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**Working Paper**

## Ownership concentration, institutional development and firm performance in Central and Eastern Europe

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## **Non-technical Summary**

Firm behavior is largely affected by the major institutions of an economy, like the legal system, civil liberties or political rights. If institutions are not well developed, ownership concentration as a feature of corporate governance may substitute for institutional shortfalls. Thus, especially in weak institutional environments ownership concentration may influence firm performance to an economically meaningful extent.

The present paper tests this perception empirically by investigating the relationship between ownership structure and firm growth in 28 central and eastern European countries, where the state of institutional development varies considerably. The analysis is based on three waves of the European Bank for Reconstruction and Development (EBRD) and the World Bank's Business Environment and Enterprise Performance Survey (BEEPS) from 2002 to 2009.

For those firms that operate in non-EU-member countries as well as those firms that are situated in less developed legal systems according to Freedom House ratings, regression results show an inverted u-shaped relation of ownership concentration and firm performance. We interpret these findings as evidence for a classic agency problem emanated from weaker monitoring by the shareholders if ownership concentration is low. With rising ownership concentration this effect is dominated by a 'private benefits of control' problem. Larger shareholders apparently let value enhancing growth opportunities forgo to avoid contests of control and save private benefits of being the sole controlling firm owner. An alternative explanation for this finding is that raising new equity for growth enhancing investments is especially challenging in less developed countries due to weak investor protection rights. But whoever is actually afraid of investing, the incumbent firm owner or potential new investors, staying with either highly or lowly concentrated ownership seems not to be growth maximizing for firms in institutionally less developed economies.

## **Das Wichtigste in Kürze (Summary in German)**

Unternehmerisches Verhalten wird maßgeblich von wichtigen institutionellen Rahmenbedingungen wie dem Rechtssystem oder der Intensität staatlicher Eingriffe in zivile Belange beeinflusst. Sind die institutionellen Rahmenbedingungen weniger weit entwickelt, kann die Eigentümerstruktur eines Unternehmens als Substitut für institutionelle Schwächen dienen. Besonders in schwächer ausgeprägten institutionellen Umgebungen könnte die Eigentümerstruktur daher einen wichtigen Einfluss auf das Unternehmenswachstum haben.

Die vorliegende Studie untersucht diese Vermutung empirisch. Die Datenbasis bilden drei Wellen der „Business Environment and Enterprise Performance“ Umfrage (BEEPS), welche von der Europäischen Bank für Wiederaufbau und Entwicklung sowie der Weltbank im Zeitraum zwischen 2002 und 2009 erhoben wurden und Unternehmensdaten aus 28 zentral- und osteuropäischen Staaten enthalten.

Für Unternehmen, die ihren Firmensitz nicht in der EU oder institutionell weniger entwickelten Ländern haben, weisen Regressionsanalysen einen umgekehrt u-förmigen Zusammenhang zwischen der Eigentümerkonzentration und Unternehmenswachstum aus. Dieses Ergebnis kann als Hinweis auf ein klassisches Prinzipal-Agenten-Problem aufgrund schwächerer Unternehmenskontrolle interpretiert werden, wenn die Eigentümerkonzentration gering ist. Mit steigender Unternehmenskonzentration wird dieses Phänomen durch negative Auswirkungen allein kontrollierender Eigentümer abgelöst. Großeigentümer scheinen Wachstumsmöglichkeiten auszulassen, um private Vorteile der Eigentümerschaft zu bewahren. Alternativ könnten gerade in weniger entwickelten Staaten auch Schwierigkeiten bestehen, externe Investoren für Wachstum fördernde Investitionen zu gewinnen. Unabhängig davon, ob der bestehende Eigentümer oder neue externe Investoren Wachstum fördernde Investitionen verhindern, scheint jedenfalls weder eine sehr hohe noch sehr geringe Eigentümerkonzentration das Unternehmenswachstum in institutionell schwächer entwickelten Staaten zu maximieren.

# Ownership concentration, institutional development and firm performance in Central and Eastern Europe\*

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## Abstract

This paper analyzes the relationship of ownership concentration and firm performance in the context of different institutional environments in 28 Central and Eastern European transition economies. Using the BEEPS data for the period from 2002 to 2009 we find an inverted u-shaped relation of ownership concentration and firm performance for those firms that operate in non-EU-member countries as well as those firms that are situated in less developed legal systems according to Freedom House ratings. We interpret these findings as evidence for a classic agency problem in the lower part of the ownership concentration distribution that is dominated by a ‘private benefits of control’ problem with rising ownership concentration.

**JEL-Classification:** G32, L25, O16, P31

**Keywords:** Corporate governance, firm growth, transition economies, ownership concentration

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## **1. Introduction**

Understanding how the major institutions of an economy, like the legal system, civil liberties or political rights affect firm behavior and therefore economic development is crucial for policy makers as well as business professionals. Nowadays it is widely believed that the private sector is the main engine for economic growth. Therefore, one of the major tasks of governments is forming an institutional environment that helps firms exploiting their growth potentials. Two key factors of firm growth are access to a functioning capital market and a well developed and stable system of civil and political rights (e.g. La Porta et al., 1997, 1999, Papaioannou 2009). If these institutions are not that well developed, ownership concentration as a feature of corporate governance may substitute for institutional shortfalls (Shleifer and Vishny, 1997). Thus, especially in weak institutional environments ownership concentration could influence firm growth to an economically meaningful extent (Boubakri et al., 2005).

We take this perception as motivation to investigate the relationship between ownership structure and firm performance in the context of different institutional environments in transition economies. Using three waves of the European Bank for Reconstruction and Development (EBRD) and the World Bank's Business Environment and Enterprise Performance Survey (BEEPS) from 2002 to 2009, we take advantage of the fact that some former transition economies have entered the European Union in the last decade. The BEEPS covers 28 transition economies in central and eastern Europe with nine of them being members of the European Union (EU) since 2004 or 2007, respectively. EU accession was accompanied with considerable institutional improvements for the affected countries. Hence, we observe markedly different levels of institutional development within the covered world region. This allows comparing the effect of ownership structure as a corporate governance mechanism within different institutional environments and legal systems. One of the basic

questions, we investigate is whether ownership as an internal corporate governance mechanism plays an important role in transition economies and whether ownership may serve as a substitute for weak legal environments. Gaining deeper knowledge of the interaction between corporate governance mechanisms and institutional surroundings is especially important for transition economies, because the legislation is typically used as one of the main and most powerful tools in shaping institutions for economic growth.

Former studies beginning with La Porta et al. (1997) and a growing literature afterwards (see La Porta et al., 2008, for an overview) have already shown that law matters for corporate governance effectiveness and economic development (Chinn and Ito 2006). Closely related to our study, Boubakri et al. (2005) provide evidence that the role of ownership concentration as a corporate governance mechanism varies with different levels of institutional development in emerging market economies. By using a large sample of cross-country firm-level data of almost all transition economies, we expand the understanding of corporate governance mechanisms within different institutional environments as well as our knowledge of the relationship between legal institutions and economic development.

Shleifer and Vishny (1997) argue that ownership concentration can serve as a substitute for weak investor protection rights. Therefore ownership concentration should be positively related to corporate performance especially in environments of weak legal systems. We examine this relationship empirically. While we find no significant linear relation between ownership concentration and firm performance, we find however an inverted u-shaped relationship between ownership concentration and firm performance for non-EU-member states - with a peak slightly above 50 % of the firm owned by the largest owner. This result also appears when we use an indicator for weak legal systems based on 'Freedom House' surveys instead of an EU-membership indicator. The results therefore suggest that the legal



environment matters for the effectiveness of ownership concentration as an internal corporate governance mechanism in transition economies.

The inverted u-shaped relationship between ownership concentration and firm performance points to two main institutional deficiencies of the less developed transition economies. First, in case of a lack of a large controlling shareholder, companies in less developed legal systems seem to face the classical agency problem described first by Berle and Means (1932), whereby the managers of a firm realize private benefits on expense of the shareholders. Second, since firms having a highly concentrated ownership also perform below average, it seems that companies cannot exploit their whole growth potential due to scarce outside investors and/or high private benefits of control in weak institutional surroundings.

The remainder of the paper is organized as follows. Section 2 describes the ownership performance relationship in the context of weak institutional environments. Section 3 describes the data, provides summary statistics and outlines methodical issues. In section 4 we present and discuss our empirical findings and section 5 concludes.

## **2. Ownership concentration, firm performance and institutional environment**

Low ownership concentration is classically associated with a principal-agent problem described by Berle and Means (1932), Baumol (1962), Marris (1963, 1964), and Williamson (1964). As managers do not bear the full costs of their decisions, it is assumed that managers try to carry out projects that maximize their private benefits which are not necessarily in the interest of the shareholders, i.e. profit-maximization. The managers are able to behave in this way because the principal(s) usually have only limited information on the manager's effort and strategic decisions which makes monitoring difficult. Managers can use these

information asymmetries to deviate from the profit maximizing strategy that an owner-led firm would pursue. The shareholders try to minimize the resulting so called agency-costs by involving sophisticated contractual incentive mechanisms (Jensen and Meckling, 1976). However, Bebchuk and Fried (2003, 2004) point out that managers frequently have power to influence the conditions of their contracts in their own interests which further increases the misalignment of manager and owner objectives and limits the usability of contracts to solve the agency problem. This practice gets even worse with falling ownership concentration due to the well-known free rider problem. The smaller the largest shareholder the lower are the incentives to invest into controlling the management because profits from improved monitoring go to all shareholders while the monitoring costs cannot be allocated among the other shareholders. Moreover, small shareholders often lack the necessary knowledge and industrial expertise to control the management effectively. In the end managers usually have a large area of discretion if the ownership structure is dispersed (Hart 2001).

This is one main reason why the optimal ownership structure of a firm is maybe not the one without an actively controlling shareholder, especially in regions of weak legal systems where contract enforcement is limited. To have at least one shareholder with a sufficient high capital stake that makes active management supervision attractive may pay off for all owners therefore.

Obviously, the principal-agent problem disappears if we consider a firm with 100% of equity in one hand. Nevertheless, it is not clear from a theoretical perspective where the optimal ownership concentration is located. Following the argumentation that higher capital stakes lead to improved monitoring and less agency-costs one could expect to find a positive linear relationship between ownership concentration and firm performance. However, a highly concentrated ownership structure might be also suboptimal if thereby potential investment opportunities are lost.

The question which ownership structure, specifically which allocation of voting and cash flow rights is optimal for a firm was already addressed by Grossman and Hart (1988) and Harris and Raviv (1988). Until now that question is still open. From the existing literature, e.g. La Porta et. al. (2000), we know at least that the equilibrium ownership structure of a firm depends on the legal environment. Especially in weak legal environments it might be hard to find outside investors because expropriation risks for minority stakeholders are severe and private benefits of control are high (see Zingales, 1995, La Porta et al. 1999, and Bebchuk, 1999). If private benefits of control are high and investor protection is weak, Bebchuk's (1999) model implies that private firm owners prefer to have high shares to limit the incentives of rivals to contest control. Insiders can get easier entrenched with raising stakes in their firm (see Morck et al., 1988). This entrenchment effect should also be more pronounced in weaker legal systems because contests for leadership through takeovers or proxy votes are harder to carry out. Furthermore, in weak legal systems the owner's reputation might be needed to raise external funds without giving up control rights (La Porta et al. 2000). In small countries with highly concentrated firm ownership among a few families or individuals finally, owners can receive substantial political power within their countries or provinces their firms are located (La Porta et al., 1999). From an owner's perspective not selling capital stakes or raising new equity can then be optimal, even if firm value enhancing investment opportunities forego thereby. Given these arguments, we would expect to find a negative correlation between ownership concentration and firm performance.

Hence we are left with two opposing theories. On the one hand, we could argue for a positive effect of ownership concentration on firm performance due to minimized agency costs. On the other hand, especially at the right tail of the ownership concentration distribution, missed investment opportunities and high private benefits of control might lead to a negative relationship between ownership concentration and firm performance.

The existing empirical literature on the relationship between ownership structure and firm performance has frequently found non-linear relationships. Starting with Morck et al. (1988) some papers found an ‘up/down/up’ relationship (see Cho, 1998, Short et al., 1999, Cosh et al., 2001, Gugler et al., 2004). According to these papers raising ownership concentration lowers agency costs when ownership concentration is very low, but at a certain point the positive effect of lower agency costs is dominated by negative effects due to rent seeking of large investors at the expense of small ones. If ownership concentration is very high however, exploiting small investors becomes less severe and shareholder and manager interests become more aligned which results in a small upward slope of the ownership concentration performance relation at the right tail of the ownership concentration distribution. However, other studies found an inverted u-shaped relationship between ownership concentration and firm performance (see, for the US, McConnell and Servaes, 1990, Han and Suk, 1998, and, for Europe, Thomsen and Pedersen, 2000) which suggests that the positive effect of a better alignment of shareholder and manager interests in the case of very high ownership concentration might be small compared to potential negative effects due to private benefits of controlling shareholders. Gugler et al. (2008) estimated the agency costs and private benefits effects separately with detailed firm level data for different developed countries around the world. Contingent on the legal systems they found differently pronounced inverted u-shaped relationships in Anglo-Saxon countries, English-origin and civil law countries.

A limitation of the existing literature is that it often relies on data from highly developed economies with strong emphasis on an US or Anglo-Saxon institutional environment. Studies utilizing data from emerging markets or transition economies are much more scarce and typically focus on one or a few similar countries (see e.g. Bhaumik and Estrin, 2007, for China and Russia, Driffield et al., 2007, for East Asian countries,

Filatotchev et al., 2007, for evidence on Hungarian and Polish firms, or Gregoric and Vespro, 2009, for Slovenia). Moreover the data used in other studies are often not a randomly drawn, and thus representative, sample which makes inference for the whole economy difficult. By using randomly drawn cross-country data at the firm level for 28 different transition economies, we make two important contributions to the literature. First, we provide evidence on the relationship between ownership structure and firm performance for a large, fast growing region of the world where empirical cross-country studies are notoriously scant. Second, we enhance our knowledge of the importance of differences in institutional environments for effective corporate governance mechanisms and economic development within the group of almost all transition economies.

### **3. Data, descriptive statistics and methodological remarks**

For our empirical investigation we use three waves of the Business Environment and Enterprise Performance Survey (BEEPS) covering the period from 2002 to 2009. The first wave in the year 2002 covered approximately 6,500 firms, while the second round includes 9,500 companies in the year 2005. The latest wave was conducted in 2008-2009 and covered 11,800 companies. Table 1 shows all covered countries, the number of companies per country used in this study and the information if the respective country entered the EU in 2004 or 2007, respectively.<sup>1</sup> After removing observations with inconsistent answers in the questionnaire or missing values in the variables of interest, the final sample includes 20,638 observations in total.

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<sup>1</sup> Further detailed information on the construction of the survey can be found on the homepage of the EBRD under “[www.ebrd.com/pages/research/analysis/surveys/beeps.shtml](http://www.ebrd.com/pages/research/analysis/surveys/beeps.shtml)”. Fries et al. (2003) checked the 2002 wave for an individual perception bias in the BEEPS data but found none.

**Table 1: Sample overview**

Country	Firms	EU-accession	Weak law	Country	Firms	EU-accession	Weak law
Albania	379			Latvia	515	2004	
Armenia	752			Lithuania	576	2004	
Azerbaijan	733		2002-2009	Moldova	754		2009
Belarus	697		2002-2008	Montenegro	119		2002
Bosnia	556			Poland	1549	2004	
Bulgaria	707	2007		Romania	1151	2007	
Croatia	405			Russia	1846		2002-2009
Czech Republic	612	2004		Serbia	739		2002
Estonia	566	2004		Slovakia	483	2004	
FYROM	550			Slovenia	583	2004	
Georgia	588			Tajikistan	571		2002-2008
Hungary	1021	2004		Turkey	747		
Kazakhstan	1141		2002-2009	Ukraine	998		
Kyrgyz	550		2002-2005	Uzbekistan	750		2002-2008
Total number of observations: 20638							

Note: The third wave of the BEEPS was conducted between 2008 and 2009. All countries covered in 2008 are not covered in 2009, et vice versa.

An important feature of the BEEPS data for our study is the fact that it provides comparable firm-level information on a large set of firms in almost all transition economies with different levels of institutional development. Despite the long time span covered an appropriate firm-level panel is however not available. Out of 16,166 different firms in the total sample, only 1,928 firms can be observed in two waves and only 205 firms are observed over the full covered period, i.e. the three waves of the survey. Thus, we use pooled cross-sectional data in our econometric specifications to avoid a further loss of numerous observations and to enable an analysis of country differences in institutional environments at the firm level.

## *Variables*

As dependent variable, we use employment growth over the last three years as a proxy for firm performance  $[(employment_{it} - employment_{i,t-3}) / employment_{i,t-3} \times 100]$ , as this is the only performance variable that can be obtained from the BEEPS for a large sample of firms. More direct measures of firm performance like profits or market value of the company were not requested in the survey.

Our main explanatory variable '*blockholder*' is the percentage of a company's shares that is owned by the largest owner. We also use the square of this variable in order to allow for a non-linear relationship as discussed above. In the regression analysis, we will estimate the effect of *blockholder* on growth for (i) the full sample, (ii) the samples of EU member states and non-member states (see sample definition in Table 1), and, as an alternative specification, (iii) for samples that are split by an indicator on the development of the countries' legal systems.

Legal system development is measured by a dichotomous variable indicating whether a country reaches more than 4 points on the Freedom House ratings of political rights and civil liberty. Freedom House assigns numerical ratings of political rights and civil liberty for 193 countries around the world on a scale of 1 to 7 since 1972. A rating of 1 represents the highest degree and 7 the lowest. The political rights score measures the degree to which people are able to participate freely in the political process while the civil liberty rating measures personal autonomy from interference from the state. The underlying research and rating process is based on a sophisticated standardized system that involves a crew of analysts and senior-level academic advisers.<sup>2</sup> We use the Freedom House ratings to gain an alternative measure of institutional development that is directly related to the legal system in each

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<sup>2</sup> For a detailed description of the underlying methodology of the Freedom House rating, see [http://www.freedomhouse.org/template.cfm?page=351&ana\\_page=354&year=2009](http://www.freedomhouse.org/template.cfm?page=351&ana_page=354&year=2009).

country. A country is assessed as institutionally ‘weak’ if the political rights score as well as the civil liberty rating reach 5 points or more each.

In addition, we add several control variables that may affect growth and could thus possibly confound the estimated relationship between *growth* and *blockholder* if the controls were not included in the regression.

As we use growth measured in percent, it is essential to control for initial size in period  $t-3$ , as small firms will naturally grow relatively more than larger firms if the absolute growth in employees is equivalent. Therefore,  $\ln(\text{employment}_{i,t-3})$  enters the regression as right-hand side variable. Similarly one can argue that older firms often have lower growth potentials than younger firms due to a higher fraction of already identified and realized growth opportunities. Thus, the logarithm of a firm’s age is included as a further explanatory variable in the regression framework as well.

Furthermore, we control for possible differences in average growth of state-owned and foreign-owned firms when compared to privately owned, domestic companies. Two dummy variables indicating firms that are state-owned or foreign-owned account for these specific kinds of ownership. We also include a binary variable indicating whether a firm is publicly quoted to control for differences through a superior access to the capital market.

Additionally, we control for human capital intensity by the fraction of employees with a university degree, as a highly skilled workforce could accelerate firm growth through a higher likelihood for, and faster, implementations of process and product innovations. Access to foreign markets is usually a crucial factor for firm growth, too. Hence, the percentage of sales to foreign customers is taken as another right-hand side variable.

As the BEEPS survey is focused on transition economies, it features a special variable concerning black market competition, as especially in less developed economies official registration of firms is not always enforced. Competition from informal or unregistered firms



(and thus not included in the survey) can reduce growth. The survey participants were asked to indicate whether they face such non-official competition, and this enters the regression as dummy variable ‘*competition*’.

Finally, we use full sets of three year, 26 industry, and 27 country dummies to control for unobserved heterogeneity over time, and across different industries and countries. Table 2 summarizes all variables used.

**Table 2: Summary of variables**

<b>Variable</b>	<b>Description</b>	<b>Source</b>
Employment growth	$(\text{Employment}_{it} - \text{Employment}_{i,t-3}) / \text{Employment}_{i,t-3} \times 100$	BEEPS
Blockholder	Percentage of ownership held by shareholder	BEEPS
Employment <sub>i,t-3</sub>	Employment in physical units in t-3	BEEPS
Age	Years since the company was founded	BEEPS
Human capital	Percentage of employees with a university degree	BEEPS
Export	Percentage of international sales	BEEPS
State-owned	Dummy indicating whether the firm is wholly owned by the government	BEEPS
Foreign-owned	Dummy indicating whether the firm is wholly owned by a foreigner or foreign firm	BEEPS
Publicly quoted	Dummy indicating whether the firm is publicly quoted	BEEPS
Competition	Dummy indicating whether the firm faces competition from informal/unregistered firms	BEEPS
Weak legal system	Dummy indicating if the company operates in a country that reaches at least 5 points on the Freedom House ratings of political rights and civil liberty	Freedom House
Political rights	Political freedom rating (1-7) according to Freedom House	Freedom House
Civil liberty	Civil liberty rating (1-7) according to Freedom House	Freedom House

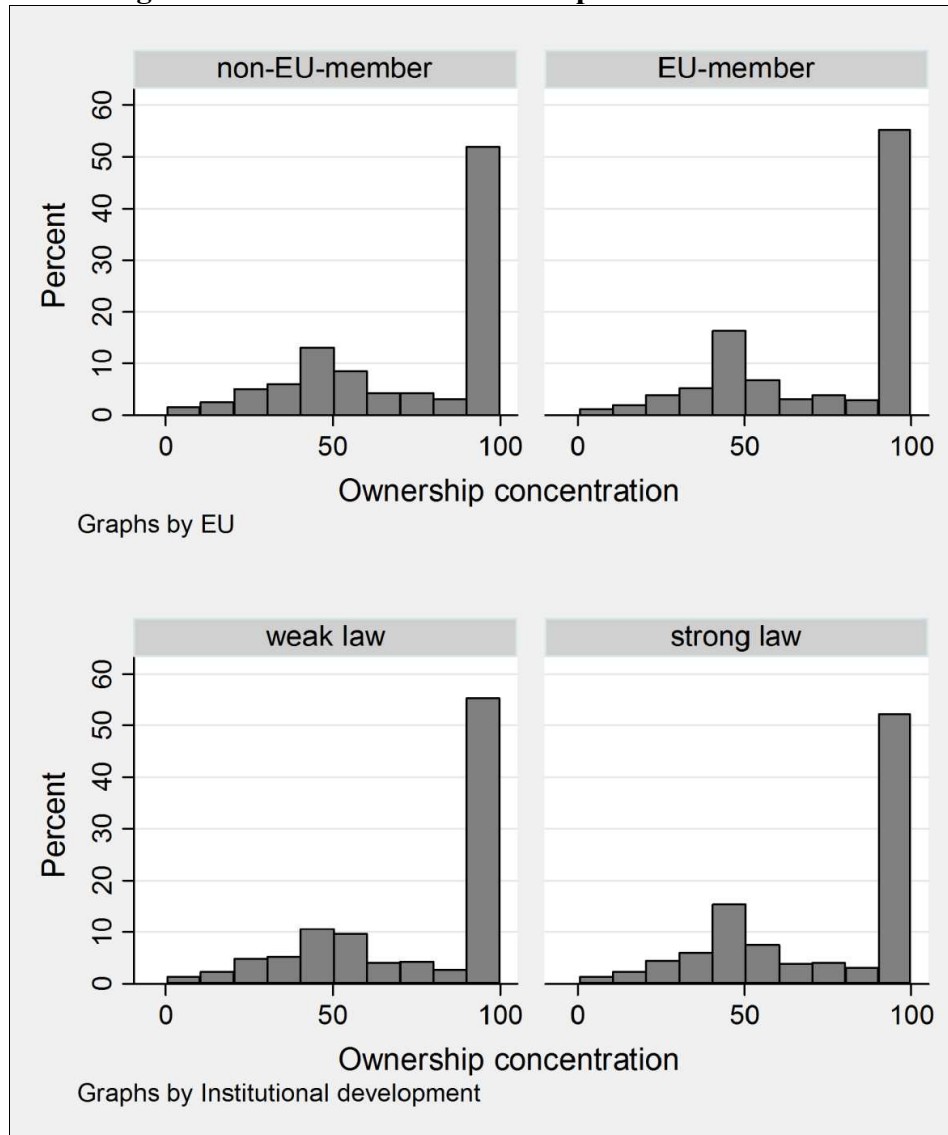
Note: Three time dummies, 26 industry dummies and 27 country dummies not presented.

Table 3 presents descriptive statistics of all variables separated by EU membership status. The average 3-year growth rate is about 26 % for firms in non-EU-member states and 19 % for firms operating within EU-member states. Note, however, that the median growth rate is zero for both groups. Thus, there is quite some turbulence in the sample countries.

From the descriptive statistics we do not observe marked differences in our ownership variable *blockholder* between EU (78%) and non-EU-member states (76%). This is also the case for the separation by legal system development, where the averages amount to 76% for the observations within weak legal systems and 77% for the others (not shown in Table 3). Note that the sample separation by EU-membership versus weak legal systems is not trivial. As Table 3 shows, all EU-member countries have quite well developed legal systems according to Freedom House ratings but not all non-EU-member states perform badly in this sense. Nine of 28 covered countries had a less developed legal system in 2002 which changed to seven less developed countries afterwards (see Table 1).

As we do not observe an average difference in the variable *blockholder* in the split samples, we additionally show histograms to have a closer look at the whole distribution of the variable.

**Figure 1: Distribution of ownership concentration**



As could be expected, the majority of firms is wholly owned by a single shareholder. This is not surprising, as we consider a representative sample of the economies and not only large, publicly traded companies as it is often the case in studies using US or Anglo-Saxon data. In addition, a high concentration of ownership can be expected as we deal with transition economies where capital markets are typically less developed than in fully industrialized countries such as the US, Japan, or countries located in Western Europe. However, we also see that there is a fair amount of data over the whole distribution of the ownership variable. Thus, we have sufficient support for fitting a possible non-linear relationship between growth and ownership over the whole distribution of our main

explanatory variable of interest. We also see that the distributions are similar across the sample split. Note that this does not conform to the hypotheses of Zingales (1995), La Porta et al. (1999), and Bebchuk (1999) who believe that ownership concentration should be higher in environments with weak legal systems. As we outline below, however, we also find some structural differences between the split samples with respect to other covariates. Therefore, our univariate analysis cannot be seen as a *ceteris paribus* comparison. Therefore, we follow up on this issue in the following section where we conduct multivariate, econometric analyses.

As Table 3 indicates there are some structural differences between EU and non-EU countries. Most striking is the share of high skilled labor. It amounts to 32% in non-EU countries, whereas firms in EU countries employ only about 19% of high skilled personnel in the total labor force. Interestingly, non-EU firms are also larger, on average (115 versus 94 employees), and are more likely to be publicly traded (8% versus 4%). In terms of exports, EU firms achieve a slightly higher share of foreign sales (13% versus 10%) and are less likely to be state-owned (4% versus 6%). EU firms also report less informal competition (14% versus 16%). The two samples are similar in terms of age of the companies and the share of foreign ownership. See Table 6 in the appendix for results of t-tests on mean differences of variables across the split samples. It turns out that almost all variables differ significantly between both EU and non-EU members as well as countries with weak and non-weak legal systems. Note that the distribution across industries also differs significantly among the samples.

**Table 3: Descriptive statistics separated by EU membership status**

Variable	non-EU-member				
	Obs	Mean	Std. Dev.	Min	Max
Employment growth	14588	25.71	68.77	-86.00	466.67
Blockholder	14588	75.82	28.67	1	100
Employment <sub>i,t-3</sub>	14588	115.10	390.08	1	15000
Age	14588	16.03	17.83	1	202
Human capital	14588	32.35	29.19	0	100
Export	14588	10.11	24.22	0	100
State-owned	14588	0.06	0.24	0	1
Foreign-owned	14588	0.05	0.21	0	1
Publicly quoted	14588	0.08	0.27	0	1
Competition	14588	0.16	0.37	0	1
Weak legal system	14588	0.45	0.50	0	1
Political rights	14132	4.35	1.86	1	7
Civil liberty	14132	3.94	1.37	2	7

Variable	EU-member				
	Obs	Mean	Std. Dev.	Min	Max
Employment growth	6050	18.58	58.50	-86.08	466.67
Blockholder	6050	77.74	27.77	1	100
Employment <sub>i,t-3</sub>	6050	93.73	395.35	1	15000
Age	6050	16.27	15.80	1	184
Human capital	6050	19.17	24.87	0	100
Export	6050	13.15	27.46	0	100
State-owned	6050	0.04	0.19	0	1
Foreign-owned	6050	0.06	0.24	0	1
Publicly quoted	6050	0.04	0.20	0	1
Competition	6050	0.14	0.34	0	1
Weak legal system	6050	0	0	0	0
Political rights	6050	1.35	0.64	1	3
Civil liberty	6050	1.30	0.46	1	2

Note: Three time dummies, 26 industry dummies and 27 country dummies not presented.

#### 4. Econometric results

Before we analyze the effect of ownership concentration on firm performance, our main research question, we first investigate the hypothesis whether weaker institutional frameworks lead to higher ownership concentration as coined by Zingales (1995), La Porta et al. (1997), and Bebchuk (1999). Therefore, we regress ownership concentration on all covariates mentioned in the previous section except growth and countries dummies. The

latter cannot be included as both our indicators on institutional circumstances only vary across countries but not within a country. We also exclude the variables wholly state-owned and wholly foreign-owned as their definition emerges from the variable *blockholder* that is used as dependent variable here.

**Table 4: OLS regressions for ownership concentration**

Dependent variable: <i>blockholder</i>		
Variables	Model A	Model B
non-EU-member dummy	1.139** (2.38)	
weak legal system dummy		1.527*** (3.48)
log(Employment <sub>i,t-3</sub> )	-2.093*** (-14.68)	-2.143*** (-14.92)
log(Age)	-1.824*** (-5.88)	-1.718*** (-5.49)
Human capital	-0.025*** (-3.31)	-0.026*** (-3.45)
Export	-0.022*** (-2.56)	-0.019** (-2.17)
Publicly-quoted	-8.706*** (-10.30)	-8.734*** (-10.36)
Competition	-0.882 (-1.46)	-0.707 (-1.17)
F-test on joint significance of time dummies	104.11***	102.21***
F-test on joint significance of industry dummies	5.36***	5.44***
$R^2$	0.058	0.058
Number of observations	20638	20638

Notes: All regressions use heteroskedasticity-robust standard errors. *t*-values are given in parentheses. \*, \*\*, \*\*\* denote significance at the 10%, 5% and 1% level respectively.

As one can see in Table 4, we find evidence that ownership concentration is higher when the institutional environment in an economy is weak, all else constant. In non-EU member countries the largest owner holds about 1.2% more than in EU countries. In countries that we classified as having a weak legal system according to the Freedom House ratings, this effect amount to about 1.5%. Thus, we conclude that our data is consistent with the theoretical predictions as discussed above. Although, this effect is statistically significant, it

is somewhat small in terms of economic magnitude. It could be argued that an average difference of 1.5% of ownership concentration between weak and strong legal systems, may not alter the governance structure in an economically significant manner.

Also note that the control variables all show the expected sign. In larger and older firms, ownership is more dispersed. Similarly, this holds for firms employing a higher share of skilled labor. As surely expected, publicly quoted firms also show lower ownership concentration. Finally, the more internationalized a firm, as approximated by the export ratio, the higher is the ownership dispersion.

Now, we turn to our main research question, and investigate the effect of *blockholder* on firm performance, where we allow for a non-linear relationship that was also found in similar studies for other countries.<sup>3</sup>

Table 5 provides first estimation results for the full sample. To investigate differences in the effect of ownership concentration within different institutional environments, Table 5 also contains separate estimations for those companies that operate in EU and non-EU-member countries<sup>4</sup> as well as separate estimations for those companies that operate in more and less developed countries in terms of their legal systems as measured by Freedom House ratings.

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<sup>3</sup> We also tested for an up/down/up slope but did not find significant results.

<sup>4</sup> Alternative models were estimated with countries always handled as EU-member countries even if EU-accession took place later. The results stayed qualitatively the same.

**Table 5: OLS regressions for employment growth**

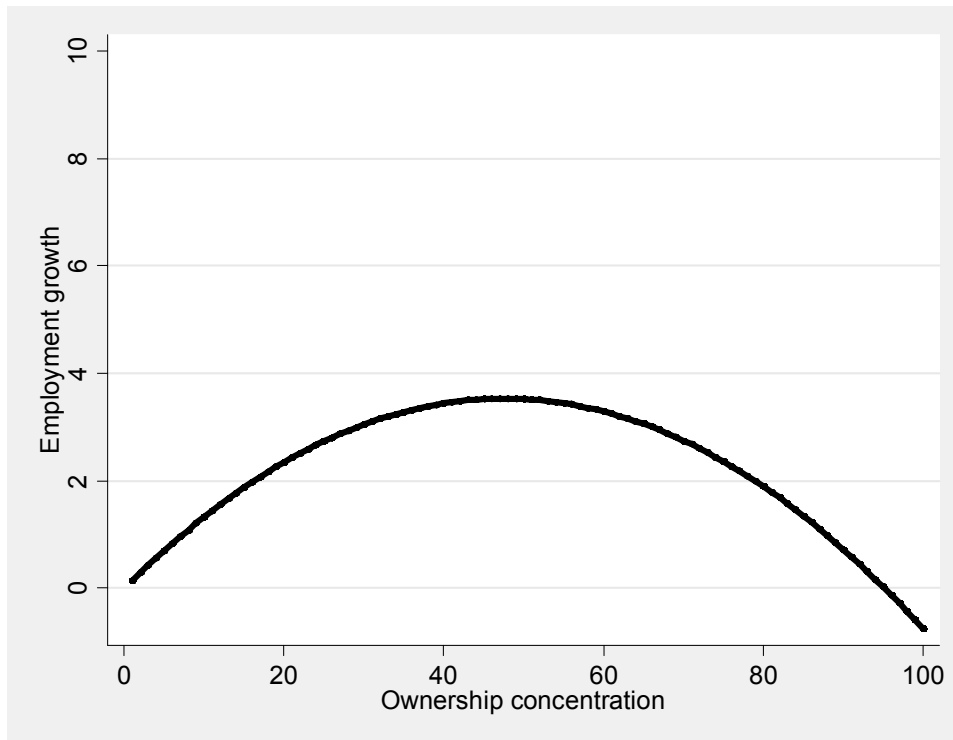
	Dependent variable: <i>employment growth</i>				
	full sample	non-EU-member	EU-member	weak legal system	strong legal system
Blockholder	0.148* (1.75)	0.204* (1.94)	0.001 (0.01)	0.326** (2.01)	0.089 (0.89)
Blockholder <sup>2</sup>	-0.002** (-2.38)	-0.002** (-2.42)	0.0001 (-0.42)	-0.003** (-2.33)	-0.001 (-1.44)
State-owned	0.288 (0.16)	-1.380 (-0.65)	6.011* (1.94)	2.210 (0.75)	-1.082 (-0.48)
Foreign-owned	11.849*** (5.27)	10.807*** (3.7)	11.705*** (3.38)	7.870 (1.56)	12.650*** (5.03)
log(Employees <sub>it-3</sub> )	-8.390*** (-23.15)	-9.577*** (-20.72)	-6.136*** (-10.70)	-10.639*** (-14.59)	-7.515*** (-18.14)
log(Age)	11.481*** (-16.82)	-10.459*** (-12.81)	-14.101*** (-11.29)	-8.298*** (-6.52)	-12.893*** (-15.94)
Human capital	-0.02 (-1.04)	-0.014 (-0.62)	-0.039 (-1.12)	0.000 (-0.01)	-0.033 (-1.33)
Export	0.130*** (6.31)	0.142*** (5.3)	0.104*** (3.27)	0.183*** (3.41)	0.119*** (5.27)
Publicly quoted	-2.827* (-1.68)	-4.155** (-2.16)	2.962 (0.80)	0.813 (0.28)	-3.486* (-1.67)
Competition	0.428 (0.3)	0.528 (0.3)	0.008 (0.00)	-0.574 (-0.22)	0.798 (0.46)
F-test time dummies	13.04***	6.69***	16.82***	3.12**	13.17***
F-test country dummies	12.74***	6.96***	8.41***	9.61***	11.15***
F-test industry dummies	6.6***	5.34***	2.87***	2.95***	5.26***
$R^2$	0.094	0.099	0.087	0.092	0.101
Number of obs.	20638	14588	6050	6547	14091

Notes: All regressions use heteroskedasticity-robust standard errors. *t*-values are given in parentheses. \*, \*\*, \*\*\* denote significance at the 10%, 5% and 1% level respectively.

For the full sample we find an inverted u-shaped relationship between ownership concentration and firm performance with a turning point at about 48 % ownership concentration on the largest owner. The relationship is graphically illustrated in Figure 2.



**Figure 2: Effect of *Blockholder* on employment growth (full sample)**



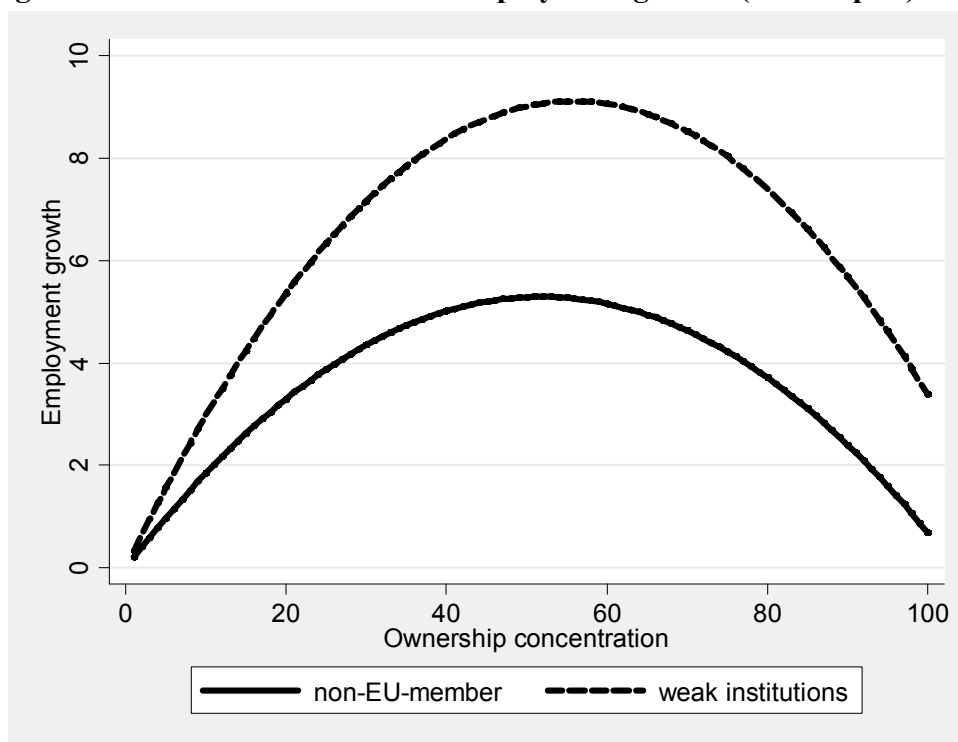
We interpret this result as evidence for a classic agency conflict between shareholders and manager(s) of a firm, when a controlling shareholder is absent. That those firms with especially high ownership concentration also perform poorly points to high private benefits of control and underdeveloped investor protection rights. It seems that large owners either want to protect their private benefits of control because they are afraid of exploitation of their own investment in the case that another sufficient powerful investor joins the company, or investor protection is so poor that external investors for new projects are discouraged already in the first place. Both arguments lead to an interpretation of forgone investment opportunities that explain the result of weaker employment growth of firms with one large owner who holds more than 48 % of ownership of the company.<sup>5</sup>

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<sup>5</sup> We also conducted a robustness test where we do not specify a squared relationship between *growth* and *blockholder*, but use a series of dummy variables. We used a separate dummy for full ownership of 100% and computed ten dummies for the remaining observations according to the deciles of the blockholder distribution. This specification confirms an inverted u-relationship, but between the 7<sup>th</sup> decile and the last decile of the distribution (excluding 100% ownership) the shape of the curve is a somewhat more fuzzy than the squared specification suggests.

As the institutional environment and the legal system are supposed to play a crucial role for investor protection and the effectiveness of ownership concentration as a corporate governance device, the sample is split into EU and non-EU countries, as well as weak and strong legal systems. As a main result we see that the inverted u-shaped relationship we found in the full sample is actually driven by those countries that are not in the EU or have a weak legal system, respectively. The starting values of the negative effect of ownership concentration are, with 52 % for non-EU-member countries and 56 % for countries with a less developed legal system, slightly higher than estimated in the full sample, which suggests that a monitoring shareholder lowers agency costs.

**Figure 3: Effect of *Blockholder* on employment growth (subsamples)**



Having a blockholder owning an absolute majority of stakes is usually sufficient to control the management effectively, which might explain the decreasing effectiveness of growing ownership concentration. Consequently the positive monitoring effect is dominated by the difficulty of external investor's enticement if ownership concentration rises above 52 % or 56 %, respectively. These effects are statistically as well as economically more

pronounced in transition economies with weak legal systems compared to non-EU-member countries as Table 5 and Figure 3 show. Furthermore, the estimated slopes suggest that the positive monitoring effect is nearly offset in the non-EU-member countries with rising ownership concentration while for firms in weak legal environments high ownership concentration seems to be preferable compared to a highly dispersed ownership structure.

According to the models for the subsamples of EU countries or countries with strong legal systems, respectively, ownership concentration has no significant influence on firm performance. Similar to other world regions institutional environments appear to matter for the effectiveness of ownership concentration as a corporate governance mechanism. An interpretation of the evidence could be that firms in well developed transition economies do not need large blockholders for management monitoring and private benefits of control are not as common as in weaker institutional environments.

For government-owned firms we find only one significant positive effect in EU-member countries at the 10 % level, which could be interpreted as weak evidence for an effective employment policy in the EU. In line with other studies on corporate ownership and firm performance in transition economies, we find strong evidence that foreign-owned firms perform better than domestic companies. Interestingly this finding does not hold for transition economies with a weak legal system. This result might be explainable by the fact that either well prepared foreign investors tend not to launch firms within weak legal environments or those firms who are already there are hindered by institutional obstacles to use their possibly superior techniques, knowledge and management that makes them more successful in other transition economies.

Referring to the remaining explanatory variables reveals mostly the expected signs and magnitudes. More employees in t-3 and higher firm ages are significantly negative correlated with employment growth in all models which reflects usual firm growth paths. A higher

fraction of employees with a university degree has no influence on firm performance. Maybe firms with higher human capital intensity work more efficient and can grow therefore without relying on workforce enhancement. Exporting is positively associated with firm performance in all models at high significance levels which supports the perception that access to foreign markets is important for firm growth. Finally we find weak evidence for less pronounced firm growth of firms that are publicly-quoted compared to non-listed firms. This finding could be explained by the already mentioned initial size dependents of firm growth because listed firms are regularly at an upper part of their growth path and have already a quite high workforce compared to the average non-listed firm. Fast growing small firms are usually not publicly-quoted. Somehow surprising, informal competition has no significant influence on firm growth which points to the fact that this problem is maybe overestimated from a theoretical perspective.

## **5. Conclusions**

The present paper provides evidence of an inverted u-shaped relationship between ownership concentration and firm performance in transition economies with weak institutional environments. For less developed transition economies that are not member of the EU and those with inferior legal systems ownership concentrations seems to play an important role in management monitoring. Up to slightly above 50 % ownership concentration, firm performance increases in terms of employment growth. It declines however after passing a certain peak value around 55 %, on average. Hence, the positive monitoring effect of a controlling large shareholder is dominated by a stronger negative effect from these turning points onwards. We interpret this finding, on the one hand, as evidence for high private benefits of control with the implication that fewer large owners want to share these benefits with other investors even if lucrative investment opportunities forgo thereby.

On the other hand, these findings are consistent with the interpretation that investor protection rights are poor in weak institutional and legal environments which leads to an undersupply of capital and therefore lower growth of firms that are not able to attract outside investors. Regardless which explanation actually holds it seems evident that firms in transition economies with weak institutional environments do not exploit their growth opportunities. This interpretation is also supported by the finding that only in transition economies with weak legal systems foreign owners are not associated with higher firm growth than domestic ones.

Finally, it should be noted that our study is not without limitations. First, it would be desirable to have panel data for the analysis. This would allow controlling for growth differences because of unobserved heterogeneity, for instance management quality. However, we believe that unobserved heterogeneity should not cause major differences in the findings if long time-series would be available. As our dependent variable is measured as percentage changes in terms of growth, it would be unlikely that factors unobserved to the researcher that are time constant would drive the results substantially. It would require that a firm basically grows exponentially over time due to time-constant factors.

Second, it would however be highly desirable to have panel data in order to control for the potential endogeneity of our covariates. Our current specification may suffer from feedback effects from *growth* to *blockholder* and also to some other covariates. Panel data would offer natural candidates for instrumental variables. In this study, we are unfortunately not able to instrument our covariates due to the cross-sectional structure of the data. Neither does the survey offer other compelling variables that could serve as instrumental variables. Therefore, we cannot claim causality for our results found. One should rather see this as explorative study suggesting that corporate governance structures may be an important factor

driving long-run growth in transition economies. More research identifying causality in more detail should be conducted when richer data become available.

Further research which disentangles the positive management monitoring effect and the negative effect of private benefits of control in transition economies would also be an interesting extension of our work.

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## Appendix

**Table 6: Results of t-tests on mean differences in variables between split samples**

Variable	Non-EU vs. EU	Weak law vs. Strong law
	t-values for H0: mean(non-eu)-mean(eu)=0	t-values for H0: mean(weak law)-mean(strong law)=0
Employee growth	7.57***	0.27
Blockholder	-4.46***	1.82*
Employees, t-3	3.55***	2.29**
Age	-0.95	-10.19***
Human capital	32.89***	22.23***
Export	-7.5***	-22.89***
State-owned	6.59***	1.09
Foreign-owned	-4.7***	-6.45***
Publicly quoted	10.41***	7.41***
Competition	4.71***	-6.4***
Weak legal system	108.98***	
Political rights	168.74***	297.56***
Civil liberty	203.62***	273.84***