****PRELIMINARY DRAFT—NOT FOR ATTRIBUTION****

Ownership and Performance in Europe

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Abstract

In this paper, we consider the relationship between performance and ownership concentration in a large number of publicly traded and privately held companies located in smaller European economies (Austria, Belgium, Finland, Ireland, and Ukraine). These countries represent the five legal families (German, French, Scandinavian, Common Law, and Urasian, respectively), yet are characterized by fairly illiquid and small stock markets. This paper is the first cross-country study we know of to explore the relationship between corporate performance and ownership concentration for both public and private firms from all five legal traditions.

Combining two literatures—on ownership concentration and performance as well as on law and finance—we generate our central hypothesis that the relationship between performance and ownership concentration should vary by the level of legal protection afforded small shareholders as well as the type of ownership concentration (we consider the ownership concentration of a single blockholder as well as that of a coalition of the five largest blockholders). Our tobit empirical tests control for firm size (log of total assets as well as log of employees), status as a listed firm, risk (standard deviation of return on assets), ratio of intangible to total assets, status as a financial firm, leverage, and age.

Our results confirm our hypothesis in that firms located in the country with the lowest level of legal protection in our sample—Ukraine—exhibit a very different relationship between performance and ownership concentration depending on whether we consider the share owned by a single shareholder or by a coalition of the five largest shareholders. Specifically, where minority shareholders are least protected, ownership concentration of a single blockholder is negatively related to performance; but the ownership portion of a coalition of the five largest shareholders is positively related to performance. We conclude with some implications for the literature and for future research.

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I. Ownership Concentration and Performance

The empirical literature relating ownership concentration and performance is characterized by mixed results.[1] Although some of these early studies find that ownership concentration and performance are related in publicly traded firms, the most recent salient finding (Demsetz and Villalonga, 2001) is that in an environment where ownership structure is endogenous—where shares can be freely traded in a liquid equity market—ownership structure and performance arise together, and we should expect no clear relationship between them. This analysis is designed to address the situation in companies that have equity listed on public exchanges, so that any resulting ownership structure is an outcome that depends on market forces such as the willingness of potential and existing owners to own shares of stock. In a liquid stock market, shares can be inexpensively bought or sold, determining the resulting ownership structure.

Fewer studies examine the relationship between ownership concentration and performance in privately held companies, however. To a large part, this may be attributable to the fact that the original thesis of Berle and Means (1932)

[1] Most of the early work on this topic was done using data from publicly-traded firms in the United States (Demsetz, 1983; Demsetz and Lehn, 1985; Morck et al, 1988; Hermalin and Weisbach, 1988; Loderer and Martin, 1997; Cho, 1998; Himmelberg et al, 1999; Holderness et al 1999; McConnell and Servaes, 1990). More recent analyses have considered the situation in a number of European countries, some of these even analyzing blocks of ownership in privately-

focused on the corporate governance problems inherent in widely dispersed companies. In this perspective, managers are able to divert resources away from shareholders, so that ownership concentration should have an inverse relationship with performance. If this is the case, controlling blockholders have a positive impact on the value of equity for all shareholders (Shleifer and Vishny, 1986; Grossman and Hart, 1988; Harris and Raviv, 1988).

Recent empirical work focusing on firms located in different legal environments, however, has indicated that a different kind of corporate governance problem can confront minority shareholders, even if managers are monitored effectively and kept under tight control by a controlling block of shareholders. Here, the conflict is not between entrenched managers and diffuse shareholders, but between blockholders and unprotected minority shareholders. Given the separation of ownership and control that characterizes many firms, minority shareholders may be subject to tunneling and diversion of profits to majority shareholders through pyramid schemes and other techniques (Atanasov, 2005; Claessens, et al 2002; Dyck and Zingales, 2004; Nenova, 2002).

In this paper, we consider the relationship between performance and ownership, and include in our analysis firms with equity that does not trade on liquid public exchanges. Our primary hypothesis is that in an environment with illiquid shares (due either to non-listed status or listing on a smaller stock market), the endogeneity of ownership concentration and performance may not arise. That

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held firms (Becht and Mayer, 2002; Gutierrez and Tribo, 2004; Maury and Pajuste, 2004; Volpin,

is, for firms listed on highly liquid public stock exchanges, minority shareholders can freely sell their stock with little loss of value, and the equilibrium outcome suggested by Demsetz and Villalonga (2001) will develop: ownership concentration and performance will not be related. In the environments we consider—with illiquid exchanges or for non-listed firms—there may well be a robust relationship between ownership and performance. To determine whether ownership concentration is positively or negatively associated with performance, we need to consider both the type of ownership concentration (single shareholder or coalition of shareholders) and the level of legal protection afforded by the legal system to minority shareholders.

This leads us to incorporate the literature relating to the level of protection for minority shareholders in various legal traditions. For this reason, we include in our analysis countries representing each of the five major legal families (La Porta, et al, 1998; hereafter LLSV; Pistor, 2002; Bogdan, 1994): French, German, Scandinavian, English Common Law, and Eurasian.

How might legal family affect the relationship between ownership and performance? This may vary depending on whether the controlling block is held by a single shareholder, or by a coalition of shareholders. (Bolton and von Thadden [1998] present a theoretical model that specifies conditions when either dispersed or concentrated ownership may be ideal.) Figure 1 presents a summary of our major hypotheses, contrasting how the relationship between ownership

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2002).

concentration and performance varies in different legal environments and for a single owner as opposed to a coalition of owners.

In environments with poor legal protection (e.g., Bulgaria as analyzed by Atanasov, 2005), a single blockholder will be able to divert a large portion of the value away from minority shareholders. This diversion could take many forms: transfer pricing of intermediate goods that reduces profits, loans made to other firms or individuals at interest rates that provide subsidies to the borrower, and even outright asset stripping (selling corporate assets at below-market prices to another entity fully owned by the majority shareholder). For these reasons, we might expect to see a negative relationship between ROA and ownership concentration by a single bockholder in environments with "weak" legal protection for minority shareholders.

Another effect may be dominant, however, in environments where small shareholders are protected from diversion by the legal system. For profitable firms, there may be an incentive for a controlling shareholder to obtain greater ownership, thereby receiving a higher portion of the dividend payments. The concept of "control potential" in Demsetz and Lehn (1985) reflects this tendency; their empirical findings of more concentrated ownership for firms with higher earnings and stock price volatility confirm this effect. If shares are not liquid, their price will not be bid upwards, so capital gains will not be a motive for more ownership, but there will be additional incentives for higher concentration when performance is good.

How might coalitions of controlling shareholders affect the relationship between control and performance in different legal environments? Based on previous theoretical and empirical research (Bennedsen and Wolfenzon, 2000; Volpin, 2002; Faccio et al, 2001; Lehman and Weigand, 2000; Maury and Pajuste, 2003; Bennedsen and Wolfenzon, 2000; Gutierrez and Tribo, 2004), we expect the influence of a controlling coalition to deter the diverting tendencies of a single large shareholder. In this case—irrespective of the strength of legal protections—we would expect to see a positive relationship between ROA and ownership concentration, since the "control potential" effect becomes dominant over the diversionary tendencies of a dominant single owner.

Studying privately held firms in small countries with relatively illiquid markets allows us to avoid one potentially thorny aspect the relationship between performance and ownership concentration: do ownership outcomes *reflect* performance, or *cause* it? (For example, Demsetz and Villalonga [2001] focus on the "market-mediated ownership patterns" [p. 209] typical of publicly traded firms on the very liquid equity markets of the U.S.) Given the lack of liquidity in the equity of privately held firms that form the bulk of our analysis—and the relative illiquidity even of publicly traded shares in these contexts—and the stability of ownership patterns for such companies (e.g., as in Spain; see Gutierrez and Tribo, 2004), we are less concerned that endogeneity calls our results into question. In any event, given that we are only studying the association of ownership concentration with performance, and not making causal inferences in

one direction or the other; the results that we generate are interesting whether one is causing the other or if ownership concentration and performance are in fact jointly determined.

This paper proceeds as follows. Section II outlines the data and models, Section III presents the results of our empirical analysis, and Section IV concludes.

II. Data and Models

A. Data and Descriptive Statistics

We employ Bureau van Dyck's Amadeus database to conduct our empirical tests, including all data available for our countries between the years 1996 and 2005. Giannetti (2003) uses this data source for an analysis of financial performance of Western European countries. The Central and Eastern Europe portion of the database is used in empirical tests of leverage adjustment speed by Nivorozhkin (2005) and to consider the effect of legal rights on leverage by Hall and Jorgenson (forthcoming). Desai, Gompers, and Lerner (2003) use the data to show that firms face capital constraints induced by institutional factors, which affect the ability of firms to grow.

We construct two dependent variables, each measuring a different aspect of ownership concentration. Following Demsetz and Lehn (1985), we define variable A1 as the portion of ownership held by the largest single shareholder. Our variable A5 reflects the portion of ownership held by the five largest

shareholders, and reflects the fact that many closely-held (and publicly traded) firms are held by a coalition of large block-holders. Given the nature of our sample of privately-held firms, these numbers cluster near 100; mean values for A1 and A5 are 76% and 87%, respectively. Because of this, we use tobit estimation censored at 1 and 100. To ensure data quality for our analysis, we truncated (deleted) all observations with log employees less than 1, with A1 or A5 over 100, and with average ROA below -49% or above 59% (the latter corresponded to a truncation at the 1% and 99% level; see Frank and Goyal, 2005). We perform an additional set of multivariate estimations for each country in the analysis based on the quality of data for individual firms using a variable *countroa*, which is simply the number of observations from 1996 – 2005 of the performance variable of accounting return on assets (ROA).

Table 1 provides a breakdown of the variables we use, along with their minimum and maximum values, means, and standard deviation. The portion of our sample that comes from Austrian, Belgian, Finnish, Irish, and Ukrainian firms, respectively, is 6.0%, 32.6%, 8.8%, 14.7%, and 37.8%. Note that although the number of observations is close to 47,000 in most cases, our empirical analysis omits any firms with incomplete data (e.g., missing completely one or more control or choice variables), leading to a somewhat smaller but still quite substantial number of observations for each country-level empirical estimation. (We performed some pooled regression tests, but the large number of Ukrainian

observations tended to make the pooled analysis similar to the tests for Ukraine only; results of these tests are available from the authors by request.)

B. Empirical Tests and Models

We use a battery of independent variables typical of the literature, as defined in Table 1. We estimate the following model:

$$OWN_i = \alpha + \beta 1 ROA_i + \beta 2 LnTotAssets_i + \beta 3 LnEmployees_i + \beta 4 StDevROA_i + \beta 5 Listed_i + \beta 6 Leverage_i + \beta 7 Financial_i + \beta 8 Age_i + \beta 9 Intangible + \varepsilon \quad (1)$$

where *i* indexes each firm in our database. Leverage is defined as the average value of total debt divided by total assets over each year in the 1996 to 2005 study period. *Intangible* is equal to the amount of intangible fixed assets divided by total assets. Age is the number of years since the firm was founded. The dummy variables *listed* and *financial* take the value of "1" for firms that are listed on a public stock exchange and for firms with 3-digit SIC code beginning with "6", respectively. Note that Demsetz and Lehn (1985) found a negative and significant coefficient for this financial firm dummy variable when regressed against A5.

To ensure that our results are not due to poor data quality, in a set of robustness tests we include an additional variable, *countroa*, that takes the value from 1 to 10, reflecting the number of years for which both earnings (operating profit/loss) and total assets are reported.

III. Results

Univariate correlations between ROA and the two definitions of ownership concentration are presented in Table 2. This provides an initial confirmation of our central hypothesis in that the country with historically the weakest[2] legal environment for the protection for minority shareholders, Ukraine, shows a negative relationship between A1 and ROA, but a positive relationship between A5 and ROA. The other countries presumably have strong enough legal protections for shareholders such that there is no clear distinction between Civil Law and Common Law countries, or even among the French, German, and Scandinavian countries in our sample. We shall assess the implications of this finding in more detail, below.

Table 3 presents tobit regression results using A1 as the dependent variable. Broadly, the regression results are consistent with previous research. Volatility (measured in the accounting sense of standard deviation of annual ROA over the 1996 – 2005 period) is positively associated with A1 and the coefficient has a high level of significance (except for Ukraine). This is consistent with the findings of Demsetz and Lehn (1985) who explain this result by arguing that

[2] Based on a study of shareholder protection in Central and Eastern Europe (Pistor, et al, 2000), Ukraine's level of statutory shareholder protection at 2.5 is inferior to the LLSV score of 4.0 for Common Law countries (including Ireland) and of 3.0 for Scandinavian countries (including Finland). Although the score is higher than for the global average of German and French legal family countries (2.33 each), Ukraine's investors faced significant obstacles to enforcing what laws exist there. It had a rule of law score of 3.4, well below the standard enforced in other Central and Eastern European countries (Hungary and Poland, for example, had scores here of 8.7), and presumably quite below the level of enforcement prevailing in countries with long-standing commercial codes such as Austria, Belgium, Finland, and Ireland.

returns to close monitoring of management are more likely to be higher in uncertain and volatile environments, encouraging more ownership concentration.

The coefficient with consistently the highest magnitude is that for the dummy variable "listed," and the (unsurprising) negative sign indicates that listed firms tend to have lower ownership concentration. Taking this into account, it may not be so surprising that size (measured as log of total assets and log of employees) is sometimes positively related to ownership concentration; studies that use only publicly traded firms tend to demonstrate the opposite relationship, with larger firms having more dispersion, although this is an interesting finding that might bear further investigation. The coefficient for leverage is generally positive and significant, consistent with the previous finding that highly levered firms are under the firm control of a block of shareholders as opposed to managers that generally prefer the flexibility of optional dividend payments (vs. mandatory interest payments) and lower probability of failure in the event of distress (because they are more likely to be replaced if the firm is forced into bankruptcy). Ukraine is again an exception here perhaps because concentration is so high in the first place, as indicated by the large intercept.

Older firms have consistently less ownership concentration, perhaps due to the relative ease of attracting additional owners once an established history of performance is established. Firms with more intangible assets generally tend to have lower levels of concentration. This finding is directionally consistent with a previous study (Gutierrez and Tribo, 2004), although our results have a much

higher level of significance (it should be noted here that their measure of concentration is different). Again consistent with Demsetz and Lehn (1985), the coefficient for the financial firm dummy is generally negative and significant, with Ukraine again forming an interesting exception. Perhaps the high degree of government intervention in the banking system there is the cause of this.[3]

Although the models have good fit (with LR Chi^2 always highly significant), the level of explanatory power (R^2) tends to be rather low. To address any concerns with data quality, we include in alternative robustness specifications for each country an additional estimation that includes the variable *countroa*, which proxies for data quality. Although this variable is often significant, whether we consider the results in Table 3 or Table 4, its sign is inconsistent, and the major results in terms of signs and levels of significance of the other coefficients in the study are not greatly affected by its inclusion.

Our expectation is that in environments with weak investor protection, a larger amount of ownership in the hands of a single block-holder (A1) should be associated with lower ROA. Consistent with the univariate tests presented in Table 2, the results of our multivariate analysis presented in Table 3 show that the coefficient for ROA is positive and significant except in one country—Ukraine.

LLSV found that the global average of investor protection is inferior in civil law countries relative to those with a common law heritage; yet we find no

[3] For financial firms in the non-Ukrainian sample, the average level of concentration (mean value of A1) for the non-financial firms is 76.42; for financial firms it is only 70.17 (*p*-value of t-test for difference in means is 0.000). For Ukraine, the mean value of A1for financial firms is 88.77 and for non-financial firms it is 56.77 (*p*-value of t-test for difference in means of 0.000).

evidence that our common law representative country (Ireland) had a lower coefficient for ROA. In our analysis focusing on some smaller countries in Europe, the coefficient for performance (ROA) is positive and statistically significant even in Belgium and Austria, and not substantially different from that of Finland and Ireland. In fact, Finland and Ireland had coefficients of 22.4 and 27.66, respectively, but the coefficient for Austria was 35.48 and that for Belgium was 19.98. Although quite clearly more countries need be analyzed before making any definitive conclusions, it appears that other factors (perhaps including rule of law or the degree to which existing commercial law is enforced by the courts) may be at play in terms of the protection for minority shareholders in these countries.

Finally, Table 4 provides tobit regression results (again censored at 1 and 100) with the dependent variable A5, measuring the ownership concentration of the five largest shareholders. Here we see a more traditional sign for the size variable log of total assets, such that larger firms have more dispersed ownership in Austria and Ukraine, although the sign of the coefficient is positive and significant for Belgium and Finland. Risk as measured in the accounting sense of standard deviation of ROA is (generally) positively associated with ownership concentration, consistent with the A1 regressions and with prior research. Listed status has the expected negative and highly significant coefficient, with a very large magnitude. The coefficient for leverage is positive when significant, as before, and the coefficients for age, asset intangibility, and for the financial firm

dummy are consistent with Table 3. As before, the LR Chi^2 is very large and significant, and the *countroa* variable does not greatly change the magnitude or level of significance for the control or choice variables in this study.

In terms of the key variable in our study—performance as measured by accounting ROA during 1996 to 2005—we find that it is positively related with ownership concentration measured by A5. In all countries included in our study, the coefficient for performance is positive and is generally highly significant (the lone exception is Finland, where the coefficient is still positive, but with a level of significance of only 9% when the *countroa* variable is omitted, and of 19.2% when it is included in the estimation).

IV. Conclusion

This paper was motivated by two literatures: one relating ownership to performance, and the other relating legal protection of investors to financial outcomes. Combining these frameworks, we developed a framework that indicates that the relationship between performance and the level of ownership concentration should vary depending on whether we focus on a single shareholder as opposed to a coalition of blockholders, and depending on the level of legal investor protection afforded to shareholders. In environments with weak protection of minority shareholders, a single large blockholder would be able to successfully divert profits away from minority shareholders, consistent with the empirical finding for publicly listed firms in Bulgaria (Atanasov, 2005). Where

investor protection is strong, blockholders in privately held firms have an incentive to obtain high levels of dividend payments not by diversion but by simply holding on to large blocks of equity, leading to a higher concentration of ownership in companies that perform well, irrespective of whether that concentration is measured by the ownership portion of a single shareholder or a block of the five largest shareholders.[4]

Our empirical results based on regression analysis of the period 1996 – 2005 for almost 37,000 firms located in five small countries of Europe with varying degrees of investor protection is largely consistent with this framework. We find that the country with the least amount of legal recourse for investors (especially when jointly considering the combination of statutory laws and their enforcement) is Ukraine. In this country, we find that the ownership concentration of a single large block-holder is related inversely to performance (measured in the accounting sense of annual ROA for the years 1996 – 2005); whereas the level of ownership concentration for the coalition of the five largest shareholders is positively related to performance. This provides further evidence substantiating the theoretical model of the beneficial impact of a coalition of blockholders presented by Bennedson and Wolfenzon (2000).

One interesting result from our research is that although LLSV argue for an important distinction between common law and civil law countries (and leave

[4] Of course, we realize here that we are assuming that some sort of market—albeit illiquid—for shares of privately held firms exists. This is certainly the case over the ten-year time period we consider here. Although ownership tends to be very stable for privately held firms (empirically

Eurasian legal tradition completely out of their empirical work), our analysis of a limited number of European economies did not confirm this expectation. Although the sample is so far limited to five countries, our findings justify further analysis as to the key distinctions between various legal families, whether firm-level financing behavior is affected by them, and if so how.

shown at least for Spain by Gutierrez and Tribo, 2004), the long-term liquidity of shares would be a fascinating subject for additional research should data on this become available at some point.

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Figure 1: Hypothesized Relationship Between Block Size and Perfomance

	A1	**A5**
Weak investor protection	**Negative** **(Single large shareholder diverts from minority shareholders, driving down performance)**	**Positive** **(Coalition of owners mitigates diversion propensities of largest shareholder)**
Strong investor protection	**Positive** **(Single shareholder drawn to obtain more profits)**	**Positive** **(Blockholders drawn to obtain more shares to achieve greater dividend payments)**

Table 1: Data Description

Variable	Definition	n	Mean	StDev	Min	Max
A1	Ownership share of largest shareholder	47,670	76.0207	31.85821	0	100
A5	Ownership share of five largest shareholders	47,670	87.70053	27.37735	0	100
ROA	Average of return on assets for 1996 to 2005, defined as EBITDA/ Total assets	47,670	.0453957	.1126381	-.4899133	.5898796
Log of Employees	Natural log of average number of employees from 1996 to 2005	40,835	4.116712	1.606227	0	11.85272
Log of Total Assets	Natural log of average total assets from 1996 to 2005, expressed in thousands of Euros	47,668	8.017707	1.786805	-.5108256	21.17741
Leverage	Average amount from 1996 to 2005 of total debt/ total assets	46,787	.6050671	1.267851	-.9079065	159.848
Intangibility	Average amount from 1996 to 2005 of intangible fixed assets/ total assets	46,412	.0156201	.0611906	-.3920341	1
Listed	Dummy variable taking value of "1" for listed firms	47,670	.0080554	.0893905	0	1
Financial	Dummy variable taking value of "1" for firms with 3-digit SIC beginning with "6"	44,669	.1034498	.3045489	0	1
CountROA	Number of observations for ROA during 1996 – 2005 time period	47670	6.346591	2.719797	1	10
Austria	"1" for Austria	47,670	.0603105	.2380637	0	1
Belgium	"1" for Belgium	47,670	.3264107	.4689044	0	1
Finland	"1" for Finland	47,670	.0883994	.2838779	0	1
Ireland	"1" for Ireland	47,670	.1467799	.3538901	0	1
Ukraine	"1" for Ukraine	47,670	.3780994	.4849177	0	1

Table 2: Correlation of ROA with A1 and A5 by Country
(*p*-values in parentheses)

Country	A1	A5
Austria	0.05** (0.011)	0.07*** (0.001)
Belgium	0.05*** (0.000)	0.005*** (0.000)
Finland	0.03** (0.037)	0.02 (0.301)
Ireland	0.01 (0.484)	0.04*** (0.001)
Ukraine	-0.056*** (0.000)	0.013* (0.081)
All Countries	0.01 (0.269)	(0.01)* (0.060)

Table 3: Tobit Regression Results with Dependent Variable A1
(Tobit estimation truncated at 0 and 100; p-values in parentheses)

	Austria		Belgium		Finland		Ireland		Ukraine	
Constant	169.35*** (0.000)	161.41*** (0.000)	49.75*** (0.000)	38.12*** (0.000)	94.49*** (0.000)	82.40*** (0.000)	103.37*** (0.000)	103.25*** (0.000)	199.47*** (0.000)	181.16*** (0.000)
ROA	60.61*** (0.000)	63.80*** (0.000)	23.80*** (0.000)	21.14*** (0.000)	18.91* (0.091)	14.63 (0.192)	32.14*** (0.008)	32.12*** (0.008)	29.00*** (0.005)	28.20*** (0.006)
LnTotAssets	-4.62*** (0.003)	-3.09* (0.058)	3.40*** (0.000)	3.57*** (0.000)	3.04** (0.016)	3.00** (0.017)	1.13 (0.272)	1.08 (0.306)	-3.45*** (0.000)	-3.31*** (0.001)
LnEmployees	1.61 (0.288)	2.02 (0.182)	1.83*** (0.000)	1.84*** (0.000)	1.19 (0.399)	1.38 (0.330)	-0.21 (0.853)	-0.23 (0.839)	6.16*** (0.000)	4.26*** (0.002)
StDevROA	4.13 (0.843)	15.66 (0.462)	51.97*** (0.000)	51.32*** (0.000)	26.80*** (0.041)	26.25** (0.045)	25.99** (0.030)	25.68** (0.033)	28.02** (0.019)	25.57** (0.032)
Listed	-65.64*** (0.000)	-64.79*** (0.000)	-26.99*** (0.000)	-25.05*** (0.000)	-85.01*** (0.000)	-86.26*** (0.000)	-69.24*** (0.000)	-69.15*** (0.000)	-52.53** (0.017)	-50.42** (0.023)
Leverage	10.46* (0.082)	10.54* (0.079)	-0.49 (0.590)	-0.32 (0.722)	17.43*** (0.000)	15.12*** (0.000)	11.78*** (0.002)	11.79*** (0.002)	-3.05 (0.331)	-0.56 (0.862)
Age	0.04 (0.602)	0.08 (0.309)	0.01 (0.659)	-0.06** (0.046)	-0.18** (0.034)	-0.30*** (0.001)	-0.30*** (0.000)	-0.30*** (0.000)	-0.19*** (0.000)	-0.24*** (0.000)
Intangibility	-5.62 (0.813)	-15.31 (0.519)	-18.01*** (0.018)	-10.02 (0.196)	-22.22 (0.179)	-16.43 (0.323)	-34.75* (0.091)	-34.52* (0.093)	-8.10 (0.836)	-15.27 (0.694)
Financial	-12.74** (0.037)	-12.55** (0.039)	-9.05*** (0.000)	-8.73*** (0.000)	-0.721 (0.914)	0.31 (0.963)	-2.77 (0.581)	-2.72 (0.589)	31.22*** (0.000)	30.36*** (0.000)
Count ROA	--	2.74*** (0.001)	--	1.35*** (0.000)	--	2.03*** (0.000)	--	0.15 (0.829)	--	4.80*** (0.000)
Observations	1,669		13,083		3,862		2,010		16,625	
Pseudo R^2	2.74%	2.96%	0.36%	0.40%	0.88%	0.93%	1.27%	1.27%	0.26%	0.35%
LR Chi^2	131.67*** (0.000)	142.23*** (0.000)	340.77*** (0.000)	375.13*** (0.000)	143.74*** (0.000)	152.96*** (0.000)	125.89*** (0.000)	125.94*** (0.000)	66.69*** (0.000)	88.66*** (0.000)

†, *, **, and *** indicate significance at the 15%, 10%, 5%, and 1% levels, respectively

Table 4: Tobit Regression Results with Dependent Variable A5
(Tobit estimation truncated at 0 and 100; p-values in parentheses)

	Austria		Belgium		Finland		Ireland		Ukraine	
Constant	169.35*** (0.000)	161.41*** (0.000)	49.75*** (0.000)	38.12*** (0.000)	94.49*** (0.000)	82.40*** (0.000)	103.37*** (0.000)	103.25*** (0.000)	199.47*** (0.000)	181.16*** (0.000)
ROA	60.61*** (0.001)	63.80*** (0.001)	32.80*** (0.000)	21.12*** (0.000)	18.91* (0.090)	14.63 (0.192)	32.14*** (0.008)	32.12*** (0.008)	29.00*** (0.001)	28.20*** (0.006)
LnTotAssets	-4.62*** (0.003)	-3.09* (0.058)	3.40*** (0.000)	3.57*** (0.000)	3.04** (0.016)	3.00** (0.017)	1.13 (0.272)	1.08 (0.306)	-3.45*** (0.000)	-3.31*** (0.001)
LnEmployees	1.61 (0.288)	2.02 (0.182)	1.83*** (0.000)	1.84*** (0.000)	1.19 (0.399)	1.38 (0.330)	-0.21 (0.853)	-0.23 (0.839)	6.16*** (0.000)	4.26*** (0.002)
StDevROA	4.13 (0.843)	15.66 (0.462)	51.97*** (0.000)	41.32*** (0.000)	26.80** (0.041)	26.15** (0.045)	25.99*** (0.030)	26.15*** (0.045)	28.02*** (0.019)	25.57** (0.032)
Listed	-65.64*** (0.000)	-64.79*** (0.000)	-26.99*** (0.000)	-25.05*** (0.000)	-85.01*** (0.000)	-86.26*** (0.000)	-69.24*** (0.000)	-69.15*** (0.000)	-53.53** (0.017)	-50.42** (0.023)
Leverage	10.46* (0.082)	10.54* (0.079)	-0.49 (0.590)	-0.32 (0.722)	17.43*** (0.000)	15.12*** (0.000)	17.43*** (0.000)	15.12*** (0.002)	-3.05 (0.331)	-0.56 (0.862)
Age	0.04 (0.602)	0.08 (0.309)	0.01 (0.659)	-0.06*** (0.046)	-0.18** (0.034)	-0.30*** (0.001)	-0.18** (0.034)	-0.30*** (0.001)	-0.19*** (0.000)	-0.24*** (0.000)
Intangibility	-5.62 (0.813)	-15.31 (0.519)	-18.01** (0.018)	-10.02 (0.196)	-22.22 (0.179)	-16.43 (0.323)	-22.22 (0.179)	-16.43 (0.323)	-8.10 (0.836)	-15.27 (0.694)
Financial	-12.74** (0.037)	-12.55** (0.039)	-9.05*** (0.000)	-8.73*** (0.000)	-0.721 (0.914)	0.31 (0.963)	-0.721 (0.914)	0.31 (0.963)	31.22*** (0.000)	30.36*** (0.000)
Count ROA	--	-2.74*** (0.001)	--	1.35*** (0.000)	--	2.03*** (0.000)	--	0.15 (0.829)	--	4.80*** (0.000)
Observations	1,669		13,803		3,862		2,010		16,265	
Pseudo R^2	2.74%	2.96%	0.36%	0.40%	0.88%	0.93%	1.27%	1.27%	0.26%	0.35%
LR Chi^2	131.67*** (0.000)	142.23*** (0.000)	340.77*** (0.000)	375.13*** (0.000)	143.74*** (0.000)	152.96*** (0.000)	125.89*** (0.000)	125.94*** (0.000)	66.69*** (0.000)	88.66*** (0.000)

†, *, **, and *** indicate significance at the 15%, 10%, 5%, and 1% levels, respectively