The Causal Relationship between Insider Ownership, Owner Identity

and Market Valuation among the Largest European Companies

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Abstract

The causal relationship between insider ownership and market valuation is tested by simultaneous estimation of the causes and effect of insider ownership among the largest continental European companies. Controlling for nation and industry effects insider ownership (measured by the fraction of "closely held" shares) is found to have a positive effect on market valuation (market-to-book values). And market valuation is found to have a positive feedback effect on the level of insider ownership. The findings provide empirical support for a theoretical model proposed by La Porta et al (1999). But the results are also found to be sensitive to owner identity: while a higher level of financial and corporate insider ownership is found to increase market valuation, family ownership has no significant effect, and a higher level of government ownership is found to reduce market valuation.

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Historically, an enormous number of papers have examined the effect of ownership structure on economic performance measures using single equation regression models (Short 1994). But recently a second generation of studies applying simultaneous equation models have picked up on a point raised by Harold Demsetz (1983) that ownership is an endogenous variable, and that this needs to be taken into account when estimating its effect on performance (Loderer and Martin 1997; Cho 1998; Himmelberg, Hubbard and Palia 1999). The simultaneous equation models have generally found the impact of insider ownership on performance to be insignificant, which confirms the intuition voiced by Demsetz (1983) that there should be no impact in equilibrium since this would imply that owners would profit by reshuffling their portfolios. In particular, one might expect a significant reverse feedback from market valuation to the level of insider ownership as owners react to good or bad performance by buying or selling shares.

This paper contributes to the simultaneous equations literature. But while previous studies have used US data this paper extends the scope of analysis to continental European firms that operate in a different institutional setting. Contrary to previous studies we find that insider ownership (measured by the fraction of closely held shares) has a positive effect on market valuation (market-to-book values) even after taking into account the observed positive feedback of market valuation effect on insider ownership. Furthermore, we stress the importance of "identity of owner-effects" arguing that the identity of the insiders – e.g. family, government, or financial - affects the causal relationship between insider ownership

and market valuation.

THEORY AND HYPOTHESES

Theoretically, it might be argued that higher insider ownership implies better incentives to monitor, greater incentive alignment and therefore higher expected profits and share prices. But higher insider ownership may also imply greater managerial entrenchment, diversion of funds and thereby lower efficiency (Jensen and Meckling 1976, Morck et al 1988). It is also possible that these effects combine into a non-linear (bell-shaped) relationship – positive for small levels of insider ownership because of greater incentive alignment, negative for high levels because of increasing managerial entrenchment, and near a value-maximizing optimum the marginal effect of changes in insider ownership could theoretically be zero (Demsetz and Lehn 1985). Therefore, the theoretical effect of insider ownership on market valuation is a priori indeterminate.

Furthermore, there may also be significant reverse feedback from market valuation to ownership structure. For example, the market valuation of a company's shares may affect the level of insider ownership. Depending on the supply curve for individual stocks (Zeckhouser & Pound 1990), insiders may be more tempted to sell parts of their shares in a particular firm when share prices are high relative to expectations. Managers and other controlling shareholder may trade off on-the-job consumption for monetary compensation. The immediate gains to selling out are larger and the expected future gains may be lower for a higher share price. Furthermore, companies seem more likely to issue stock to the market and thereby reduce the level of insider ownership when the market for their shares is good (i.e. when share prices are high). Finally, when caused by inefficient management a decreasing

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share price should in theory invite raiders and controlling shareholders to increase their holdings to repair the problem. These arguments point to a negative relationship between market valuation and insider ownership. But it is also conceivable that outside shareholders choose to reward the insiders for good past performance (ex post settling up) and that high market valuation will therefore tend to lead to higher levels of insider ownership (Kole 1996). Furthermore, higher market value makes it possible to finance a given level of investment with a smaller amount of stock to outsider owners (La Porta et al. 1999b) – an argument we shall shortly present more formally. Therefore, the nature of the reverse effect from market valuation to insider ownership is also theoretically disputed.

A large number of empirical papers have studied the relationship between insider ownership and market valuation/economic performance. Previous research based on "single equation models" generally found a positive or perhaps insignificant relationship between insider ownership and economic performance, at least for low levels of insider ownership (Short 1994). Some also found non-linear relationships between managerial ownership and market valuation (e.g. Morck et al. 1988, McConnell and Servaes, 1990, Thomsen and Pedersen 2000). But, as mentioned, more recent simultaneous estimations of the "causes and consequences" of insider ownership have found insignificant performance effects (Loderer and Martin 1997, Cho 1998, Himmelberg, Hubbard and Palia 1999).

Loderer and Martin (1997) examine both Tobin's Q-values and abnormal stock returns to 867 acquisitions made by companies listed in the US over the period 1978-1988. They find a weak concave effect of director ownership on both measures estimated by simple regression. However, the relationship becomes insignificant when a simultaneous two-equation model is estimated that includes firm size and earnings volatility as determinants of director

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ownership. Abnormal acquisition returns are found to have a significant positive effect on director ownership whereas Q-values are found to have a significant negative effect. The authors interpret these results as evidence that managers have inside knowledge and increase their shareholdings prior to good acquisitions whereas high share prices and Q-values induce them to sell out.

Cho (1998) examines investment as an intermediate variable between director ownership and performance measured by Q-values. On a sample of 326 Fortune 500 firms in 1991 he finds that Q-values have a *positive* impact on director ownership and that director ownership has a significant non-monotonous effect on investment, which again has a positive impact on Q-values. When taking this into account in a 3-equation model simultaneously determining director ownership, Q-values and investment, the non-monotonous effect of ownership structure on Q-values becomes insignificant.

Himmelberg, Hubbard and Palia (1999) use a panel of 300 Compustat firms over the period 1982-1992 to control for fixed firm effects as an indicator of unobserved firm heterogeneity which influences both ownership structure and Q-values. They find a significant impact of director ownership on Q-values even after controlling for some observable determinants of ownership structure, but the impact becomes insignificant when the fixed firm effects are taken into account.

In summary, empirical research has tended to find a positive direct effect of insider ownership or similar measures such a director ownership, ownership concentration or owner-control dummies. But the effect has tended to become insignificant when attempts were made to control for the determinants of ownership structure.

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A model

One problem with previous research in this area is the lack of a solid theoretical foundation. In this paper we rely on a model proposed by La Porta, Shleifer, Silanes, and Vishny (1999b) – henceforth the LSSV model - to formulate hypotheses for empirical testing. In their model an insider can choose to divert a share - s - of the firm's gross value creation (RI) from the investors to other goals (private on-the-job consumption, the benefit of non-owner stakeholders, political objectives or any other non value maximizing goal). But the diversion comes at a cost c, which increases in s: $c(s)$, $c_s > 0$, $c_{ss} > 0$. The optimal level of non profit maximizing behaviour s* then depends on the marginal costs of profit diversion and the insider's share of the cash flow which we denote his "ownership share".

The relevant findings can be adapted to this paper in the following equations:

1. $MAX\ \alpha(1-s)RI + sRI - c(s)RI\ by\ s$

2. $c'(s^*) = 1 - \alpha$

3. $c''(s^*)s^{*'}(\alpha) = -1 \Leftrightarrow s^{*'}(\alpha) = -\dfrac{1}{c''(s^*)} < 0$

4. $Q = \dfrac{(1-s^*)RI}{I} = (1-s^*)R$

5. $Q'(\alpha) = -s^{*'}(\alpha)R = \dfrac{R}{c''(s^*)} > 0$

6. $(1-\alpha)(1-s^*)RI = I \Rightarrow (1-\alpha)Q = 1 \Leftrightarrow \alpha^* = 1 - \dfrac{1}{Q}$

7. $\alpha^{*'}(Q) = Q^{-2} > 0.$

Here, equation 1 describes the utility maximizing choice of s by an insider. The gross value created by the firm is R (R=rate of return, I=amount invested). Of that sRI is diverted by the insider to other goals at a cost c(s)RI proportional to the value creation RI and increasing in s. The insider maximizes the sum of his share of the value creation net of diversion α(1-s)RI plus the diverted funds sRI minus the costs of diversion c(s)RI. Equation 2 solves the first order condition for this maximization problem. Equation 3 differentiates equation 2 by α to show that the optimal level of diversion decreases with the insider's ownership share. Equation 4 defines the market valuation ratio Q as the gross value creation net of profit diversion over the amount of money invested (I). Equation 5 differentiates equation 4 to show that market valuation increases in the insider's ownership share α. The argument is the classical incentive alignment argument: insider incentives will be more closely aligned with value maximization for outside investors if they themselves have a higher ownership share of the insiders.

While the first five equations treat α as exogenously given, equation 6 derives the optimal ownership share as a function of market valuation. It is assumed that outsider investors will require at least to break even before they invest – i.e. to get a return net of profit diversion and net of dividends to the insiders (1-α)(1-s*) RI which at least covers the amount of money - I - they have to invest. So (1-α)(1-s*)RI = I. By the definition of Q the left hand side of this equation equals (1-α)QI so α can be written as a function of Q. Equation 7 differentiates this function to show that the implied relationship between ownership share and market valuation is positive. The argument is that a given level of investment can be financed by issuing less equity to the public when market valuation is high. And ceteris paribus the minimal equity share is preferred because it minimizes the cost of profit diversion.

The model has two important implications for this paper. 1) Market valuation (Q) increases with the insider's ownership share. 2) The optimal ownership share α^* increases with market valuation. This gives rise to the following hypotheses.

Hypothesis 1a. Market valuation has a positive effect on the level of insider ownership.

Hypothesis 1b. The level of insider ownership has a positive effect on market valuation.

The emphasis on the incentive alignment argument indicates a view of insider ownership that in some ways resembles the pecking order theory of corporate finance (Myers and Majluf 1984) according to which managers prefer to avoid financing projects by issuing equity to outside investors. In the LSSV model insider ownership is strictly preferable because of incentive alignment, so it is optimal to allocate as much equity as possible to the insiders and the more so the higher the market valuation will be. The main reason for this clarity is that the model abstracts from risk and risk aversion, which is the classical argument for sharing ownership with outside investors. The model also emphasises cash flow rights and their implications for economic incentives but abstracts from the control rights of ownership (firms are assumed to be controlled by the insiders in any case).

Owner identity

Another gap in the existing research (surveyed above) is that it is almost entirely based on US evidence. But a priori it cannot be taken for granted that the findings will hold in other

institutional settings. In a series of influential papers La Porta, Silanes, Shleifer and Vishny (henceforth La Porta et al.) have argued that national legal systems differ with regard to investor protection, and that this has implications for insider ownership and market valuation. Others have emphasized the importance of a wider set of institutional differences – including the structure of the financial system, financial regulation and complementary institutions (Roe 1991, 1994, Whitley 1994, Pedersen and Thomsen 1997, 1999a) which in effect make each nation a unique case. National differences have a strong influence on both ownership structure and market valuation, and it cannot be taken for granted that they do not influence the functional relationship between them. Roe (1994) and Pedersen and Thomsen (1997) find strong nation effects on corporate ownership structure. Thomsen and Pedersen (2000) also find strong nation effects on the market valuation of European companies. La Porta et al. (1998, 1999a) argue that relatively weak systemic investor protection in civil law systems leads to higher levels of insider ownership (control by large owners) compared to common law systems, because control by large owners functions as an alternative control mechanism to legal protection. Furthermore, La Porta et al. (1999b) argue that systemic investor protection has a positive impact on market valuation because investor protection increases insider owners´ costs of diverting resources to their private benefit. Specifically, they argue that investors are better protected in common law regimes and that share valuation therefore tends to be higher in common law compared to civil law systems.

Because of nation effects it cannot be taken for granted that the relationship between ownership structure and economic performance is the same in the US and in continental Europe. In this paper we focus on the critical importance of owner identity, which appears to have been overlooked in most extant research (despite the call for more research in Short (1994)). For example, a high level of government ownership could have very different

implications for market valuation compared to a high level of managerial ownership. Likewise it could very well have different implications for company behaviour if the largest owner is a family, a bank or another corporation. This point has been stressed by Gedajlovich (1993) and Thomsen and Pedersen (1998, 2000). While the literature (quoted above) may reflect a US institutional setting in which large companies are normally controlled by institutional investors or other portfolio investors with similar behavioural characteristics, European companies have much higher levels of insider ownership which means that the identity of the largest owner matters correspondingly more.

Following previous work based on Hansmann (1996) we expect the largest owner to influence company objectives according to the preferences of that owner category. In addition to their ownership interest in shareholder value the preferences are assumed to be influenced by other economic relations (the "stakeholder interest"), which that owner category may have with the firm. We distinguish between four owner categories: Financial institutions, (non-Financial) Companies, Families and Governments. We categorize companies in our sample by their identity in 1991 (before the beginning of our data window 1992-1995) leaving out companies belonging to other ownership categories – e.g. cooperatives.

Families or single individuals are the prototype insiders referred to by La Porta et al. (1999b) because single owners or family members often play a dual role as managers and owners, if they own large amounts of shares. In other words, their marginal cost of profit diversion are presumably small and therefore ownership share should have a relatively strong effect on market valuation for family-managed companies. However, the performance effects of family ownership are disputed. Since single owners and families typically invest a disproportionate

share of their wealth in the company, family-owned companies may be relatively risk averse, and they are more likely to be capital-rationed than outsider-controlled companies which could detract from their economic performance. Furthermore the private utility that families derive from running the company may go beyond what they can pocket at the expense of minority shareholders. In support of the expropriation hypothesis, Johnson et al. (1985) found that the stock market reacted favourably to unexpected death of CEOs with large ownership stakes. On the other hand, families sometimes make firm specific investments in human capital (Maug 1996) which create long-term ties to the company, and which may be value-increasing. Nickel et al. (1997) found no effects of family ownership on productivity, and Gorriz and Fumas (1996) found a positive effect. For empirical testing we stick to the LSSV model and propose the following hypotheses.

Hypothesis 2a. Market valuation has a positive effect on family ownership.

Hypothesis 2b. Family ownership has a positive effect on market valuation.

Financial institutions (banks, insurance companies, pension funds, investment companies) are assumed to be portfolio investors whose main objective is shareholder value. This means that they can to a large extent be regarded as outsiders. To be sure there are exceptions to this rule. For example, banks may value the security of their loans and other business relations with the company as much as their owner interest. And pension funds may have links to trade unions or governments that make them extra sensitive to political concerns like job safety or the public image of the companies that they invest in. Nevertheless, holding a large portfolio of shares at arms length distance and being evaluated regularly on their financial results compared to other institutions will arguably make financial institutions likely to be strongly

concerned with shareholder value. Furthermore financial investors are generally subjected to special regulation and supervision by government organizations (ministries of finance, securities and exchange commissions and the like). In other words, their marginal cost of value diversion is presumably relatively high, which should lead to a positive, but relatively small effect of ownership share on market valuation (equation 5). In the same way, high profit diversion costs could theoretically imply a low level of value diversion and therefore higher share value and higher ownership share for financial owners relative to other ownership categories, while the marginal effect of share valuation on ownership share should tend to be smaller than for other categories given the higher share value. We therefore propose the following hypotheses.

Hypothesis 3a. Market valuation has a small positive effect on financial investor ownership.

Hypothesis 3b. Financial investor ownership has a positive effect on market valuation.

One problem with these hypotheses is that they appear to be inconsistent with previous research. For example Thomsen and Pedersen (2000) argued that a higher level of ownership by a financial institution will give that institution more voting power and stronger incentives to monitor the incumbent management (the "real" insiders), and that this will imply a greater pressure to maximise shareholder value. In support they reported that market valuation tended to increase with the ownership share of dominant financial institutions. Nickel et al. (1997) found a positive productivity impact of financial ownership. In the case of bank ownership Cable (1985) found a positive performance effect among West German firms, and Hoshi et al. (1990) and Ramirez (1995) found that members of bank-based business groups were less likely to be credit-rationed.

An alternative interpretation may be to simply define financial owners as outsiders because their costs of profit diversion are prohibitive. In that case an increase in financial investor ownership would imply a decrease in insider ownership by other owner categories, which would imply a *negative* relationship between financial ownership and market valuation given lower costs of profit dispersion for the insiders. This also contradicts previous research.

It may therefore be necessary to modify the LSSV model to understand the causes and consequences of financial ownership. For example, the wealth effects may imply that financial institutions and the companies that they own appear to be less likely to be capital-rationed than companies whose owners have less direct access to capital. And, because of financial regulation and supervision they may be forced to invest "prudently" in relatively liquid, high value blue chip shares. Finally, the LSSV model is concerned with the implications of cash flow rights and abstracts from the control rights of ownership. If a higher ownership share implies an increase in the control of shareholder value maximising financial owners this may have positive effect on market valuation.

(Non-financial) companies sometimes hold shares in other companies as part of cross-ownership or company group structures. Because company owners often have business ties with the companies that they own, they come closer to being classical insider-owners than financial institutions and their costs of profit diversion are presumably small which should indicate a relatively large positive performance effect of increasing ownership share (equation 5). Likewise, a relatively high expected profit diversion should indicate a positive, and relatively large effect of market valuation on corporate ownership share. Corporate ownership ties are an integral feature of the Japanese Keiretsu as well French cross-holding

structures or Swedish business groups (Kester 1992, Charkham 1994). Vertical ties between

companies at different stages of the value chain/system make economic sense under

conditions of high asset specificity and transaction frequency (Williamson 1995). In

particular corporate ownership ties may be expected to facilitate knowledge transfers between

the affiliated companies. The relationship between a foreign parent company and a subsidiary

can be interpreted in this way if the subsidiary markets and distributes products produced or

developed by the parent company. The owner company has stronger incentives to transfer

proprietary resources to the subsidiary/affiliate (Caves 1996), which should tend to increase

its market valuation. Nevertheless, as recognised by Williamson (1985) in the case of full

integration into a company hierarchy or by Kester (1992) in the case of more loosely

affiliated members of a company group, the advantages of business group membership come

at a cost, for example loss of flexibility and risk of deficient mutual monitoring. Hundley and

Jacobson´s recent finding (1998) that Keiretsu members do worse in terms of export

performance than non-members indicates that the costs may sometimes exceed the benefits.

Similarly, the impact of market value on company ownership also appears to be uncertain.

Non-financial companies are likely to have lower costs of capital than individuals or families,

but higher than financial investors. For empirical testing we propose the following

hypotheses.

Hypothesis 4a. Market valuation has a positive effect on company ownership.

Hypothesis 4b. Company ownership has a positive effect on market valuation.

Government organizations are likely to be more sensitive to political concerns than other

ownership categories, which essentially means that a higher ownership share will not necessarily function as a deterrent against profit diversion. The theoretical literature (e.g. Shepherd (1989), Laffont and Tirole (1993), Hart, Shleifer and Vishny (1996)) and common sense suggest that governments are likely to pay special attention to political goals such as low output prices, employment or external effects – many of which may be negatively correlated with financial performance. In fact, non profit-maximizing behaviour is a key rationale for government ownership in welfare economics (e.g. Arrow 1969, Shepherd 1989), since government intervention is expected to correct market failures (e.g. Shepherd 1989). Ceteris paribus, the government-owned enterprises may therefore be expected to be low performers in terms of conventional performance measures. A high level of government ownership could therefore very well be associated with relatively low market valuation. Likewise the determinants of government ownership should in theory differ from determinants of private ownership. Governments might have a preference for owning companies that are not commercially viable (i.e. relatively unprofitable) - for example to prevent job losses or to maintain production of indispensable services. Therefore we propose the following hypothesis.

Hypothesis 5a. Market valuation has a negative effect on government ownership.

Hypothesis 5b. Government ownership has a negative effect on market valuation.

The hypotheses are summarized in Table 1.

// INSERT TABLE 1 ABOUT HERE //

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Control Variables

Previous research has found that ownership structure is sensitive to both nation and industry effects (Pedersen and Thomsen 1997, Thomsen and Pedersen 1998). In order to filter out these effects we construct nation and industry indices (average levels of insider ownership by industry and nation) and control for these indices when estimating the causes of insider ownership. In addition we test for the effect of company size and firm specific uncertainty, which have previously been found to influence corporate ownership structures both in the USA and in continental Europe (Demsetz and Lehn 1985, Pedersen and Thomsen 1999a). We follow Demsetz and Lehn (1985) in using firm size (assets) as a proxy for firm specific risk, higher levels of which should tend to lower the level of insider ownership. We also use their noise variable (standard deviation of the return on equity) as a measure of uncertainty, higher levels of which arguably tend to aggravate the agency problem and to provide a role for monitoring by insider owners up to a point beyond which the uncertainty begins to lower the value of. Like Demsetz and Lehn we therefore use a quadratic specification: insider ownership = $a*$noise + $b*$noise squared, and we expect a to be positive and b to be negative.

Likewise, market to book values may differ for reasons unrelated to the level of insider ownership in individual companies. Because of industry differences with regard to the intensity of competition and the importance of immaterial assets like knowledge capital, reputation or brand equity, market-to-book values tend to vary by industry. Moreover, market-to-book values may differ because of nation effects related to the size and liquidity of the stock market as well as macroeconomic variables. Again we construct nation and

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industry indices (average levels of market-to-book value for industry and nation) and control for these indices when estimating the effects of insider ownership. We also control for firm growth as an indicator of firm specific variables that are not, or at least only indirectly related to ownership structure. Finally we control for the effects of capital structure with the underlying hypothesis that a higher debt equity ratio implies a higher debt pressure that could curb agency problems and raise market value (Jensen 1989, Thomsen and Pedersen 2000).

DATA AND MEASUREMENT

To test our hypotheses we use a database containing information on ownership structures of the largest non-financial companies in continental Europe (including Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Spain and Sweden). The companies studied are the largest independent, non-financial ownership units in terms of turnover in these countries. In 1991 the ownership structure (e.g. the ownership share and the identity of the largest owner) was identified for all of the 100 largest companies in each of these countries. Many different sources including local directories for each country were applied in order to identify the ownership structure for each company (see Pedersen and Thomsen 1997 for more information).

We link this database on ownership structure with the Worldscope database (Worldscope, annually) in order to obtain market data and accounting figures for each company. However, market data is only available for companies listed on the stock exchange and even many of the largest companies (e.g. cooperatives, foreign owned and foundation owned companies) were not listed. Therefore, due to missing values (mainly lack of market data) the usable

sample was reduced to a total of 214 companies. The largest number of companies was from France (33) and Germany (32) while the lowest number of companies was from the smaller countries: Austria (4) and Denmark (10).

Based on the information on ownership structure in 1991 each company was categorized according to the identity of the inside owner(s). The dominant inside owner(s) were persons/families in 61 companies, financial institutions in 37 companies, governments in 30 companies and other corporations in 86 companies.

The database contains observations of the identity of the inside owners (mainly the largest owner), the fraction shares held by "insiders" (i.e. closely held shares), main industry (4-digit ISIC-Code), nation and four annual observations (1992-1995) of market-to-book value, total assets, sales growth, debt-equity ratio and return on equity. From these figures we calculate the noise/uncertainty variable (the standard deviation of return on equity) as well as industry and nation indices for market-to-book values and level of insider ownership. A description of the variables is found in Table 2. The data set contains 214 companies over 3 years (we used one year to construct a lagged variable) and a total of 642 firm-year observations.

// INSERT TABLE 2 ABOUT HERE //

Insider ownership represents "*the shares held by insiders* " (Worldscope 1994) including officers, directors and their families, shares held in trust, shares held by another corporation (except in a fiduciary duty by banks), shares held by pension/benefit plans or by individuals who hold more than 5%. This measure is somewhat broader than the director ownership variable used in many previous studies since it involves the holdings of other large investors

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apart from management including financial institutions, other corporations and organizations. Since the ownership share is confined to the interval between 0 and 100 we use a logit transformation of the variable in the statistical analysis (see Table 2).

Table 3 provides a correlation matrix and some descriptive statistics.

// INSERT TABLE 3 ABOUT HERE //

The average level of insider ownership is quite high: 46% of the shares in even these very large companies tend to be closely held. This accords with previous research (e.g. Pedersen and Thomsen 1997, La Porta et al. 1998), which has found high levels of insider ownership outside the Anglo-American part of the world.

Insider ownership is positively related to present and lagged measures of market valuation (in line with hypothesis 1). As in previous work (e.g. Demsetz and Lehn 1985) it is positively correlated with uncertainty/noise (measured by the standard deviation of return on equity) and negatively, but insignificantly, correlated with company size (assets).

Our market valuation measure, market-to-book value, is negatively correlated with the noise/uncertainty variable (a measure of firm specific uncertainty/risk). It is also *negatively* correlated with the debt/equity ratio which tends to contradict previous findings in which the debt /equity ratio was seen as a control mechanism directed at agency problems (e.g. Jensen 1989) and was found to increase market-to-book values. One reason could be that debt plays a different role in continental Europe because the institutional setting differs (for example with regard to the level of insider ownership, the legal system, the role of banks and other

credit institutions). There is also a positive and significant association with company size (assets) and sales growth, perhaps because the stock market prefers large and liquid, high growth (blue chip) shares.

EMPIRICAL RESULTS

We estimate 3 stage least squares simultaneous equation models of the following type:

1. Insider ownership (t) = Market-to-Book Value (t-1) + control variables and noise
2. Market-to-book value (t) = Insider ownership (t) + other control variables and noise

The assumption here is that market to book value at the end of last year (t-1) along with some control variables influence the level of insider ownership this year, which may again along with other control variables influence the level of market valuation at the end of this year. Since insider ownership is measured during the year, and since insider ownership presumably adjust to market valuation with some lag, whereas market valuation reacts quickly (instantaneously) to changes in ownership, we believe this (bloc recursive) model structure to be the most appropriate. But we also experimented with simultaneous determination of market to book value (t) and insider ownership (t), which produced qualitatively similar results to the ones reported here.

Table 4 contains the main model controlling for nation and industry indices.

// INSERT TABLE 4 ABOUT HERE //

Market valuation is found to have a positive impact on insider ownership (in line with hypothesis 1a). The control variables behave as predicted. Company size tends to lower the percentage of insider ownership (presumably because the absolute risk of holding a given fraction of the shares is larger in large companies). Also, the level of insider ownership tends to first increase and then decrease in the level of uncertainty in line with what was predicted and supported by Demsetz and Lehn (1985).

In the performance equation insider ownership is found to have a positive effect on market valuation (in line with hypothesis 1b). The control variables behave as predicted except for an insignificant effect of the debt/equity ratio, which indicates that debt does not function as an agency control mechanism for companies in continental Europe. One explanation may be that a high level of ownership concentration already disciplines European managers. More generally, capital and ownership structure should probably be regarded as jointly determined in a more complex model than the one estimated here.

Broadly speaking the overall estimates appear to be consistent with the predictions of the LSSV model. Excluding the nation and industry indices did not qualitatively change the results.

Identity effects

We also estimate the simultaneous equation model separately by the identity of the insider owners to test for differences between owner categories.

// INSERT TABLE 5 ABOUT HERE //

Family insider ownership is found to increase with market valuation (in support of
hypothesis 2a), and family ownership is found to have an insignificant effect on market
valuation (hypothesis 2b. is rejected). Apparently, there are countervailing forces at work. For
example, risk aversion and capital rationing may reduce the competitiveness of closely held
family-owned firms. The effect of market valuation on insider ownership is significantly
smaller than the effect on financial or company ownership which could indicate that higher
costs of capital make it relatively more costly for family owners to maintain a given
ownership share of a high value company.

As predicted, **financial insider ownership** is found to increase with market valuation and
also by itself to exert a positive influence on market valuation (hypotheses 3a. and 3b are
supported). According to the LSSV model higher market valuation makes it possible for the
insiders to maintain a higher ownership share, because it is possible for the insiders to finance
the necessary investment by issuing fewer shares to outsiders. And a higher share of the cash
flow rights gives insiders an incentive to maximise shareholder value rather than their private
utility. An alternative interpretation is that financial investors prefer to invest in (blue chip)
companies whose high value creation potential is already appreciated by the market and that
they use their owner influence to increase shareholder value.

However, contrary to what we would expect from the LSSV model both effects are
numerically quite strong – and stronger than for other owner identities. An increase in market
valuation of one standard deviation is estimated to increase insider ownership by slightly less

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than half an insider ownership standard deviation, whereas an increase in insider ownership of one standard deviation is expected to increase market valuation by a little more than half a standard deviation. Theoretically, more cash flow rights should not change the objectives of financial investors very much because their profit diversion costs are presumably high.

Insider ownership by a non-financial corporation is found to be higher the higher the market value and also to exert a positive influence on market valuation (hypotheses 4a and 4b. are supported). Compared to financial ownership the effect of market value on company ownership is somewhat smaller which might indicate higher costs of capital among non-financial companies. But the difference is not significant. In contrast, the positive effect of company insider ownership on market valuation is estimated to be much less than the effect of insider ownership by financial institutions, and the difference is significant. This is contrary to what we would expect from the LSSV model if we assume that non-financial corporate owners have lower costs of profit dispersion compared to financial owners. Apparently the market is less certain that corporate owners will benefit shareholder value.

Finally, as predicted, **government ownership** is found to follow a different logic compared to the other, private ownership categories. Low market valuation is found to increase the level of government ownership, and government ownership is found to lower market valuation. We interpret this to indicate that governments more often than private owners pursue non-value maximizing goals and are more likely than private business to take an ownership interest in unprofitable companies. While this might indicate inferior performance in government-owned companies, it is not clear that governments should necessarily aim for shareholder value creation. On the contrary, there may be a special rationale for government ownership in circumstances when markets fail and private enterprise is commercially unviable.

DISCUSSION

This paper has contributed to the ongoing discussion on the causal link between ownership structure and market valuation.

The results may be summarized as follows. Generally, in this sample of continental European companies 1992-1995, market valuation tends to increase the level of insider ownership, and insider ownership tends to increase market valuation. These results hold for financial and corporate ownership. But family ownership has no significant effect on performance, and for government ownership the results are reversed indicating presumably that governments do not aim for shareholder value creation.

We conclude that the LSSV model is generally supported by our findings, but that the causal relationship between insider ownership and market valuation depends on owner identity. Furthermore, the magnitude of the parameter estimates did not correspond to our assumptions on the relative costs of profit diversion. This indicates that the causal relationship between insider ownership and market valuation is also affected by other forces such as risk aversion/wealth effects and the effects of ownership on corporate control.

A strong feature in the LSSV model is its ability to correctly predict a strong positive effect of market valuation on insider ownership whereas several other arguments (e.g. risk aversion) would tend to point in the opposite direction. The alternative argument for a positive effect suggested by Kole (1997) – that insiders are rewarded ex post by a higher ownership share for their prior performance – appears to be more directly concerned with the effect of changes

in market value on changes in insider ownership (for example as an effect of executive compensation by stock options). The intuition behind the formal argument appears to be that insider owners have an ownership preference- they prefer to share as little as possible of their ownership with outsiders and that high market valuation will allow them to attract the capital that they need with less dilution of their cash flow/ownership rights. The logic of the argument has a parallel in the pecking order theory of finance according to which managers prefer to use other sources of finance than new equity. In the LSSV model the ownership preference is seen as a consequence of incentive alignment with outside owners - the insiders have a stronger incentive to maximise shareholder value when their share of net cash flow is high. But the insider ownership preference may also be attributable to other motives. For example, the insider owners may be able to better influence the company in accordance with their preferences if they maintain a high ownership share. This may also be the case if the insiders aim to maximise shareholder value whereas other ownership categories are less so inclined.

Another advantage of the LSSM model is that it is an equilibrium model, which takes into consideration the Demsetz (1983) critique that ownership structure is not exogenously given but rather an efficient response to the relative costs and benefits of ownership. The findings indicate that shareholder value could be increased by transferring ownership from governments and families to financial institutions. But the incumbent insiders may not want to adjust their holdings to maximize shareholder value if they also value the private utility or political gains associated with ownership.

Our results differ significantly from previous research on US data (Loderer and Martin 1997, Cho 1998, Himmelberg, Hubbard and Palia 1999) that found the effect of insider ownership

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on market valuation to be insignificant. One plausible reason is suggested by La Porta et al (1999b). If the cost of profit diversion vary with the level of investor protection k: $C=C(s,k)$, $C_k > 0$, $C_{sk} > 0$, the effect of insider ownership on market valuation should theoretically be small in countries with high levels of investor protection (k), and for very high levels they might become insignificant. Insignificant results on US data may therefore be explained by a high level of investor protection simply because insider ownership is less important when outside investors are protected by the law. In contrast, if the level of investor protection is lower in continental Europe than in the US, the effect of insider ownership should in theory be larger and more likely to be statistically significant as we observe to be the case.

Future research in this area could go in several directions. Our findings indicate that it is still necessary to take nation effects into account, and there is still a relative scarcity of European compared to US evidence. One concern that should be addressed is that the present paper has studied level effects, which document the relative efficiency of high levels of insider ownership in continental Europe. But there is anecdotal evidence that many European companies are currently undergoing rapid restructuring and increasingly diversifying their ownership and that this is appreciated by the stock markets. Future research could address this issue by focusing more on the relationship between changes in insider ownership and changes in market value.

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Table 1. Summary of the five hypotheses

Equations	*Hypothesis 1* *All companies*	*Hypothesis 2* *Family ownership*	*Hypothesis 3* *Financial ownership*	*Hypothesis 4* *Corporate ownership*	*Hypothesis 5* *Government ownership*
a) Market-to-book value **->** *Insider ownership*	+	+	+	+	-
b) Insider ownership **->** *Market-to-book value*	+	+	+	+	-

+ = expected significant positive effect

- = expected significant negative effect

Table 2. List of Empirical Variables.

Variable	Description	Definition
Insider ownership	Transformation of the fraction of closely held shares (chs) for each year 1993-95. Closely held shares are shares held by insiders including officers, directors (and their families), trust, pension/benefit plans and shares held by another corporation or individuals that hold more than 5%.	Log (chs/ (100-chs))
Market-to-book-value	Transformation of "Market capitalization/equity" for each year 1993-95	Log (Market price-year end * Common shares outstanding/ common equity at year-end).
Market-to-book-value lagged one year	As above, but for the years 1992-94	one lag of market-to-book-value
Standard deviation of Return of Equity	The standard deviation of the Return on Equity for the period 1992-95	
Standard deviation of Return of Equity squared	As above, but squared	
Assets	Transformation of assets in US$ for each year 1993-95	Log (assets)
Average insider ownership by industry	The average fraction of insider ownership for each of the 82 industries (4-digit ISIC) included in the sample.	
Average insider ownership by country	The average fraction of insider ownership for each of the 11 Continental European countries included in the sample.	
Debt-equity ratio	The total debt divided by equity for each year 1993-95	((Long-term debt + short-term debt) / equity)) * 100
Growth of sales	The yearly growth of sales for the year 1993-95	((Sales - last year's sales)/last year's sales)) * 100
Average market-to-book-value by industry	The average level of market-to-book-value for each of the 82 industries (4-digit ISIC) included in the sample.	
Average market-to-book-value by industry	The average level of market-to-book-value for each of the 11 Continental European countries included in the sample.	

Source: The Worldscope Database (annually).

Table 3. Correlation matrix (N=642)

		1	2	3	4	5	6	7	8	9	10	11	12
1)	Insider ownership	1.00											
2)	Market-to-book-value	0.14***	1.00										
3)	Market-to-book-value lagged one year	0.13***	0.85***	1.00									
4)	Standard deviation of Return on Equity	0.19***	-0.15***	-0.19***	1.00								
5)	Standard deviation of Return on Equity squared	0.17***	-0.10***	-0.12***	0.93***	1.00							
6)	Assets	-0.009	0.21***	0.23***	-0.02	-0.02	1.00						
7)	Average insider ownership by industry	0.35***	-0.01	-0.05	0.22***	0.22***	0.11***	1.00					
8)	Average insider ownership by country	0.24***	0.18***	0.19***	0.02	0.06	0.43***	0.15***	1.00				
9)	Debt-equity-ratio	0.003	-0.20***	-0.19***	0.33***	0.30***	-0.18***	0.07*	-020*	1.00			
10)	Growth of sales	0.004	0.19***	0.14***	-0.07*	-0.04	-0.003	-0.0007	0.06	0.01	1.00		
11)	Average market-to-book value by industry	0.05	0.55***	0.58***	-0.24***	-0.19***	0.14***	0.01	-0.02	-0.18***	0.07*	1.00	
12)	Average market-to-book value by country	0.07*	0.49***	0.50***	-0.10**	-0.05	0.45***	-0.03	0.39***	-0.31***	0.04	0.35***	1.00
	Mean	-0.22	0.29	0.13	12.69	332	7.69	0.20	0.43	138	9.99	0.32	0.30
	Standard Deviation	1.48	0.66	0.68	13.12	835	1.38	1.03	0.65	118	19.50	0.36	0.32

Table 4. Simultaneous equations estimated in a three-stages-least-square model (3SLS) with an instrument variable

INDEPENDENT VARIABLES	DEPENDENT VARIABLES	
	Insider ownership	Market-to-book value
Intercept	0.61*	-0.17***
Market-to-book-value lagged one year	0.53***	
Standard deviation of Return on Equity	0.05***	
Standard deviation of Return on Equity squared	-0.0005*	
Assets	-0.21***	
Average insider ownership by industry	0.45***	
Average insider ownership by country	0.57***	
Insider ownership		0.09***
Debt-equity-ratio		-0.0001
Growth of sales		0.005***
Average market-to-book value by industry		0.77***
Average market-to-book value by country		0.66***
Number of observations	642	642
F-value	30.14***	97.28***
R-square	0.22	0.43

Table 5. Simultaneous equations estimates by identity of the largest owner

INDEPENDENT VARIABLES	IDENTITY OF LARGEST OWNER							
	FINANCIAL		COMPANY		FAMILY		GOVERNMENT	
	Ownership concentration	Market-to-book value	Ownership concentration	Market-to-book value	Ownership concentration	Market-to-book value	Ownership concentration	Market-to-book value
Intercept	-0.05	0.10	0.33	-0.19***	0.73	-0.04	2.51***	-0.29**
Market-to-book-value lagged one year	0.99***		0.74***		0.44***		-0.68***	
Standard deviation of Return on Equity	0.05**		0.06**		0.03		0.01	
Standard deviation of Return on Equity squared	-0.0002		-0.0008**		-0.0003		-0.00005	
Assets	-0.24**		-0.20***		-0.20***		-0.35***	
Average insider ownership by industry	0.40***		0.43***		0.41***		0.51***	
Average insider ownership by country	0.61***		0.81***		0.51***		0.33*	
Insider ownership		0.22***		0.09***		0.04		-0.20**
Debt-equity-ratio		-0.0007		-0.0002		-0.0005		-0.0004
Growth of sales		0.003		0.006***		0.004*		0.006*
Average market-to-book value by industry		0.77***		0.54***		1.03***		0.73***
Average market-to-book value by country		0.63		0.87***		0.23*		0.67***
Number of observations	109	109	258	258	182	182	90	90
F-value	9.84***	16.87***	13.38***	37.34***	11.30***	35.79***	6.70***	10.42***
R-square	0.36	0.45	0.24	0.42	0.28	0.50	0.32	0.38