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## Legal Origin and Size Effects in European Listed Firms

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# Legal Origin and Size Effects in European Listed Firms

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## Abstract

This paper investigates the impact of legal tradition and firm size on investment performance for firms in 16 European countries. Europe as a region is of special interest since the legal systems differs widely. Anglo Saxon, German, French as well as Scandinavian variants of legal systems can be found in Europe. Previous studies suggest that minority shareholders enjoy a higher degree of property rights protection in common law (Anglo Saxon) countries compared to civil law (French, German and Scandinavian) countries. The cost of governance as a function of firm size is examined. We also look at expropriation of minority shareholders as a result of large organizations and hierarchies.

This study differs from earlier studies by concentrating on the firm size and its effects on investment performance and by connecting it to the legal origin in each of the 16 European countries included in the study. For civil law countries we find, as expected, a negative relation between firm size and performance while there is no relation for common law countries. For individual countries, the effect of firm size and legal origin on investment performance is however ambiguous.

**JEL codes:** G30, C23, L25

**Keywords:** Corporate governance, firm size, legal origin, marginal q

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## **Introduction**

This paper focus on legal origin, firm size and investment performance in listed firms in 16 European countries. We add to earlier studies by combining the literature on legal origin and minority shareholder protection with the literature on managerial discretion and limits to firm size. Representatives on the first strand of literature are among others La Porta et al. 1998, 1999 and 2008 while the second strand is associated with Coase (1937) and Williamson (1963 and 1985) as leading names. Another rather unique feature of this study is the use of marginal q as performance measure. This is a measure that mirrors investment performance in a congenial way that has not been so frequently used as Tobin's Q.

Countries with legal systems with low minority shareholder protection is expected to have worse firm performance than countries where minority shareholder protection and property rights are high. With low shareholder protection managers have more possibilities to expropriate shareholders, for example by increasing the number of employees in the hierarchy and hence increase their perceived importance of their own position (Williamson, 1963).

We assume that in relatively large firms, in terms of number of employees, the possibilities for expropriation is larger than for relatively smaller firms. The relatively large firms (in any terms of size measurement) commonly have high numbers of shareholders with a large portion of minority shareholders. This is common even if the firm is controlled by one majority shareholder, hence making protection of minority shareholders even more imperative to prevent expropriate behavior from the management and/or the majority owner.

The impact of legal traditions on shareholder protection is generally considered to be that common law countries (Anglo Saxon) have a higher degree of protection compared to civil law countries (foremost French and German legal origin, but also Scandinavian legal origin). The countries included in this study represent both common and civil law systems. Amongst the civil law legal traditions La Porta et al. (2008) rank the

Scandinavian legal traditions as having highest shareholder protection, followed by the German legal origin and with French legal origin offering the lowest levels of shareholder protection. In this study, each legal tradition is represented by at least two countries. Common law is represented by Great Britain and Ireland. French civil law is represented by Belgium, France, Greece, Italy, Netherlands, Portugal and Spain. German civil law is represented by Austria, Germany and Switzerland. Scandinavian civil law is represented by Denmark, Finland, Norway and Sweden.

The focus is on European countries which is motivated by an ambition to highlight the importance of legal foundation. Other factors like culture and traditions which is shared by many European countries and strongly influenced in many ways by the European Union ( La Porta et al., 2008).

Our purpose is to study the impact of legal origin and firm size on firm performance. We expect to find that legal origin and level of shareholder protection has a positive effect on firm performance and that firm size in combination with lower shareholder protection has a negative effect on firm performance. Our results are in line with our expectations.

### **Legal origin and performance**

The articles written by La Porta, Lopez-de-Silanes, Shleifer and Vishny (often referred to as LLSV) around the end of the 20<sup>th</sup> century are commonly referred to in the legal origin literature. They look at the impact of legal origin on investment performance of firms, protection of minority shareholders and corporate governance. The issue of property rights and minority shareholder expropriation were first drawn attention to by Berle and Means (1932). While Berle and Means focus on the US and its firms with high levels of legal protection of minority shareholder and high levels of dispersed ownership, LLSV has come to show that the US picture is quite different from most other countries around the world. Many countries display high levels of concentrated ownership rather than the dispersed ownership described by Berle and Means and the protection of minority shareholders is found to be substantially lower in Continental European countries. An

effect from lower levels of property right protection is that majority shareholders and/or management have increased possibilities to benefit at the expense of other investors. As a result the return on capital is lowered due to resource allocation decisions not consistent with optimization of the value of the firm.

La Porta et al. (2002) show that corporate valuation in a country is related to the origin of the legal system. They find a median of Tobin's  $q$  for common law countries significantly higher than the median for civil law countries. Their results indicate a relation between legal origin, ownership structure and corporate valuation with common law countries having the best performance and the most dispersed ownership structures.

The papers by LLSV have been followed by a sequence of papers by among others Gugler et al. (2003), (2004), Gugler and Yurtuglo (2003) and Mueller (2006). With a similar take on legal origin and property rights as in the LLSV papers, Gugler et al. and Mueller use a different performance measure. Instead of Tobin's  $q$  they use a marginal  $q$  that shows how corporate investments are evaluated by the stock market (for further background on marginal  $q$ , see Mueller and Reardon (1993)). There are several advantages with a marginal  $q$  measure. One advantage is that it is directly related to the net present value rule of investments. Hence it is possible to measure if the management is catering to own interests at the expense of investors. Another advantage is that the problem in Tobin's  $q$  of calculating the replacement cost of historical investments is avoided. In addition there are several advantages of econometric nature when estimating and interpreting the marginal  $q$ .

Using marginal  $q$  as a measure of investment performance Gugler et al (2003 and 2004) and Mueller (2006) find a similar relationship as LLSV for legal origin, ownership structure and performance. Mueller (2006) uses seven different indicators to study the performance of firms in 53 countries. The countries are grouped by a finer definition of legal origin (English origin, European Germanic origin, Asian Germanic origin, Scandinavian origin and French origin). While the results supports previous studies by LLSV of the effects from legal origin, the results also show large in-group differences,

which is also noted and addressed by Mueller (2006). This suggests that differences in legal origin may explain differences in performance to some extent, but not fully.

The status of minority shareholders (and as a result the principal agent problems between owners and management) is according to LLSV related to the legislations in a country.<sup>1</sup> LLSV measures the strength of minority shareholder protection by a constructed index of anti-director rights. The anti-director index is based on six types of rights adding up to an overall score for the level of minority shareholder protection. The anti-director rights consists of rights representing for example shareholder meetings and extra protection of minority shareholders. Each of the rights constituting the anti-director rights is given a binary indication by LLSV depending on the legislation in each country. This legislation may differ between countries. They find stronger legal protection of minority shareholders in countries with common law compared to countries with civil law

In Table 1 the scores on anti-director rights are shown for what can be considered the most genuine representatives of the different legal systems i.e. Great Britain, Germany, France and Sweden. Highest level minority protection is offered by Great Britain and least by Germany with France and Sweden in between. La Porta et al. (1999) study the ownership structures in 29 countries with different legal origin and finds that dispersed ownership is indeed more common in the US and Great Britain, while concentrated ownership and also family ownership is more common in countries such as Germany, France and Sweden. Of the 29 countries in the study by La Porta et al. (1999) the corresponding 16 countries studied in this paper and their anti-director rights index are presented in Table 1.

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<sup>1</sup> According to LLSV strong protection of minority shareholders can explain why dispersed ownership is more prevalent in such countries than in countries with lower levels of property right protections.

Table 1 Shareholder rights in selected European countries according to La Porta et al. (1998)

Country	One Share – One Vote	Proxy by Mail Allowed	Shares Blocked Meeting	Not before	Cumulative Proportional Representation	voting / Oppressed Minority	Preemptive Right to New Issues	Anti- director Rights	Legal Origin
Ireland	0	0	1		0	1	1	4	English Origin
United Kingdom	0	1	1		0	1	1	5	English Origin
Belgium	0	0	0		0	0	0	0	French Origin
France	0	1	0		0	0	1	3	French Origin
Greece	1	0	0		0	0	1	2	French Origin
Italy	0	0	1		0	0	0	2	French Origin
Netherlands	0	0	0		0	0	1	1	French Origin
Portugal	0	0	1		0	0	1	3	French Origin
Spain	0	0	0		1	1	1	4	French Origin
Austria	0	0	0		0	0	1	2	German Origin
Germany	0	0	0		0	0	0	1	German Origin
Switzerland	0	0	0		0	0	1	2	German Origin
Denmark	0	0	1		0	0	0	2	Scandinavian Origin
Finland	0	0	1		0	0	1	3	Scandinavian Origin
Norway	0	1	1		0	0	1	4	Scandinavian Origin
Sweden	0	0	1		0	0	1	3	Scandinavian Origin

Source: re production from La Porta et al. (1998 and 1999)

The approach used by LLSV in establishing the strength of minority protection in countries with common law legal traditions has, however, been criticized. The criticism is levied towards the fact that La Porta et al. (1998 and 1999) use a cross-sectional approach rather than time series or panel approach. Consequently, they do not take into consideration that minority protection in a country may change over time. A study by Fagernäs et al. (2008) studies how shareholder protection changes over time. Instead of only six types of anti-director rights as used by LLSV, they use some 60 indicators of minority protection in each country. The time period they consider is 36 years (from 1970 to 2005). Furthermore, they concentrate on four countries (Great Britain, Germany, France and USA). Of special interest is that they find that minority protection has changed substantially over time. For the time period studied (2000-2008) Germany has the strongest protection of minority shareholder rights with France at the second place and Great Britain at the third place.

In a more recent paper La Porta et al. (2008) defend their methodology and maintain their proposition that legal origin and hence the level of minority shareholder protection is important for explaining the economic development in countries in terms of the performance of its firms. Furthermore, they take a strong standing against the suggestion that legal origin would be merely a proxy for cultural differences in countries. The effects from legal origin on investment performance by firms is still a complex question, but the general consensus points toward the propositions made by LLSV, i.e. that common law countries show higher levels of property right protection compared to civil law countries and hence the management has less possibilities to expropriate minority shareholders in common law countries. In line with LLSV our first hypothesis is:

*Hypothesis 1: Due to higher minority shareholder protection, common law countries have a better investment performance than civil law countries.*



## **Firm size and expropriation of minority**

Listed firms vary in size from just a few employees to the size of almost the size of a city in terms of thousands of people employed. A question to be posed is if there is an upper limit to size of firms in the sense that efficiency is compromised beyond a certain size level. Limit to size is an important issue in economics. With no limit all economics activity could without efficiency loss be concentrated to one firm. Supply curves would not be upwards sloping.

Kaldor (1934) is one of the first to address this problem. He questions the Marshallian concept of the representative firm in a perfect competitive industry. Price in a perfect competitive industry, as we all know, is determined by the point where supply and demand curves cross. The firms are numerous and they all adjust to the price and produce where marginal cost is equal to price. Kaldor looks at long-term equilibrium and wonders what limits the size of each firm. Without limits to firm size there will not be a large number of firms in an industry. In a competitive industry there must for each firm in its production be a factor that is fixed and the same factor must not be fixed for the industry. Such a fixed factor is according to Kaldor entrepreneurship (or management). The firm is looked upon as a productive combination of factors under a single unit of control and the entrepreneur is the one who controls. The type of control foremost referred to is co-ordination. By co-ordination Kaldor means “that part of the managerial function which determines what sort of contracts should be entered into; which carries out the adjustments to the given constellation of ‘data’ “. Furthermore Kaldor writes “it is the essence of co-ordination that every single decision should be on a comparison with all other decisions already made or likely to be made; it must therefore pass through a single brain.” In other words entrepreneurship in terms of co-ordination is a fixed factor and a fixed factor is needed in order to explain why the long-run cost curve of a firm would be upward sloping.

The management task of directing resources is by Coase (1937) stressed as the distinguishing mark of the firm. Similar to Kaldor he talks about the entrepreneur-co-

ordinator who directs production. The alternative to the firm is according to Coase the market where the allocation of resources amongst users and uses is determined by a price mechanism. In a firm the price mechanism is superseded by an order mechanism (due to authority of the entrepreneur). A quote from Coase illustrates this:

“in economic theory we find that the allocation of factors of production between different uses is determined by the price mechanism. The price of factor A becomes higher in X than Y. As a result, A moves from Y to X.. Yet in the real world, we find that there are many areas where this does not apply. If a workman moves from department Y to department X, he does not go because of a change in relative prices, but because he is ordered to do so,”

The firm is predicted to replace the market when it is less costly to use the order mechanism than the price mechanism. Coase describes different type of costs of using the price mechanism as search costs, information costs, negotiation costs, policing costs and enforcement costs. On the other hand there are a number of different kinds of control costs of using the order mechanism and in line with Kaldor Coase expects these cost to increase with increasing firm size.

Related to the work of Coase, Williamson (1963) addresses the problem of firm size and possible control loss. Williamson mentions the possibility to expand the size of the staff by managers to increase their own nonpecuniary compensation in the sense of being similar to a promotion for the manager. Having a relatively larger staff would both be an indirect way of increasing the salary for the manager as well as increasing the security, power, status, prestige and possibly also a professional achievement. In subsequent papers

Williamson (1985, Ch 6) revisits the issue of the limits of firms from a different angle when he poses the question “why can’t a large firm do everything that a collection of small firms can do and more”. Instead of imposing a costly bureaucracy with centralization of decision making and the control losses that grows with size and complexity it should be possible to organize the firm into divisions with semiautonomous status with a profit type goal that preserves the high powered incentives that characterize

autonomous firms. Intervention from top management only has to take place when divisions do not live up to expectations. In other words a management by exception type of leadership is imposed. With this type of management the best of two worlds would be accomplished. The cost efficiency associated with independent ownership could be and the alleviation of cost transaction problems caused by bilateral dependency could be at the same time be avoided. However, opportunism has a tendency to flourish also inside organization; not only between organization in the marketplace. Problems will occur as it will be costly to enforce “promises by division managers to utilize assets with “due care”; promises by owners to reset transfer prices and exercise accounting discretion “responsibly”; promises to reward innovation “in full measure”; promises to preserve promotion prospects “without change”; and agreements by managers to “eschew politics”. “ (Williamson, 1985 p.161.)

The upshot of the discussion above is that there are unavoidable increasing internal transaction costs associated with increasing firm size. These costs are worth incurring only if increasing firm size means that even higher interorganizational (external) transactions costs can be avoided. Private financing of large firms is facilitated if a large number of sources can be tapped. Hence there is a tendency that the number of shareholders increases with the size of corporate firms. With a diffuse ownership structure there is an additional efficiency problem that has to be faced, viz: *How is the separation of ownership and control problem to be dealt with?* Jensen & Meckling (1976) state this problem as question of asserting that the top management uses the firm’s resources to maximize firm value. To maximize firm value is equivalent to only make investments with a positive net present value. Here, the minority shareholder protection offered by the legal framework of a country has a special important role for corporate governance in large firms. Against this background our second hypothesis is:

*Hypothesis 2. Firm size in terms of number of employees has a negative effect on investment performance when protection of minority shareholders is weak*

## **Measure of performance**

Both hypothesis 1 and 2 will be tested using the marginal q measure of investment performance. The marginal q method used in this study, was first suggested by Mueller and Reardon (1993) and has been used substantially over the last decade, not only by Mueller (see for example overview in Wiberg (2008) and Eklund (2008)). Marginal q has also been used by Gugler, Mueller and Yurtuglo (2003 and 2004) and Mueller (2006) in studies of legal origin and effects on investment performance of firms around the world.

The results from estimating a marginal q for a firm has the attractive property of being both fairly intuitive and easy to analyse. In contrast to Tobin's q, it considers the marginal market valuation of a firm's marginal investment rather than the ratio between market value and book value for the firm. The marginal q shows the ratio between a change in investments and the corresponding change in the firm's market value.

As mentioned, marginal q is directly linked to the Net Present Value (NPV) rule in corporate finance, which generally assumes that a project with a positive net present value should always be carried through. A management that only has the collective interest of the shareholder's objective to maximise the value of the firm will undertake all investment that promise a positive net present value and the last investment decided cannot have a lower net present value than zero (i.e.  $NPV \geq 0$ ). On the other hand, a management that caters to other objectives than those of the shareholders as a group will be prepared to choose projects with a negative NPV. The intuitive interpretation of the marginal q method is that a negative NPV will result in an estimated value of marginal q less than 1 for the firm. In other terms, the marginal investment made by the firm results in a smaller increase the market value than the amount invested. That marginal q reflects the market valuation of the marginal investment builds on an assumption of efficient capital markets

Marginal q consider investments in both tangible and intangible assets. Following Mueller and Reardon (1993) investment (I) in each time period is compounded by:

$$I = \text{After tax profits} + \text{Depreciation} - \text{Dividends} + \Delta \text{Debt} + \Delta \text{Equity} + R\&D + ADV \quad (1)$$

where  $\Delta D$  and  $\Delta E$  are funds raised using new debt and equity issues and  $ADV$  is advertising expenditures.

Using the aggregated investment variable, the model used for estimating the marginal q is denoted  $q_m$  in the following equation:

$$\frac{M_{it} - M_{i,t-1}}{M_{i,t-1}} = -\delta + q_m \frac{I_{it}}{M_{i,t-1}} + \frac{\varepsilon_t}{M_{i,t-1}} \quad (2)$$

where,  $M_{it}$  is the market value of a firm  $i$  in period  $t$  and  $\varepsilon_{it}$  is the error term with the assumed usual econometric characteristics. Using the general equation for estimating a marginal q, we can add variables to the model controlling for other factors affecting the change in market value over time. In our case, it allows us to control for how differences in firm size affects performance.

## Data sources

The financial data used for estimating the marginal q is provided by Standard and Poor's COMPUSTAT Global database for the years 1999 to 2008. Due to differences in financial structure, financial firms such as banks, insurance and investment companies are not included in the dataset of firms. This is in accordance with earlier research (see for example Gugler et. al. (2002), Mueller (2006) Bjuggren and Wiberg (2008)). Furthermore, since Standard and Poor does not provide advertising expenditures explicitly in COMPUSTAT Global, we are, in accordance with earlier studies using a

wider definition than Mueller and Reardon (1993). The more general definition includes “general selling expenses” which is used as a proxy for the advertising expenditures.

Firms with less than four consecutive years of market value information are removed from the dataset to maintain consistency. Furthermore, due to the formulation of the marginal q measurement of investment performance, the first year (1999) observations are lost when calculating the change in market value and investments over market value. The resulting dataset contains information on some 32 107 firm year observation in total for the 16 countries included in the study.

### Variables and descriptive statistics

The variable name and description used in the estimation of the marginal q for each of the countries and also the overall legal origin is presented in table 2.

Table 2 Variable name and description

Variable Name	Description
$I_t$	Investment in period t. Defined as:  $I = \text{After tax profit} + \text{Depreciation} - \text{Dividends} + \Delta\text{Debt} + \Delta\text{Equity} + \text{R\&D} + \text{Advertising}$
$(M_t - M_{t-1}) / M_{t-1}$	Change in market value
$I_t / M_{t-1}$	Investment ratio
Employees	Number of employees reported by the firm

The descriptive statistics in Table 3 reveals some interesting characteristics in the data. While the change in market value and investment over market value variable show reasonable characteristics, the employees variable show some irregularities. Overall, the employees data provided by Standard & Poor’s Compustat Global seems to contain some

errors which reduce the number of observations included in the dataset. Firms year observations reporting no value or zero employees are removed from the dataset.

Table 3 Descriptive Statistics

Variable	Observations	Mean	Std. Dev.
$(M_{t1} - M_{t-1}) / M_{t-1}$	19883	0.099	0.485
$I_t / M_{t-1}$	19883	0.227	0.321
Market value	19326	4 174 969	1.90e+07
Return on Assets	19871	-473.759	37 975.31
Employees	19883	10 893.65	35 538.07
Employees * $I_t / M_{t-1}$	19883	2 797.30	15 613.75

## Regression model and results

When estimating the investment performance of the firms in each country and for each legal origin we use the marginal  $q$  as presented earlier and adds an integrated variable for employees as the size measurement of the firm as in equation 3a. The general investment performance is estimated with  $q_{m1}$ , while the effect on investment performance from firm size in terms of employees is represented by  $q_{m2}$ . I.e. if the number of employees is increased by one, the effect on investment performance is reflected in  $q_{m2}$ . The overall effect on investment performance is obtained by summarizing  $q_{m1}$  and  $q_{m2}$  into a  $q_m$  as in equation 2.

$$\frac{M_{it} - M_{i,t-1}}{M_{i,t-1}} = -\delta + q_{m1} \frac{I_{it}}{M_{i,t-1}} + q_{m2} \left( Employees \cdot \frac{I_{it}}{M_{i,t-1}} \right) \quad (3)$$

The marginal  $q$  and the firm size variables are presented for each country in table 4 as well as the overall results for each type of legal origin represented by the countries in the study (common law – English legal origin, civil law – French, German and Scandinavian legal origin). The estimates include dummies representing different industrial branches to control for industry effects affecting firm size in terms of employees (some industries tend to be more labor intensive than others), and year dummies to control for fluctuations in economic growth over time. All regressions are constrained to force the dummies to summarize to zero and all estimations include standard errors which have been controlled for robustness using clusters of industry groups to decrease possible bias in the estimates.

Overall, the estimates of the marginal  $q$  is significant on a 1 percent level for all 21 estimates presented in Table 4. This is reassuring as a measure for the consistency of marginal  $q$  estimates for firms around the world. What is more noticeable is the relatively low estimates for Great Britain. Compared to earlier studies (compare Mueller (2006)), this value is fairly low and not in line with previous suggestions about the effects on firm investment performance in common law countries (La Porta et al (1999)). However, the estimate for Ireland is substantially higher and in line with previous estimates. The



relatively long time period included in the dataset, 1999-2008, should make up for possible temporary recessions, however, marginal q can also display the recent strong national growth in Ireland while also showing signs of the economic recession in the 2008 in Great Britain. Other explanations may be that suggested by Fagernas et al. (2008) which actually puts the anti-director rights in Great Britain behind civil law countries like Germany and France. This means that our hypothesis is not supported by the results and that the common law countries does not have an overall better investment performance than the civil law countries. It should however be noted that we only include two common law countries in our study and that this may be extended to including more common law countries around the world for further support of the findings.

Firm size seems to have no affect at all on performance in the common law countries. This would suggest that managers of large firms in Great Britain and Ireland do not allocate resources less efficiently than smaller firms. However a different pattern is found in the civil law countries. At least on a general level for all three types of civil law; Scandinavian, German and French legal origin countries display lower investment performance as the size of the firm increase in terms of employees. The negative relationship between size and performance is less clear on the country level. But the overall impression for the civil law countries is that most of them have worse investment performance when the number of employees increase.

Table 4 Marginal q estimates including control variables for firm size

Legal origin	Country	Constant	$q_{m1}$	Eq. 3a: $q_{m2}$ (Employees * $I_t / M_{t-1}$ )	F-value	No. of observations
English Origin	Great Britain	-0.087 *** (-7.05)	0.543 *** (17.13)	4.43E-07 (0.58)	15.38	5048
	Ireland	-0.149 *** (-4.60)	1.032 *** (8.01)	7.79E-06 (1.56)	311.66	266
<i>English origin average</i>		<i>-0.089 *** (-7.31)</i>	<i>0.557 *** (17.79)</i>	<i>3.73E-07 (0.49)</i>	<i>16.50</i>	<i>5314</i>
French Origin	Belgium	-0.115 *** (-4.65)	0.894 *** (6.61)	-2.62E-06 (-1.15)		
	France	-0.032 ** (-2.13)	0.728 *** (12.13)	-1.75E-06 * (-1.95)	236.07	2375
	Greece	-0.245 *** (-8.33)	1.236 *** (9.88)	-1.57E-5 (-1.42)	418.56	532
	Italy	-0.0658 *** (3.30)	0.834 *** (8.33)	-3.03E-07 (-0.35)	55.42	1009
	Netherlands	-0.078 *** (-3.45)	0.827 *** (9.45)	-6.36E-07 ** (-2.16)	98.31	890
	Portugal	-0.086 *** (-4.01)	1.059 *** (11.27)	-1.05E-05 * (-1.96)	59094.57	176
	Spain	-0.253 (-1.01)	0.826 *** (9.63)	1.30E-06 (0.68)	315.29	560
<i>French origin average</i>		<i>-0.060 *** (-6.39)</i>	<i>0.771 *** (20.24)</i>	<i>-1.23E-06 *** (-2.74)</i>	<i>34.31</i>	<i>6099</i>
German Origin	Austria	-0.026 (-0.94)	0.733 *** (4.88)	5.74E-07 (0.15)	2357.42	431
	Germany	-0.076 *** (-6.78)	0.646 *** (13.44)	-7.25E-07 ** (-2.05)	585.13	3078
	Switzerland	-0.046 *** (-2.46)	0.655 *** (6.45)	-6.04E-07 (-0.36)	1298.56	11283
<i>German origin average</i>		<i>-0.071 *** (-7.57)</i>	<i>0.656 *** (15.65)</i>	<i>-7.06E-07 ** (-2.14)</i>	<i>5093.86</i>	<i>4792</i>
Scandinavian Origin	Denmark	-0.069 *** (-2.68)	0.667 *** (8.60)	-5.36E-06 (-1.35)	865.50	910
	Finland	-0.075 (-5.16)	1.113 *** (10.71)	-1.05E-05 (-1.78)	723.55	773
	Norway	0.011 (0.75)	0.827 *** (8.89)	8.79E-06 (0.43)	879.67	699
	Sweden	-0.099 (-4.14)	0.745 *** (9.42)	-1.98E-06 (-1.22)	797.60	1296
<i>Scandinavian origin average</i>		<i>-0.034 ** (-2.29)</i>	<i>0.730 *** (16.62)</i>	<i>-4.18E-06 *** (-2.58)</i>	<i>136.07</i>	<i>3678</i>
<b>All country average</b>		<b>-0.056 *** (-7.20)</b>	<b>0.628 *** (34.36)</b>	<b>-5.58E-07 ** (-2.08)</b>	<b>61.04</b>	<b>19883</b>

t-values in parenthesis, \*\*\* indicates statistical significance on a 1 percent level, \*\* on a 5 percent level and \* on a 10 percent level

To sum up, the overall impression from the estimates are that common law countries has no problem with less efficient resource allocation in large firms. However, in the case with Great Britain, investment performance is overall worse than expected and previously estimated. In the case of the civil law countries, there seems to be a problem with a negative relation between firm size and investment performance. A caveat is that it is

quite possible that there are other factors not included in the model which also affect the relationship between investment performance and firm size like eg state ownership. The results could also reflect that the stock market function less efficiently in some countries rather than merely the level of property rights.

## **Conclusion**

We study the effects on investment performance from legal origin and firm size in 16 European countries. In line with earlier research we expected to find worse investment performance in countries with civil law systems (German, French and Scandinavian legal origin) than in common law countries (here Great Britain and Ireland). We also expect to find a more negative effect on investment performance from firm size in terms of number of employees in countries with civil law compared to common law countries due to the lower level of minority shareholder protection.

Surprisingly we find that the firms in the common law countries in our dataset has an overall lower level of investment performance compared to the civil law countries. This could be an indication of an evolutionary process where civil law countries have improved their corporate governance system relative common law countries during the last decades. However, on a country specific level, these results are more ambiguous. Contrary to this finding, but in line with our expectations, we find evidence of a negative relation between firm size and efficient resource allocation in civil law countries but not in common law countries.

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