Impact of Country-Level Governance and Ownership Concentration on Firm Value in Central Europe

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Abstract

Purpose: The article considers country-level governance factors (legal/regulatory system and financial development) and ownership concentration that impact the value of non-financial firms in Central European nations, specifically by describing a study done in Austria, Czech Republic, Germany, Hungary, Slovenia, and Switzerland.

Methodology: A fixed effect panel data regression analysis was applied to a strongly balanced panel data using a collection of six diverse Central European countries' non-financial firms across the sample period of 2010–2020.

Results: According to regression analysis, the legal and regulatory system as well as financial development have a positive relationship with firm value. The firm's value rises as the legal and regulatory system improves. Furthermore, the growth of financial markets adds to the firm's value. However, our study reveals a negative relationship between ownership concentration and firm value, which indicates that ownership concentration is too high to allow for effective supervision, implying that more ownership concentration lowers firm value, as the expropriation theory suggests.

Originality: The study examines the value of a firm by incorporating both country – and firm-level factors, which broadens the current literature's insight.

Implications: Overall, our findings add to the literature on the value of non-financial firms by providing new significant information. Some of the recommendations may be beneficial to the long-term success of non-financial companies.

Keywords: Central Europe, country governance, legal and regulatory systems, financial development, ownership concentration.

JEL: G10, G32, G38, E60

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Introduction

Many of the fundamental disparities in company value among countries may be explained by the legal environment, the quality of regulation, and government effectiveness in safeguarding shareholders' rights according to law and the financial literature published in recent decades. Although the connection between country governance and firm value has been a prominent issue of empirical research for decades, evidence for such a correlation remains equivocal. Only a few studies have appeared about country-level governance and its influence on firm value (Chari et al., 2010; Iturriaga and Crisóstomo, 2010; Morey et al., 2009). According to Claessens and Yurtoglu (2013), the growth of both financial markets and legal systems significantly impacts current corporate governance issues. Moreover, few studies scrutinize the impact of ownership concentration on firm value (Selarka, 2005; Vintilă and Gherghina, 2014).

This study examines the influence of country-level governance (legal and regulatory systems and financial development) and ownership concentration on non-financial firm value. Considering institutional and regulatory variables, Naceur and Omran (2011) found that legal enforcement, regulatory system efficiency, and company value are all positively connected. Moreover, according to Love (2011), the expansion of the financial sector increases capital allocation, liquidity, access to more sophisticated financial instruments, information flow, and the costs of additional credit, allowing businesses to better capitalize on current growth opportunities. In addition, Nugraha (2017) indicates there is a positive association between access to financing and company performance, particularly in Indonesia's western region. On the other hand, according to the expropriation hypothesis, a highly concentrated ownership structure might result in a decrease in firm value (De Miguel et al., 2005). However, larger owners or block shareholders are to have a greater incentive and better chance to influence management than smaller shareholders (cf. Jensen and Meckling, 1976; Shleifer and Vishny, 1986), which positively impacts total firm value.

Empirical research often employs either country – or firm-level variables of firm value, hardly ever both at the same time, which hinders attempts at verifying the connection between firm – and country-level variables. To fill this research gap, we scrutinized the joint influences of country-and firm-level variables on firm value of six Central European countries (Austria, Czech Republic, Germany, Hungary, Slovenia, and Switzerland) using a large set of panel data from its most recent generation in 2010–2020. Second, we focused on major issues such as firm value, the impact of legal and regulatory systems, the impact of financial development, and ownership concentration. We concentrated on Central European countries as past research demonstrated the influence of these characteristics only for a certain country or smaller area. Finally, to estimate the impact on firm value, we utilized a regression model that included

cross-sectional and time series data, in contrast to some studies that only used a cross--sectional technique to investigate their findings.

The rest of this paper is organized in the following manner. Section 2 will describe the literature review and hypotheses development. Section 3 will present the methodology. Section 4 will discuss data analysis. Finally, section 5 will conclude the article.

Literature Review and Hypotheses Development

To conduct this research, we divided our variables into two portions: country – and firm-level determinants. In this regard, Claessens and Yurtoglu (2013) suggest that the present corporate governance problems are heavily influenced by the evolution of both financial markets and legal systems. Therefore, for the purposes of this study we divided the country-level variables into legal and regulatory systems and financial development systems.

Voice and accountability, political stability or no violence, government effectiveness, regulatory quality, rule of law, and corruption control were all aspects of the legal and regulatory system that we considered. Demirgüç-Kunt and Maksimovic (1998) and later Demirgüç-Kunt and Levine (2004) argue that better legal enforcement and efficient regulatory systems are associated with lower levels of corruption, which make financial systems perform with much less friction. Moreover, Naceur and Omran (2011) foreground that legal enforcement, regulatory system efficiency, and firm value are all positively related when considering institutional and regulatory factors. However, Claessens and Yurtoglu (2013) suggest that most of these features are qualitative in cross--country studies, which makes them difficult to represent and codify. Moreover, after analyzing measures in security laws for nearly 50 countries, La Porta et al. (2006) found credible evidence that laws that demand transparency and allow for private regulation via liability standards improve stock markets and firm value. Thus, we posited the following hypothesis:

H1: The improved regulatory and legal systems increase firm value.

The purpose of financial companies in financial markets is to reduce operational costs by acting as a mediator between savings and borrowings units. Love (2011) revealed that financial sector development improves capital allocation, liquidity, accessibility to complex financial instruments, information flow, and costs of additional financing, thus allowing firms to better capitalize on present growth possibilities. Moreover, market abnormalities and opportunistic conduct emerge while financial markets are underdeveloped, severely impacting firm value (Saona and San Martín, 2016). Furthermore, Lin and Tai (2013) indicate that improved governance by developed financial

systems not only reduces agency problems in firms but also enhances information quality produced by analysts. However, Nugraha (2017) reveals a favorable relationship between access to firm finance and performance, notably in Indonesia's western area. Hence, we hypothesized that:

H2: Developed financial markets increase firm value.

The distribution of ownership among stockholders may either ease or exacerbate agency issues. Expropriation – also known as the horizontal agency problem – happens when large shareholders utilize their decision-making authority for their own benefit, which may be similar to that of small shareholders (De Miguel et al., 2005). The expropriation theory suggests that a highly concentrated structure of ownership might lead to firm value loss. As a result, income is redistributed from minor to major shareholders, causing a decrease in the firm's market value as the dominant shareholder's influence grows. However, Jensen and Meckling (1976) and Shleifer and Vishny (1986) revealed that larger owners or block shareholders have a stronger motive and better opportunity to influence management than smaller shareholders, which beneficially impacts overall firm value. However, Vintilă and Gherghina (2014) indicate that the first major shareholder's absence impacts a firm's value. Thus, we proposed the following hypothesis:

H3: Higher ownership concentration decreases firm value.

Methodology

We performed a panel data estimate in this study. Financial firms were omitted from the study because the type of their business and regulatory structure could skew results. Moreover, we eliminated firms with negative equity, such as firms that are legally bankrupt. This study included all non-financial institutions as a sample from six Central European countries – Austria, Czech Republic, Germany, Hungary, Slovenia, and Switzerland – with a total of 551 observations over 11 years, from 2010 to 2020, and strongly balanced panel data. The dataset's information was gathered from a variety of sources. The database of Thomson Reuters was used to gather financial statements and stock quotations at the conclusion of each financial year. The revised data collection of Beck et al. (2000), which includes information about financial improvement by country and year, is generally accessible on the World Bank's website, which we employed to gain country-level data.

Variables Description

Table 1 summarizes the explanatory variables used in the study, along with their related computations. We used two types of variables: country – and firm-level. Moreover, country-level variables were distributed into two sections, such as legal enforcement and regulatory systems and financial development.

Table 1. Variables description

Variables	Explanation	Data source
Country-level variables		
VA	Voice and accountability	Kaufmann et al. (2011); Saona and San Martín (2016)
PS	Political stability	
GE	Government effectiveness	
RQ	Regulatory quality	
RL	Rule of law	
CC	Control of corruption	
Legal	Average of six indicators of governance	
DBAGDP	Deposit money bank assets to GDP (%)	Beck et al. (2000); Saona and San Martín (2016)
PCRDBGDP	Private Credit by Deposit Money Banks to GDP (%)	
BCBD	Bank credit to bank deposits (%)	
STMKTCAP	Stock market capitalization to GDP (%)	
STVALTRADED	Stock market total value traded to GDP (%)	
STTURNOVER	Stock market turnover ratio (%)	
Finance	Average of six measures of financial development	
Firm-level variables		
FV	Firm value: Sum of market capitalization and total liability to total assets	Saona and San Martín (2016)
OC	Ownership concentration: Average of different categories of owners	Saona Hoffmann and Vallelado González (2005); Saona and San Martín (2016)
Size	Natural logarithm of total assets	De Miguel et al. (2004); Hoffmann (2014); Lins (2003); McConnell and Servaes (1990); Saona and San Martín (2016)

| ROA | Return on assets: Net income to total assets | Haugen and Baker (1996); Saona and San Martín (2016); Yang et al. (2010) |
| Z-score | Measure the insolvency risk of the firm | Altman, 2005; Saona and San Martín (2016) |

Source: own elaboration.

In legal enforcement and regulatory systems, we utilized six different governance variables (cf. Kaufmann et al., 2011; Saona and San Martín, 2016):

(i)   voice and accountability (VA), which is the process of selecting, monitoring, and replacing governments;

(ii)   political stability (PS) is a metric that assesses public opinion's view about the government's potential for destabilization or deposing by unlawful or violent means, such as politically-driven terrorism and violence;

(iii) government effectiveness (GE) measures the quality of government and public services as well as their freedom from political influences, the accuracy of policy development and execution, and the government's adherence to those policies;

(iv)   regulatory quality (RQ) assesses public opinion's view on the government's capacity to establish and enforce effective rules and regulations that allow and support the private sector development;

(v)   the rule of law (RL) measures the reliability of enforcing contracts, land rights, functioning of the police and the judiciary as well as the risk of violence and crime as all the factors that influence actors' trust in societal norms and whether they follow them;

(vi)   the control of corruption (CC) assesses how much public authority is used for private benefit, which covers both minor and significant kinds of corruption as well as "state takeover" by leaders and commercial interests.

In financial development, we utilized six different measures of financial development (cf. Beck et al., 2000; Saona and San Martín, 2016):

(i)   deposit money bank assets to GDP (in %; DBAGDP);
(ii)   private credit by deposit money banks to GDP (in %; PCRDBGDP);
(iii) bank credit to bank deposits (in %; BCBD);
(iv)   Stock Market Capitalization to GDP (in %; STMKTCAP);
(v)   stock market total value traded to GDP (in %; STVALTRADED);
(vi)   stock market turnover ratio (in %; STTURNOVER).

In firm-level variables, we used variables that affect various categories of owners to correct for and assess the consequences of ownership concentration, and we produce an ownership concentration index (cf. Saona Hoffmann and Vallelado González, 2005; Saona and San Martín, 2016). We used non-financial institutions' size utilized in past research (De Miguel et al., 2004; Hoffmann, 2014; Lins, 2003; McConnell and Servaes, 1990; Saona and San Martín, 2016), which is estimated by the natural logarithm of total assets. The return on assets (ROA) was employed as an alternative for firm profitability, which estimated net income to total assets (cf. Haugen and Baker, 1996; Saona and San Martín, 2016; Yang et al., 2010). Moreover, we measured the insolvency risk of firms following the Z-score (Altman, 2005; Saona and San Martín, 2016).

As a dependent variable, we used firm value (FV; cf. Saona and San Martín, 2016), which we estimated with the following equation:

$$\text{Firm value (FV)} = \frac{\text{Company Market Capital} + \text{Total Liabilities}}{\text{Total Assets}}$$

The following was our fixed-effect regression model:

$$FV = \beta_0 + \beta_1 OC + \beta_2 SIZE + \beta_3 ROA + \beta_4 ZSCORE + \beta_5 DBAGDP + \beta_6 PCRDBGDP + \beta_7 BCBD + \beta_8 STMKTCAP + \beta_9 STVALTRADED + \beta_{10} STTURNOVER + \beta_{11} VA + \beta_{12} PS + \beta_{13} GE + \beta_{14} RQ + \beta_{15} RL + \beta_{16} CC + \beta_{17} LEGAL + \beta_{18} FINANCE + \text{Year Dummies},$$

in which:
    FV – firm value;
    OC – ownership concentration;
    SIZE – measure of firm size;
    ROA – firm profitability;
    ZSCORE – firm insolvency risk;
    DBAGDP – deposit money bank assets to GDP (%);
    PCRDBGDP – private credit by deposit money banks to GDP (%);
    BCBD – bank credit to bank deposits (%);
    STMKTCAP – stock market capitalization to GDP (%);
    STVALTRADED – stock market total value traded to GDP (%);
    STTURNOVER – stock market turnover ratio (%);
    VA – voice and accountability;
    PS – political stability/no violence;
    GE – government effectiveness;
    RQ – regulatory quality;
    RL – rule of law;

CC – control of corruption;
LEGAL – average of six indicators of governance;
FINANCE – average of six measures of financial development.

Analysis

To estimate our results, we employed a fixed-effect model. We omitted pooled OLS regression because it is appropriate for unbalanced datasets, while our dataset is extremely well balanced. The Hausman test (aka Durbin-Wu-Hausman; DWH) was used to assess whether a fixed effects regression model or a random effects regression model suited our study. After the Hausman test, we discovered that the null hypothesis was rejected, which suggested that the fixed effects regression model is an excellent fit for our estimation. Moreover, we used our panel data to do the Wooldridge auto-correlation test to examine if our fixed effects model has any first-order auto-correlation. Furthermore, we ran the modified Wald test for groupwise heteroskedasticity – often used with cross-sectional time series data – to determine if our fixed effect model had any concerns with groupwise heteroskedasticity. Finally, we employed robust standard errors in our regression equation.

Descriptive Statistics

Table 2 shows the variables we addressed in our research. The average firm value (FV) in our study was 1.551, while standard deviation was 0.751, which indicated that a typical firm's market value was around 55% more than its book value. The ownership concentration (OC) showed that the average value was 0.522, which meant more than half of the total issued shares were held by the majority shareholder of around 52%. This utilized the fact that Central European firms show a high concentration of ownership (Saona and San Martín, 2016). The statistics showed that the size has a mean of 22.698 and standard deviation of 2.164. Moreover, the Z-score revealed a mean of 16.031. Since companies with negative equity were excluded from the data, we could state that a firm is functioning in a safe place with minimal risk of bankruptcy when the mean indicator for insolvency risk (Z-score) is greater than 2.6.

The remaining variables were country-level determinants, which are divided into two portions: financial development (FINANCE) and legal and regulatory systems (LEGAL).

For financial development, we utilized six different measures of financial development (cf. Beck et al., 2000; Saona and San Martín, 2016). Table 2 depicts that deposit money

bank assets (DBAGDP) showed the average of 104.44% of GDP, whereas bank credit to bank deposits (BCBD) presented the average of 102.437%, demonstrating that Central European banking systems remain in a developing position. However, the stock market capitalization (STMKTGDP) represented an average of 68.936% of GDP. Furthermore, the total value traded in the stock market (STVALTRADED) indicated the mean of 42.852% of GDP. As a result, in the six Central European countries from our dataset, the banking system emerged as stronger than the capital market.

Table 2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FV	772	1.551	0.751	0.485	4.546
OC	776	0.522	0.011	0.500	0.550
SIZE	797	22.698	2.164	16.373	26.932
ROA	782	0.063	0.056	−0.147	0.227
Z-Score	600	16.031	7.288	0.000	26.397
DBAGDP	600	104.444	40.619	0.000	176.949
PCRDBGDP	600	88.860	42.527	0.000	172.103
BCBD	600	102.437	24.910	0.000	164.516
STMKTCAP	600	68.936	74.832	0.000	228.218
STVALTRADED	600	42.852	45.062	0.000	143.804
STTURNOVER	600	55.026	31.958	0.000	116.870
VA	750	1.270	0.317	0.220	1.640
PS	750	0.978	0.261	0.583	1.418
GE	750	1.476	0.446	0.453	2.112
RQ	750	1.425	0.392	0.575	1.912
RL	750	1.519	0.440	0.400	1.995
CC	750	1.455	0.659	−0.001	2.152
FINANCE	600	0.668	0.072	0.567	0.813
LEGAL	750	0.771	0.077	0.585	0.868

Source: own elaboration.

We used six different governance variables to scrutinize the legal enforcement and regulatory systems (cf. Kaufmann et al., 2011; Saona and San Martín, 2016). In our study, the rule of law (RL), government effectiveness (GE), and the control of corruption (CC)

showed the highest mean values of 1.519, 1.476, and 1.455, respectively, which was higher than political stability (PS), which presented the mean value of 0.978. As a result, we could argue that government effectiveness, the rule of law, and corruption control are more consistent than the stability of politics in the six Central European countries in our dataset. Even though the value of the six dimensions in our data set ranged from -2.5 to +2.5, Table 2 presents no values that are higher or differ significantly from this range.

Pairwise Correlation

Figure 1 depicts the pairwise correlation found in our study. Ownership concentration had a significantly negative correlation with firm value, indicating that high ownership concentration in firms may decrease their value. Firm profitability – which we denote as return on assets (ROA) – revealed positive the significance of firm value and negative significance of ownership concentration, meaning that when a firm increases its profit, the value of the firm also increases. However, Figure 1 also portrays the negative significance for insolvency risk (Z-score) and ownership concentration, indicating that the increase in ownership concentration reduces the risk of bankruptcy. In financial development of country-level variables, deposit money bank assets (DBAGDP) showed positive significance for firm value, size, and profitability, which determined that an increase in deposit money into bank assets increases firm value. Consequently, firm value increases firm profitability. However, the relationship of bank credit to bank deposit (BCBD) shows a significantly negative association for firm value as firm value was to decrease with the rise of bank credit to bank deposit. Moreover, stock market capitalization (STMKTGDP) showed a positive correlation with firm value, which indicated that firm value increases with the increase in capital in the stock market. In legal and regulatory systems, the six different indicators showed positively significant correlation with firm value. Moreover, the average of those indicators (LEGAL) revealed a significantly positive correlation with firm value, which indicates that the stronger the regulatory and legal systems of a country, the more firm value increases.

However, except for the variables of legal and regulatory systems and financial development, we found no strong correlations, which was to be expected. These groups of variables were then included in further analysis.

Regression Analysis

According to the Hausman test, the fixed effects regression model provides the best fit for our study. The impact of country-level variables on firm value is described in

Table 3. The very first six columns contain variables DBAGDP, PCRDBGDP, BCBD, STMKTCAP, STVALTRADED, and STTURNOVER, which describe the financial system's development. The more established the financial system, the greater the values of these variables. To build an index for the growth of the financial system (FINANCE), we used the mean values of such variables by country and year. Moreover, the legal and regulatory systems were reflected in the next six columns by governance indicators: VA, PS, GE, RQ, RL, and CC. The legal and regulatory systems were more sophisticated the higher the values of these variables. Moreover, we constructed an index of legal and regulatory systems (LEGAL), calculated by taking the sample mean of these factors by country and year.

In terms of the variables that assess the impact of the legal and regulatory system on firm value, Table 3 shows that all the variables VA, PS, GE, RQ, RL, and CC in models 7 to 12 reveal a significantly positive relationship at the level of 1%. Furthermore, in model 13 the index of legal and regulatory variables (LEGAL) reveals a positive significant relation at a 1% level. Moreover, when we consider LEGAL and FINANCE variables jointly in model 15, Table 3 indicates a significantly positive relationship between the LEGAL variable and firm value (FV). That means the different governance indicators very strongly influence the impact of firm value. Thus, H1 on LEGAL variables is accepted, which means that improved regulatory and legal systems increase firm value.

Considering financial development variables DBAGDP, PCRDBGDP, BCBD, STMKTCAP, STVALTRADED, and STTURNOVER in the banking system, we observe that deposit money bank assets (DBAGDP) and private credit by deposit money banks to GDP (PCRDBGDP) show no impact on firm value, while bank credit to bank deposits (BCBD) reveals a negatively significant impact on firm value in model 3. Meanwhile, in capital market development, three variables in models 4 to 6 (STMKTCAP, STVALTRADED, STTURNOVER) show a positive significant impact on firm value, at the level of 1%. Thus, the growth of the capital market seems to raise firm value, which is a new finding in our analysis of six Central European countries. Moreover, when we consider the average of all financial development variables (FINANCE) in model 14, Table 3 reveals a strong positive significant relationship between financial development variables (FINANCE) and firm value (FV). However, when we observe LEGAL and FINANCE jointly, Table 3 shows no significant impact of FINANCE on firm value. Consequently, our H2 is validated as FINANCE variables are accepted, which is revealed by model 14: developed financial markets increase firm value in six Central European countries.

The influence of company ownership concentration (OC) as a firm-level variable on firm value is also examined in Table 3. In all models, OC shows a negative significant

Table 3. Regression analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	FV	FV	FV	FV	FV	FV	FV	FV	FV	FV	FV	FV	FV	FV	FV
OC	-9.39***	-9.118***	-9.69***	-4.941***	-5.629***	-8.154***	-7.908***	-8.91***	-6.623***	-7.99***	-8.15***	-5.57***	-6.687***	-6.991***	-6.306***
	(1.902)	(1.911)	(1.834)	(1.774)	(1.818)	(2.017)	(1.882)	(1.769)	(1.886)	(1.809)	(1.791)	(1.904)	(1.831)	(1.925)	(1.836)
SIZE	-.027**	-.027**	-.045***	-.072***	-.09***	-.055***	-.084***	-.022**	-.088***	-.108***	-.073***	-.103***	-.099***	-.047***	-.097***
	(.012)	(.012)	(.012)	(.012)	(.013)	(.015)	(.013)	(.011)	(.013)	(.014)	(.012)	(.014)	(.013)	(.013)	(.013)
ROA	3.607***	3.554***	3.453***	2.926***	2.893***	3.309***	3.144***	3.607***	3.161***	3.266***	3.68***	3.056***	3.172***	3.38***	3.175***
	(.29)	(.287)	(.294)	(.263)	(.272)	(.28)	(.275)	(.285)	(.279)	(.276)	(.281)	(.285)	(.274)	(.277)	(.275)
ZSCORE	.011***	.01***	.018***	.018***	.019***	.01***	-.003	.01***	-.001	-.008**	-.006*	-.003	-.004	.009***	-.004
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
DBAGDP	0														
	(0)														
PCRDBGDP		0													
		(0)													
BCBD			-.004***												
			(.001)												
STMKTCAP				.004***											
				(0)											
STVALTRADED					.006***										
					(.001)										
STTURNOVER						.003***									
						(.001)									

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VA							.927*** (.098)								
PS								.523*** (.065)							
GE									.61*** (.065)						
RQ										.815*** (.077)					
RL											.605*** (.065)				
CC												.475*** (.051)			
LEGAL													4.291*** (.41)		4.091*** (.474)
FINANCE														1.676*** (.319)	.275 (.346)
_cons	6.547*** (1.123)	6.396*** (1.127)	7.498*** (1.095)	4.957*** (1.042)	5.671*** (1.068)	6.38*** (1.184)	6.098*** (1.11)	5.712*** (1.049)	5.796*** (1.11)	6.836*** (1.082)	6.282*** (1.054)	5.796*** (1.113)	3.719*** (1.102)	4.623*** (1.152)	3.435*** (1.108)
Observations	551	551	551	551	551	551	551	551	551	551	551	551	551	551	551
Pseudo R^2	.z	.z	.z	.z	.z	.z	.z	.z	.z	.z	.z	.z	.z	.z	.z
Year Dummy	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Note: Standard errors are in parentheses. *** $p<.01$, ** $p<.05$, * $p<.1$.

Source: own elaboration.

impact on firm value at the level of 1%. In the six studied countries, our data confirmed the hypothesis that ownership concentration is too large to allow for effective supervision. It appears that leading shareholders reap private profits at the expense of small investors, thus lowering firm value. As per estimated coefficients, a one percentage point increase in ownership concentration may decrease firm value from 4.941% to 9.118%, as shown in models 4 and 3, respectively. Hence, our findings accept H3, which posits that greater ownership concentration decreases firm value.

Among control variables, we considered firm size (SIZE), firm profitability (ROA), and insolvency risk (ZSCORE). Table 3 shows a negative significant impact of firm size on firm value in all models, which indicates that it is difficult to keep track of larger, more sophisticated firms. Moreover, firm profitability (ROA) presents a positive significant relationship with firm value in all models. Table 3 reveals that a one percentage point increase in firm profitability may increase firm value from 2.893% to 3.68%, as shown in models 11 and 5, respectively. Moreover, this suggests that capital investments and their ability to create revenue are significant determinants of Central European firm value. Finally, insolvency risk (ZSCORE) fluctuates in each model, which indicates that positive significance negatively impacts firm value and negative significance positively impacts firm value.

Conclusion

The above study from 2010–2020 shows how country governance (legal and regulatory systems and financial development) and ownership concentration change the value of the firm in six Central European countries: Austria, Czech Republic, Germany, Hungary, Slovenia, and Switzerland. Only a few empirical analyses examined the impact of ownership concentration on firm value. In turn, this study reveals the joint impact of country-level governance and ownership concentration on firm value. We considered country-level variables with six measures of financial development and six indicators of legal and regulatory systems. Our findings revealed that all the measures of legal and regulatory systems show a positive impact on firm value. This implies that stable political sector, control of corruption, and high government effectiveness can raise firm value in Central European countries. Moreover, although the banking and the capital market systems were included in the financial market, our analysis revealed that the growth of capital market raises firm value, which is a new finding in the literature. However, ownership concentration showed negative significance for firm value, which indicated that more concentrated ownership decreases firm value, which supports the expropriation hypothesis.

Overall, our findings contribute to the existing literature on the impact of country-level governance and ownership concentration on firm value by providing important insights. We believe our findings are significant for a variety of reasons. First, our findings corroborate prior research on the value of non-financial firms of six in Central European countries. Second, we did not concentrate on just one country. Third, our study spanned the period of 2010–2020, which includes some of the most significant changes in the Central European financial system in recent decades.

Our results show a positive impact of legal and regulatory systems on firm value. The studied countries should be continuously measured to maintain regulatory policies. When a country maintains government effectiveness, the stability of political issues, rule of law, and control of corruption, then firm value substantially increases. Moreover, financial development positively influences firm value. Despite the banking and capital market systems are both parts of the financial market, our research showed that the expansion of the capital market increases firm value. However, ownership concentration shows negative significance on firm value, showing that firm value drops when controlling shareholders expropriate the wealth of minor shareholders. The controlling shareholders look after their own benefits, ignoring the rights of minor shareholders. Therefore, the study suggests taking necessary steps to minimize the issue and protect the rights of minor shareholders in the studied countries.

Notwithstanding the above, our study shows a few limitations as it was limited to country – and firm-level variables. Future research may expand the study by adding macroeconomic factors into consideration – such as GDP or inflation rate – by including more non-financial firms and other Central European countries, or by considering observing the influence of the variables on firm performance rather than just firm value. Finally, mixed ownership concentration can also be studied in future research.

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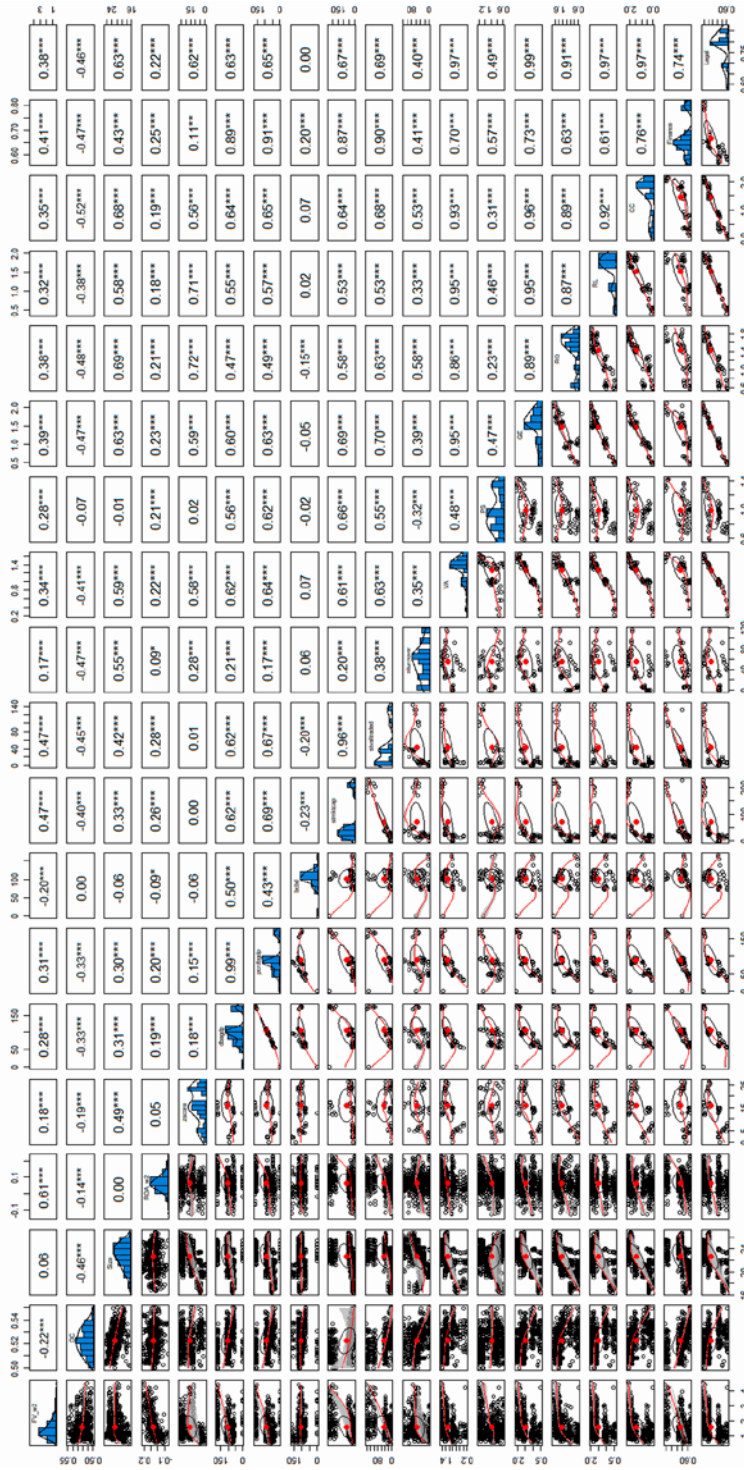
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Appendix

Figure 1. Pairwise correlation

Source: own elaboration.