in the case of market to book value significant, relationship above 25%. These findings suggest that below the threshold of 1%, insider ownership aligns interests of shareholders and management. However, as their holdings increase that relationship is eroded until above 25% where it appears that the entrenchment argument takes over. Finally, the sample splits based on the identity of the largest shareholder yields several significant relationship for market to book value. First, larger holdings by financial institutions result in a reduction in firm value, possibly indicating financial institutions are not solely motivated by wealth maximisation. Second, we find an insignificant relationship for insiders and third we find a positive and significant relationship between market to book value and other firm holdings.

The rest of the paper is structured as follows. Section 2 provides a brief discussion of the theoretical arguments concerning the ownership structure-performance relationship and discusses several empirical findings in relationship to these. Section 3 presents the data, discusses the three-stage least squares and the choice of the instruments. Section 4 presents our findings and section 5 concludes.

2. Literature Review

As has been noted frequently in the literature, managers with no personal interest in a firm's performance have few incentives not to expropriate private benefits at the expense of shareholders. This line of thinking has spawned a wealth of literature on ways to address these so called agency costs. One stream of literature has examined how these agency costs can be reduced either by making managers part-owner of the firm, or by inspiring a single owner to increase the monitoring of the company. However, while it is intuitive to believe that ownership structure should make a difference, the direction of the relationship and the reasoning behind it is not certain, nor is it universally accepted that such a relationship exists.

One point of view, suggested by Demsetz (1983), argues that ownership structure should not affect firm performance. He argues that a dispersed ownership structure allows managers to expropriate considerable personal benefits as there is no single investor prepared to accept significant monitoring costs to ensure managers behave appropriately. However, personal benefits are a part of the managerial compensation scheme, and therefore while the manager may get higher personal benefits, their salary will be lower. Also, the amount of personal benefits that may be taken are constrained by the need for managers to maintain the firm's competitiveness, as inadequate actions could result in managers being removed. Fama and Jensen (1983) find a similar result for small shareholdings, although they note that as the insiders shareholding increases, managers may entrench themselves, reducing the fear of dismissal and removing the constraint on performance destroying activities.

In contrast to Demsetz (1983) there are several opposing views. Morck et al. (1988), for instance, offer several arguments that can explain a relationship between firm performance and ownership structure. In particular, Morck et al. re-iterate the work of Jensen and Meckling (1976) in terms of the convergence-of-interests argument. This argument suggests that as managers own a greater share of the company, the firm's performance should increase.

Essentially managers have an increasing stake in the profits generated by the firm and therefore have an interest in ensuring the firm performs well. Conversely however, once management gets a substantial stake, they may be able to entrench themselves resulting in a reduced possibility of censure for poor performance, as argued by Fama and Jensen (1983).

Morck et al. (1988) therefore suggest that the relationship might not be linear and that the level of insider ownership does make a difference. Stulz (1990) offers a theory with similar outcomes but based on different arguments. He argues that firm value is maximised as inside ownership increases as it allows management to stave off takeover offers more easily, increasing the takeover premium required for an outside party to seize control. However, as per Morck et al. (1988), once management reaches a certain level of ownership, their ability to entrench themselves undermines the possibility of a takeover and so reduces value. Both Morck et al. (1988) and Stulz (1990) therefore suggest that the relationship may be curved with increasing performance up to a point where the relationship reverses.

Empirical studies have offered some support to both camps, as well as indicating that the relationship is nonlinear. Demsetz and Lehn (1985), who consider a sample of 511 large US firms in 1980, found no significant relationship between ownership structure and firm performance when fitting a linear relationship. This finding was supported by Himmelberg et al. (1999) who looked at 600 US firms including small cap stocks, even after controlling for fixed firm-effects using panel data. In addition, Lee and Ryu (2003) found no significant relationship for a sample of Korean firms.

In contrast, various studies have found a relationship between ownership structure and firm performance, particularly when they abandon the assumption of linearity and consider the level of insider ownership. Morck et al. (1988), for instance, find that the relationship in the US is initially positive for low levels of insider ownership, then as it increases firm value declines until a second point is reached where the relationship becomes positive again. The two points of inflection in the US occur at 5% and 25% according to Morck et al. (1988). The same pattern is observed for UK and New Zealand firms (Short and Keasey (1999) and Singh Bhabra (2007), respectively), although the points of inflection occur at 12% and 40% for the UK and 14% and 40% for New Zealand. However, other studies have reported different forms of nonlinearity. McConnell and Servaes (1990) employing a sample of US stocks do not find the relationship described in Morck et al. (1988) but rather find that it is a quadratic relationship with no inverse relationship found between 5 and 25%, while Davies et al. (2005) show a quintic relationship holds in the UK. The exact nature of the relationship between ownership structure and firm performance is therefore still an open debate. Most studies do show that the two are related, although the exact nature of the relationship and therefore the underlying explanation remain a mystery. In addition, as noted above, most studies have been conducted in the US and UK, such that as argued by Singh Bhabra (2007), the evidence of other markets may be of great assistance in deciphering the exact relationship.

Identity of the Largest Shareholder

Recent studies have started to look at other factors that may impact on the relationship between ownership structure and firm performance. Miguel et al. (2004) for instance show that differences between countries, in their case Australia, Germany, Japan, Spain, the UK and the US, are the result of differences in the corporate governance regimes within each country. Pedersen and Thomsen (2003) on the other hand argue that the relationship is affected by the identity of the largest shareholder. In particular they examine four categories: persons/families, financial institutions, other firms and governments. The identity is likely to be important given questions about the motivations of certain types of investors. Governments in particular are less likely to be driven by value maximisation, possibly pursuing more socially orientated goals such as subsidising necessities (Perotti (2004)). Equally however other categories may have goals other than wealth maximisation. Financial institutions, for example, may wish to secure other business relations with a company, such as loans, or may have strong links with other stakeholders (trade-unions and governments) (see Monks and Minnow(2001)). Other firms may be seeking advantages from horizontal or vertical integration for their firm rather than strictly seeking value maximisation for the acquired firm.
Given the possibility of conflicting motivations from the largest shareholder, it may be important to investigate differences between shareholders.

3. Methodology, Sample and Data

To investigate the relationship between ownership structure and firm performance we first need to define variables that measure both aspects. In both cases we use several different specifications of the variable as a way of ensuring the robustness of the results.

3.1 Variable Description

Ownership Structure

The literature offers several different ways of measuring ownership structure. Typically, studies either examine the percentage of shares held by all those classified as large shareholders (Pedersen and Thomsen (2003), Demsetz and Lehn(1985)) or they examine the shareholdings of insiders (Himmelberg et al. (1999), Morck et al. (1988) and Singh Bhabra (2007)). Both approaches examine the effects on a manager's decision making and its subsequent effects on firm performance, but do this from a slightly different view. The insider's measures focus on the incentives of management to act in the interests of shareholders, whereas the ownership of large shareholders considers the motivation of owners to monitor and thereby restrict management's actions. In this paper we wish to consider both aspects of ownership structure. We consider the degree of insider ownership by adding the percentage of the company held by employees, members of the board of directors, members of the board of supervision and their families.

Additionally, following Demsetz and Lehn (1985), we use the percentage of shares held by the top 5 shareholders. We also look at the top shareholder by themselves, a measure not employed in Demsetz and Lehn (1985). Finally, we look at the identity of the single largest shareholder by classifying them into one of four categories, insiders, government, financial institutions and other firms, as per Pedersen and Thomsen (2003) (although we replace the individual/family category with insiders). Since all these measures are percentages we use a

logit transformation as in Pedersen and Thomsen (2003).

Firm Performance

To measure firm performance we rely on several market-based measures of firm value. The advantage of using market-based values is that they are less susceptible to manipulation, a well known problem with accounting-based measures. We rely specifically on two measures: Tobin's Q and book to market value. Tobin's Q, the ratio of the firm's market value plus the book value of total debt to the book value of total assets, is one of the most frequently used measure of firm performance. It has also been used extensively in considering the relationship between ownership structure and firm performance e.g. Himmelberg et al. (1999), Morck et al. (1988) and Singh Bhabra (2007). We employ the market to book ratio as a measure of firm performance, as per Pedersen and Thomsen (2003). This represents the added value that the management is creating with the assets of the firm as the difference between the market capitalisation and the equity used in the firm represents the firm's future growth potential. Since both measures have lower bounds, we use a log transformation of this data.

3.2 Methodology

To estimate the relationship between ownership structure and performance we use three-stage least squares (3SLS). This technique has a significant advantage over OLS as it allows us to control for endogeneity due to possible feedback from firm performance to ownership structure. Performance can cause changes in ownership structure as a result of phenomena such as insider information and performance-based compensation. For instance, as management has inside knowledge about the performance of the firm, they may seek to exploit this advantage by acquiring more shares, boosting the insider's percentage of shares as a result of performance. Equally, performance-based contracts act to alter ownership structure by boosting managements ownership if the company performs well (Demsetz and Villalonga (2001)). Since we are interested in the effect of ownership structure on firm performance, we need to control for this potential feedback.

To control for any potential effect of performance on ownership we estimate two equations simultaneously:

$$Ownership = f(Performance_{t-1} + \sigma_{ROE} + \sigma_{ROE^2} + TotalAssets + IndustryPerformance), \quad (1)$$

$$Performance = f(Ownership + SalesGrowth). \quad (2)$$

We estimate the equations above for each combination of the ownership and performance measures. The first equation considers the impact of past performance and other characteristics on ownership structure. As mentioned above there can be a causal relationship from firm performance ownership structure, especially when inside information can be exploited and when share-based performance packages are in place. However, this relationship is likely to be a delayed one, whereby performance last year will affect current ownership. This is because performance-based share plans would gift shares in the current financial year based on last year's performance. As such, we employ the performance measure, either Tobin's Q or Market to Book, on a lagged basis. In this equation we also include measures of firm-specific uncertainty, σ_{ROE} and σ^2_{ROE}, as it has been documented that when firm-specific uncertainty is higher, the agency costs are exacerbated which results in increased ownership as greater monitoring becomes more valuable (Demsetz and Lehn (1985), Pedersen and Thomsen (1999, 2003)). We also include the squared value as a parabolic relation between firm specific uncertainty and the ownership structure has been found. Standard deviation of return on equity is calculated by taking the standard deviation of return on equity between 2002 and 2005. We include the logarithm of total assets as a measure of firm size. As firms increase in size, owners require a smaller stake to exercise the same level of control, largely as a result of the increasing cost of acquiring such a stake (e.g. Demsetz and Lehn, 1985). Next, we control for industry by including the log of the average industry performance between 2002 and 2005.

To control for firm specific effects in ownership structure we adjust the measure for ownership structure by subtracting the industry average from the ownership structure measure and then add back the sample average for scaling purposes. This allows us to control for any differences in ownership structure as a result of the firms industry.

Equation (2) considers the reverse relationship where ownership structure is related to the value of the firm. In addition to ownership concentration we also include the growth of sales. We employ this as an indicator of firm specific variables that are not directly related to the ownership structure. Edwards and Weichenrieder (2003) argue that the growth of sales controls for the influence of growth prospects on firm value and is a commonly used control variable (e.g. Pedersen and Thomsen, 2003; Barontini and Caprio, 2006; Driffield et al., 2007).

3.3 Data and Descriptive Statistics

The sample for this study contains firms which were listed on the Euronext Amsterdam as at 31 December 2005. We started with 141 firms for which ownership data was available, however 41 firms were removed due to missing too much data, being listed less than two years, being foreign listed issuers, or a financial company. The sample covers a range of industries, with the greatest number of companies coming from the industrial goods and services industry (32) and the

fewest from the automobile and travel and leisure industries (1 each).

To obtain information on the ownership structure of each firm, data was collected from the Osiris database provided by Bureau van Dijk Electronic Partners (BvDEP) which covers European listed and non listed firms. Additionally, as a robustness check, the information was compared with databases from the Autoriteit Financiële Markten (AFM),[1] the Dutch market regulator, who has filings from insiders and large block-holders regarding their holdings.

Information was collected on the percentage of shares held by the largest shareholder, their identity and classification into one of the four categories discussed above, in addition to the percentage of shares held by the top 5 largest shareholders and the company's insiders. The other variables, including Tobin's Q, market to book ratios, return on equity, total assets, sales growth etc were collected from Datastream. Table 1 provides some summary statistics for the data sample. As can be observed, the largest shareholder on average holds slightly below a quarter of the total shares outstanding.

However, the variance of this number is large with the minimum observed being just 3.14% while the largest single shareholder observed held over three quarters of the outstanding shares. When we observe the largest 5 shareholders values we see that the additional shareholders on average hold much fewer shares. Collectively, the next four largest shareholders hold on average only slightly more than the largest one, implying that the size of shareholdings decrease markedly after the largest shareholder. Insiders on average hold nearly 20% of the available shares, although again the variation in this value is extreme, ranging between 0% and 73%.

Insert Table 1 Here

Identity of the largest shareholders

Table 2 separates the sample by industry and by the category of the largest shareholder[2]. As can be seen the sample is dominated by Industrial Goods and Services and Technology firms, who collectively account for nearly half the sample firms. The least represented industries are Automobiles, and Tourism and Leisure at 1 a piece followed by Basic Resources and Telecommunications at 2 each. When looking at the identity of the largest shareholder we observe that financials hold the most shares in over half the sample firms. Surprisingly insiders hold the most shares in roughly one third of cases with the government holding the largest shareholding in only one company, TNT NV. The involvement of the Dutch government is unusually small by international standards (see e.g. Bratton and McCahery, 2000; Barontini and Caprio, 2006).

When we separate ownership structure by industry and identity some interesting patterns arise. Financial institutions make the largest shareholders in most industry groups. Although, in industries where they have not invested at all; Basic Resources, Automobiles, Travel and Leisure and Healthcare, in every case the largest shareholder is an insider. Other firms are concentrated in particular industries, limiting investment to just Industrial Goods and Services, Retail, Media and Technology.

Insert Table 2 Here

We further split two of the identity categories into component groups. We separate financial institutions into the shares held by banks, financial firms, insurers and equity funds, while the insiders category is decomposed into insiders and autocontrole, or treasury shares exercised by the company and by extension management. The extended analysis of identity in addition to the total percentages held by each identity class is presented in Table 3.

The statistics in Table 3 show that Dutch companies tend to have concentrated ownership structures, where the concentration of the ownership is highlighted by the percentage of share held with the specific categories. The shareholdings outside these categories are limited and only one industry has more public ownership than concentrated ownership (Oil and Gas which is 77% publicly owned). The most concentrated industry is Travel and Leisure which has only one company, Ajax Football Club.[3]

Of the four categories, the importance of financial institutions is prominent. Overall, they account for roughly two-thirds of the total shares held by the four categories. Interestingly, while there is some variation in the percentage of shares held by financial institutions it is not excessive. The spread of the shareholding by financial institutions lies between 17% and 55% of the shares. Of the four categories financial firms are invested in all industries with relatively small variance in their holdings. Only in four categories do they hold less than 10%, while the largest holdings are only 17%. Equity funds and banks appear to be much more selective in their investments resulting in no investments in several industries and much greater variation. Insurance firms hold reasonably consistent small percentages of shares, with only their investment in the construction industry reaching in excess of 10%.

[1] The databases are: insider-transacties 5:60 wft, insider transacties – effecten 46b Wte (oud), meldingen geplaatst kapitaal uitgevende instellingen, meldingen substantiële deelnemingen, wmz 1996 – aandeelhouders, meldingen bestuurders en commissarissen, wmz 2a bestuurders en commissarissen.

[2] USG People Group NV has two shareholders who are perfectly equal in size, so there are 101 cases in the table, although the sample is only 100.

[3] What is interesting about this firm is that it is also heavily dominated by insiders, and in particular shares that are controlled, but not owned, by managers. This is an interesting situation as it largely entrenches management while the fact that management own no shares themselves give them few incentives to work in the best interests of shareholders.

Insert Table 3 Here

Insiders are the second-most important group, holding 17% of shares on average. This is, however, largely a result of the large holding in Ajax. The variation in holdings is also considerable, ranging from 2% to 73%. Interestingly, the distribution of shares owned by insiders appears to cluster around two points, less than 5% and between 18 and 24%. These two ranges hold 10 of the 14 total industries. The first grouping is likely the result of managers being awarded shares as part of their compensation package. The latter may be from remaining shareholdings when the company was privately held or from situations where management has bought into the company to gain greater authority.

Other firms and government stakes are both relatively minor, at participations of 5.5% and 0.53%, respectively. Government ownership is particularly small with only the 17% ownership stake in an automobile company being noteworthy. Other firms also represent a virtually non-existent component in all bar three industries, Media, Retail and Construction

4. Results

This section presents the results of the model presented in section 3. We first discuss the issue of ownership concentration and insider ownership stakes and subsequently address the issue of type of largest shareholder. In Table 4 we present the coefficients for the three-stage least squares regressions for all three definitions of ownership structure and both firm performance measures. The endogeneity controls show results in line with expectations for the most part. The lagged performance is positive and significantly related to ownership concentration for five of the six regressions, which is broadly in line with the findings of Pedersen and Thomsen (2003). Total assets are also negative and significant with two exceptions, the largest shareholders and Tobin's Q and the five largest shareholders and market to book value. This indicates that ownership is more concentrated in smaller firms than it is in larger firms, as theory suggests.

When we look at the impact of ownership structure on performance we see there is for the most part a positive and significant relationship. For both Tobin's Q and market to book value we observe that the size of the largest shareholder has a significant positive impact on performance. Interestingly, however, for both firm value measures, the significance disappears when we consider the 5 largest shareholders. This finding suggests that the market believes that monitoring only occurs where a single party has a significant stake in the company. When you add in more shareholders who individually hold smaller stakes, but collectively hold large stakes in the company, they are less able to undertake effective monitoring. This may be a consequence of the nature of monitoring costs, where there is a degree of repetition of costs when a company is monitored by multiple parties. As such the cost-benefit equilibrium would therefore be higher when a single party is undertaking the lion's share of the monitoring.

Insert Table 4 Here

We also observe a positive and significant relationship between the concentration of insiders and Tobin's Q, although the relationship is insignificant for market to book value. This suggests that firm performance increases as a result of increased holdings by management and board members. As has been noted in other studies though, the relationship between insider's ownership and firm performance is not necessarily linear. This results from the impact that differing levels of ownership have on insider's motivation to expropriate private benefits from a firm. Low levels, for instance, are expected to give insiders a stake in the profits of the firm and therefore provide incentives for managers towards good performance. At higher levels of ownership, however, management becomes entrenched and difficult to remove, allowing them to expropriate larger benefits for themselves. We examine whether such patterns, as have been observed by Morck et al. (1988), Short and Keasey (1999) and Singh Bhabra (2007), hold in the Dutch market. These papers typically observe two points of inflection, one at a relatively low level (5% for the US, 12% for the UK and 14% for New Zealand) and one at a higher level (25% for the US and 40% for the UK and New Zealand). As we do not have enough observations at high levels of insider ownership we can only observe the patterns at low levels of ownership concentration. To test for such nonlinearities we run piecewise linear regressions inserting splines at a level of 1% and 25%. We first examine insider ownership above and below 1%, and then insert a second spline evaluating insider ownership below 1%, between 1% and 25% and above 25%.

The results from the piecewise linear regressions provide some evidence that the relationship is nonlinear. In most cases the spline coefficients are insignificant, indicating no significant deviation from the relationship for the ownership levels below 1%. However, at the extreme end (insider ownership concentration > 25%) we find a negative coefficient, which is significant in the case of Tobin's Q. This provides some evidence for the entrenchment argument at these higher levels of insider ownership. The relationship between firm performance and insider ownership is positive and highly significant though for ownership levels less than 1%. This suggests that low levels of ownership, most likely a consequence of a compensation or performance package, result in improved firm value. These findings are to some extent similar to the patterns observed in other studies that have found a curvilinear relationship. They observed a positive and significant relationship at low levels of ownership, a negative

relationship between the first and second point of inflection and a positive relationship thereafter. As noted, we don't have enough high ownership observations to examine points at 40% and greater as was indicated in the papers by Short and Keasey (1999) and Singh Bhabra (2007). We do however observe the initial positive relationship as well as the later switch to a negative relationship.

Insert Table 5 Here

When we split the sample by the identity of the largest shareholder, we observe some interesting differences between the three categories (we exclude government as there is only one observation). Of particular interest is the fact that for both measures of firm value we observe a negative relationship between financial institutions ownership concentration and firm performance, although only the relationship with the market to book value is significant. This suggests that where the firm's largest shareholder is a financial institution who holds a substantial stake then firm performance is worse. A possible explanation for this finding is that financial firms may have different objectives as mentioned before, such as establishing and maintaining a line of business with the firm. Another explanation is that financial institutions (e.g. pension funds) may have strong links with other stakeholders such as trade unions and government, which may have other objectives. The other two categories behave in more traditional fashion with insiders having an insignificant impact on the firm's value, although the coefficient is positive, while the other firm has a positive and significant impact on the firms Market to Book value.

Insert Table 6 Here

5. Conclusion

The nature of the relationship between ownership structure and firm performance has been under debate for some time. Research to date has yet to establish the direction of any relationship or even if the relationship is linear or takes some other form. One weakness in the literature is the fact that it is largely dominated by studies conducted in the US and the UK.

While being two large markets, it may be that the understanding of the relationship in a broader context, particularly exploring new markets, may assist in determining what impact ownership structure has on firm performance. As such we add the experiences of Dutch companies, a market that has not been examined previously. What makes this an interesting market is that it falls between the concentrated ownership typical of Continental European countries and the diverse ownership of Anglo-Saxon markets. This makes it a somewhat atypical market and therefore may be of added value in determining the nature of the relationship between ownership structure and concentration and firm value.

We collect ownership concentration data on 100 firms listed on the Euronext Amsterdam as at 31 December 2005. Specifically, we collect data on the concentration held by the largest shareholder, the five largest shareholders and insiders, consisting of management, board members and employees. We also categorise the largest owner into one of four categories; Financial Institutions, Insiders, Other Firms and Government. We regress this against two firm value measures, Tobin's Q and Market to Book ratio, using three-stage least squares regressions to control for potential endogeneity in the relationship between ownership concentration and firm value. We also use piecewise regressions to examine the insider ownership concentration to observe if the relationship is non-linear.

The results show that there is a positive relationship whereby more insider ownership and a larger main shareholder result in higher firm value. However, it does appear that only the concentration of the largest shareholder is important, possibly due to reduced monitoring where you have more shareholders with small stakes. When we looked at the possibility of a non-linear relationship for insiders ownership we observed that for ownership concentration of less than 1% firm value was positively related to insiders ownership, but above 1% and below 25% the relationship was insignificant, and above 25% we observe a significant negative relationship where we measure firm value with Tobin's Q. Finally when we split the sample by the largest shareholders identity we observe no significant relationships between ownership concentration and Tobin's Q, but we find a positive and significant relationship for Other Firms and a negative and significant relationship for Financial Institutions for market to book value. This last finding is interesting as it suggests that financial firms are not motivated purely by wealth maximisation, contrary to most predictions about investments in companies. The results therefore show that with the exceptions of a few specific cases there is a positive relationship between ownership concentration and firm value.

Literature list

1. Barontini, R. and L. Caprio, 2006, The Effect of Family Control on Firm Value and Performance: Evidence from Continental Europe, European Financial Management 12 (5), 689-723.
2. Bratton, W.W. and J.A. McCahery, 1999, Comparative Corporate Governance and Theory of the Firm: The Case Against Global Cross Reference, Columbia Journal of Transnational Law 38 (2)
3. Davies, D., Hillier, D., and P.M. McColgan, 2005, Ownership structure, managerial behaviour and corporate value. Journal of Corporate Finance 11, 645–660.
4. Demsetz, H., 1983, The Structure of Ownership and the Theory of the Firm, Journal of Law and Economics 26 (2), 375-390.

5. Demsetz, H. and K. Lehn, 1985, The Structure of Corporate Ownership: Causes and Consequences, The Journal of Political Economy 93 (6), 1155-1177.
6. Demsetz, H. and B. Villalonga, 2001, Ownership structure and corporate performance, Journal of Corporate Finance 7, 209-233.
7. Driffield, N., Mahambare, V. and S. Pal, 2007, How Does Ownership Structure Affect Capital Structure and Firm Value? Recent Evidence from East Asia, Economics of Transition 15 (3), 535-573.
8. Edwards, J.S.S. and A.J. Weichenrieder, 2003, Ownership Concentration and Share Valuation, CESifo Working Paper 193.
9. Fama, E.F. and M.C. Jensen, 1983, Separation of Ownership and Control, Journal of Law and Economics 26 (2), 301-325.
10. Himmelberg, C.P., R.G. Hubbard and D. Palia, 1999, Understanding the determinants of managerial ownership and the link between ownership and performance, Journal of Financial Economics 53, 353-384.
11. Jensen, M.C. and W.H. Meckling, 1976, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, Journal of Financial Economics 3, 305-360.
12. La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishney, R. (1998). Law and Finance. Journal of Political Economy, 106, 1113-1155.
13. Lee, S.M., and K. Ryu., 2003, Management ownership and firm's value. Osaka University Working paper
14. McConnell, J.J. and H. Servaes, 1990, Additional evidence on equity ownership and corporate value, Journal of Financial Economics 27, 595-612.
15. Miguel, A.D., Pindado, J., and C.D.L. Torre, 2004, Ownership structure and firm value: new evidence from the Spanish corporate governance system. University of Salamanca Working paper.
16. Monks R.A. and N. Minnow, 2001, Corporate Governance, Oxford, Blackwell.
17. Morck, R., Shleifer, A. and R.W. Vishny, 1988, Management Ownership and Market Valuation: An Empirical Analysis, Journal of Financial Economics 20, 293-315.
18. Pedersen, T. and S. Thomsen, 2003, Ownership Structure and Value of the Largest European Firms: The Importance of Owner Identity, Journal of Management and Governance 7, 27-55.
19. Perotti, E., 2004, State Ownership: A Residual Role?, World Bank Policy Research Working Paper 3407.
20. Short, H., and K. Keasey, 1999, Managerial ownership and the performance of firms: evidence from the U.K. Journal of Corporate Finance 5, 79–101.
21. Singh Bhabra, G., 2007, Insider ownership and firm value in New Zealand, Journal of Multinational Financial Management 17, 142-154.
22. Stulz, R.M., 1988, Managerial Control of Voting Rights: Financing Policies and the Market for Corporate Control, Journal of Financial Economics 20, 25-54.
23. Stulz, R.M., 1990, Managerial Discretion and Optimal Financing Policies, Journal of Financial Economics 26 (1), 3-26.

Table 1. Descriptive Statistics

Tobin's Q is calculated as the ratio of the firm's market value plus the book value of total debt to the book value of total assets for 2005. Market to Book Value is calculated by dividing the market capitalisation of the firm by the book value of equity for 2005. Return on equity is calculated as the Net Income before preferred dividends plus preferred dividends divided by the previous year's common equity.

Variable	Observations	Mean	Stand. Dev.	Minimum	Maximum
Largest shareholder	100	23.93%	18.41	3.14%	77.68%
5 largest shareholders	90	47.95%	18.03	8.65%	93.16%
Percentage of insiders	100	17.59%	20.69	0%	73%
Tobin's Q 2005	90	1.40	1.18	0.47	8.28
Market to Book Value 2005	100	2.96	2.03	-0.65	11.30
Total assets 2005	100	4,362	19,165	4.08	183,543
Growth of sales 2005	99	6.51%	20.69%	-46.54%	74.39%
Return on equity 2005	98	15.33%	21.72%	-56.41%	104.76%

Table 2. Sample Companies by Industry and Identity of Largest Shareholder

Industry membership was based on the Industry Classification Benchmark classification. Financials include banks, financial institutions, equity funds and insurers. Insiders include both shares owned by insiders and shares owned by the company but controlled by insiders.

Industry	Financials	Insiders	State	Other Firms	Number of cases
Oil & gas	3	0	0	0	3
Chemicals	3	1	0	0	4
Basic resources	0	2	0	0	2
Construction	5	1	0	0	6
Industrial goods & services	18	11	1	2	32
Automobiles	0	1	0	0	1
Food & beverages	7	2	0	0	9
Personal household goods	3	2	0	0	5
Healthcare	0	3	0	0	3
Retail	5	1	0	2	8
Media	3	0	0	4	7
Travel & leisure	0	1	0	0	1
Telecommunications	1	1	0	0	2
Technology	8	8	0	1	17
Frequency	56 (55.45)	34 (33.66)	1 (0.99)	10 (9.90)	101

Table 3: Average Industry Shareholdings by Owners Identity

This table details the industry average percentage holdings by each of the categories of owners for the sample firms. Industry membership was based on the Industry Classification Benchmark classification. Autocontrole represents shares owned by the company itself, but controlled by management.

Industry	Banks	Financial firms	Insurance firms	Equity funds	**Financials**	Insiders	Autocontrole	**Insiders**	**State**	**Other firms**	Total Concentrated	Public
Oil & gas (3)	3.07	4.05	5.00	5.79	**17.91**	2.12	0.05	**2.17**	**0.00**	**2.33**	22.61	77.59
Chemicals (4)	10.89	5.80	3.27	20.26	**40.21**	13.31	1.25	**14.55**	**0.00**	**1.67**	56.43	43.57
Basic resources (2)	2.83	7.43	5.56	7.28	**23.10**	22.63	11.32	**33.94**	**0.00**	**0.00**	57.03	42.97
Construction (6)	12.19	14.75	10.69	17.03	**54.67**	5.02	1.92	**6.93**	**0.00**	**7.26**	68.86	31.14
Industrial goods & services (32)	15.02	17.92	6.27	11.00	**50.21**	18.12	2.13	**20.25**	**0.74**	**3.33**	74.53	25.47
Automobiles (1)	6.50	10.56	0.00	0.00	**17.06**	47.89	0.00	**47.89**	**17.04**	**0.00**	81.99	18.01
Food & beverages (9)	12.78	10.38	2.78	9.20	**35.14**	8.92	6.07	**14.99**	**0.54**	**0.70**	51.36	48.64
Personal household goods (5)	13.04	12.29	6.95	20.22	**52.50**	18.13	2.65	**20.78**	**0.00**	**0.93**	74.21	25.79
Healthcare (3)	8.61	13.92	7.51	11.46	**41.50**	24.43	4.72	**29.16**	**0.00**	**0.93**	71.59	28.41
Retail (8)	11.05	17.34	5.50	18.57	**52.46**	2.39	8.82	**11.20**	**0.00**	**14.75**	78.41	21.59
Media (7)	12.29	12.68	0.39	4.98	**30.35**	2.24	0.05	**2.28**	**0.00**	**30.92**	63.54	36.46
Travel & leisure (1)	0.00	9.95	8.60	0.00	**18.55**	0.00	73.00	**73.00**	**0.00**	**0.00**	91.55	8.45
Telecommunications (2)	23.02	11.32	0.81	10.39	**45.53**	21.05	0.50	**21.55**	**3.90**	**0.00**	70.98	29.02
Technology (17)	9.95	13.86	2.45	7.48	**33.75**	14.85	5.20	**20.05**	**0.00**	**2.28**	56.07	43.93
Weighted total (100)	12.14	14.15	4.85	11.17	**42.31**	13.36	4.23	**17.59**	**0.53**	**5.51**	65.94	34.06

Table 4. Three-Stage Least Squares Regression Results

Tobin's Q is calculated as the ratio of the firm's market value plus the book value of total debt to the book value of total assets for 2005. Market to book value is calculated by dividing the market capitalisation of the firm by the book value of equity for 2005. Return on equity is calculated as the Net Income before preferred dividends plus preferred dividends divided by the previous year's common equity. Industry average is the average performance of firms in the same industry based on the Industry Classification Benchmark. ***, **, * denote significance at the 1%, 5% and 10% level respectively.

	Tobin's Q						Market to Book Value					
	% Largest Shareholder		% 5 Largest Shareholder		% Insider Ownership		% Largest Shareholder		% 5 Largest Shareholder		% Insider Ownership	
Constant	-0.3410	-0.8992**	2.1517***	0.09931	2.7972	-.5515***	-1.2702**	1.6905***	1.9470***	0.8697***	3.7521**	1.1027***
	(0.6209)	(0.3927)	(0.6589)	(0.0660)	(1.8598)	(0.2008)	(0.6422)	(0.4783)	(0.6573)	(0.0642)	(1.8366)	(0.1623)
Performance $_{t-1}$	0.9109***		0.6339***		2.3575***		0.7357***		-0.0972		1.9933***	
	(0.1844)		(0.0038)		(0.5626)		(0.1398)		(0.1659)		(0.4166)	
σ_{ROE}	0.0026		-.0012		0.0002		0.0024		-0.0023		-0.0031	
	(0.0031)		(0.0038)		(0.0093)		(0.0036)		(0.0044)		(0.0106)	
σ_{ROE}^2 (x1000)	-0.0054		-0.0016		-0.0074		-0.0061		0.0048		-0.0008	
	(0.0074)		(-0.0090)		(0.2200)		(0.0084)		(0.0103)		(0.0246)	
Total assets	-0.0980*		-0.1472		-0.4192***		-0.0665		-0.1294***		-0.5251***	
	(0.0455)		(0.0483)		(0.1371)		(0.0444)		(0.0439)		(0.1220)	
Industry Average	-0.3619		-0.2244		-0.7058		-0.0860		-0.0269		-1.4032	
	(0.2382)		(0.2586)		(0.7101)		(0.2603)		(0.3145)		(0.8520)	
Ownership		0.4602**		0.2352		0.1391**		0.5018*		-0.0719		0.0798
concentration		(0.2294)		(0.1875)		(0.0620)		(0.2849)		(0.2074)		(0.0525)
Growth of sales		-0.0030		-0.0033		-.0032		-0.0007		-0.0001		-0.0008
		(0.0029)		(0.0029)		(0.0031)		(0.0027)		(0.0027)		(0.0028)
N. of Obs	85		85		75		96		96		85	
F-stat	7.56***	2.60*	4.68***	1.35	7.12***	2.59*	7.33***	1.56	5.07***	0.07	7.46***	1.16

Table 5. Non-Linear Insider Ownership Estimation

Estimations performed using Piecewise Linear Regression. Tobin's Q is calculated as the ratio of the firm's market value plus the book value of total debt to the book value of total assets for 2005. Market to Book Value is calculated by dividing the market capitalisation of the firm by the book value of equity for 2005. Return on equity is calculated as the Net Income before preferred dividends plus preferred dividends divided by the previous year's common equity. Industry average is the average performance of firms in the same industry based on the Industry Classification Benchmark. ***, **, * denote significance at the 1%, 5% and 10% level, respectively.

	Tobin's Q				Market to Book Value			
Constant	1.6260	0.9846	2.1046	0.7103	2.4026	1.4766	2.8204	1.3852***
	(1.7284)	(0.6299)	(1.7606)	(0.5843)	(1.7676)	(0.4204)	(1.7919)	(0.4077)
Performance $_{t-1}$	1.9106***		2.1001***		1.9909***		2.0167***	
	(0.5611)		(0.5715)		(0.4002)		(0.4060)	
σ_{ROE}	-0.0000		-0.0036		-0.0017		-0.0035	
	(0.0084)		(0.0089)		(0.0096)		(0.0101)	
σ_{ROE}^2	-0.0053		0.0024		-0.0032		0.0007	
	(0.0201)		(0.0211)		(0.0224)		(0.2350)	
Total assets	-0.3335***		-0.3626***		-0.4411***		-0.4656***	
	(0.1269)		(0.1285)		(0.1183)		(0.1189)	
Industry	-0.5193		-0.7236		-1.0893		-1.2030	
Average	(0.6765)		(0.7135)		(0.7915)		(0.8133)	
Ownership		0.2588**		0.1919*		0.1707**		0.1439*
concentration		(0.1220)		(0.1123)		(0.0845)		(0.0813)
< 1%								
Ownership		0.0181				0.0278		
Concentration		(0.0626)				(0.0438)		
> 1%								
Ownership				0.0161				0.0291
concentration				(0.0543)				(0.0411)
1 - 25%								
Ownership				-0.1508*				-0.0538
concentration				(0.0891)				(0.0739)
> 25%								
Growth of		-0.0037		-0.0040		-0.0008		-0.0011
sales		(0.0039)		(0.0035)		(0.0031)		(0.0030)
N. of Obs	75		75		85		85	
F-stat	4.67***	11.27***	5.31***	14.33***	6.92***	4.22**	7.12***	4.16**

Table 6. Identity of the Largest Shareholders Three Stage Least Squares Regressions

Tobin's Q is calculated as the ratio of the firm's market value plus the book value of total debt to the book value of total assets for 2005. Market to Book Value is calculated by dividing the market capitalisation of the firm by the book value of equity for 2005. Return on equity is calculated as the Net Income before preferred dividends plus preferred dividends divided by the previous year's common equity. Industry average is the average performance of firms in the same industry based on the Industry Classification Benchmark. ***, **, * denotes significance at the 1%, 5% and 10% level, respectively.

	Tobin's Q						Market to Book Value					
	Financial Institutions		Insiders		Other Firms		Financial Institutions		Insiders		Other Firms	
Constant	-1.067	-0.4596	-1.4356	0.8553	2.1154	.1491	-1.3837**	-1.6103	-0.3981	1.3809***	2.6509	1.4970***
	(0.6775)	(0.3978)	(1.0412)	(0.6176)	(3.4162)	(.2617)	(0.5811)	(0.4783)	(1.1607)	(0.3767)	(2.0524)	(0.3643)
Performance $_{t-1}$	-0.3972*		0.7643**		2.4823**		-0.5192***		0.7967		1.3703***	
	(0.2293)		(0.3754)		(0.9745)		(0.1156)		(0.3300)		(0.4959)	
σ_{ROE}	-0.0007		0.0161		0.0015		-0.0016		0.0062		0.0015	
	(0.0046)		(0.0146)		(0.0175)		(0.0024)		(0.0129)		(0.0133)	
σ_{ROE}^2	0.0013		-0.0834		-0.0043		0.0035		-0.0229		-0.0049	
	(0.0125)		(0.1070)		(0.0363)		(0.0064)		(0.0963)		(0.0271)	
Total assets	-0.0745		-0.0048		-0.2159		-0.0264		-0.0683		-0.3740**	
	(0.0481)		(0.0768)		(0.2796)		(0.03487)		(0.0765)		(0.1900)	
Industry Average	-0.4795		-0.1476		-0.7652		0.0682		-0.9649		0.0968	
	(0.2923)		(0.4192)		(1.5116)		(0.1509)		(0.6133)		(1.2301)	
Ownership		-0.2303		0.4182		0.1525		-1.1833**		0.3507		0.5486*
concentration		(0.1918)		(0.5806)		(0.1879)		(0.5184)		(0.3187)		(0.2838)
Growth of sales		-0.0006		-0.0051		-0.0052		0.0017		0.0008		-0.0102
		(0.0038)		(0.0087)		(0.0046)		(0.0049)		(0.0053)		(0.0074)
N. of Obs	50		27		8		54		33		9	
F-stat	2.94**	0.73	1.96	2.16	1.38	0.67	6.24***	4.80**	1.66	0.76	2.48	2.12