OWNERSHIP STRUCTURE, FIRM PERFORMANCE AND CORRUPTION: AN EMPIRICAL ANALYSIS OF EU COUNTRIES

Gabriella D'Amore [*], Luigi Lepore [*], Loris Landriani [*], Francesco Paolone [*], Matteo Pozzoli [*]

* University of Naples "Parthenope", Italy

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Abstract

The aim of the paper is to analyse the interaction effect corruption play in the relation between ownership structure and firm performance. This paper analyses whether and how the Corruption Perception Index affects the relationship between corporate performance and ownership structure in 2,035 firms operating in eight European countries (Denmark, Sweden, Germany, France, Finland, The Netherland, Italy, and Spain) during 2010-2017 period (10,915 firm year observations). Our findings show that level of corruption perceived by investors is relevant to the relationship between ownership concentration and firm performance. This result suggests that institutional context variables should be taken into consideration from corporate governance scholars in their empirical investigations. The contribution of the paper is twofold: first, our results evidence the relevant role played by the interaction effects between firm-level and country-level variables; second, it suggests important managerial and policy implications related to the interaction between internal and external corporate governance mechanisms.

1. INTRODUCTION

Corporate governance research shows no convergent evidence concerning the sign and form of the relationship between ownership concentration and firm performance.

More recently, corporate governance studies show that the relationship between ownership structure and firm performance is complex and depends on the context. In fact, one of the key questions becoming important in the last decade is to understand if and how country-level and firm-level variables matter for the above mentioned relationship.

Although there has been a growing debate concerning the interaction effects of macro-level variables on the relationship ownership structure-firm performance, there is still missing the analysis of the role of corruption.

In light of these considerations, the aim of the paper is to analyse the interaction effect corruption plays in the relation between ownership structure and firm performance.

This paper analyses whether and how the *Corruption Perception Index* affects the relationship between corporate performance and ownership structure in 2,035 firms operating in eight Continental European countries (Denmark, Sweden, Germany, France, Finland, The Netherland, Italy, and Spain) over an eight-year period, 2010-2017 (10,915 firm year observations).

Here we decided to focus on the corruption as country-level variable that as stated by International Chamber of Commerce (2008), is "the single greatest obstacle to economic and social development around the world" and can seriously affect both the growth rate of a country and firm performance.

Our aim is to assess which role corruption plays in determining the sign and form of ownership concentration and performance relationship, contributing in this way to the existing literature on this topic. The rest of the paper is organized as follows: Section 2 presents the literature review and the hypotheses development and testing; Section 3 describes the data research and methodology including the empirical model; Section 4 provides the empirical findings of the study; Section 5 provides discussion and implications and, finally, Section 6 presents the conclusion, limitations and directions for future research.

2. LITERATURE REVIEW

2.1. Ownership structure and firm performance

Corporate governance is considered as a set of monitoring mechanisms aimed at preventing managers or controlling shareholders from expropriating returns, minimizing problems arising through the

principal-agent relationship (Shleifer & Vishny, 1997, 1986; Demsetz, 1983)

According to Connelly et al. (2010), ownership concentration constitutes both internal and external control mechanisms and acquires increasing importance as forms of corporate governance.

As several studies evidenced in the last years, agency theory is not able to explicate the relationship between ownership concentration and performance in every context.

Empirical research conducted in different countries around the world over the last decades shows, in fact, no convergent evidence concerning the sign and form of the above-mentioned relationship. Several studies supported the monitoring hypothesis proposed by Demsetz (1983) and Shleifer and Vishny (1986), showing a positive relation between ownership concentration and firm performance (Cheung et al., 2011; Li et al., 2008; Wu & Wu, 2005). Other studies have reinforced the expropriation hypothesis, finding a negative relationship between ownership concentration and firm performance (Lehmann & Weigand, 2000; Mudambi & Nicosia, 1998). In contrast to the previous findings, other scholars showed a non-linear relationship between value and ownership concentration, thus confirming not only monitoring but also expropriation effects (de Miguel et al., 2004).

These no convergent findings progressively brought many scholars to state that institutional environment plays an important role in explaining the relationship between corporate governance, ownership structure and performance: the institutional context matter, the country settings cannot be ignored in studying the effectiveness of internal corporate governance mechanisms (Lepore et al., 2017, 2019; Peng et al., 2017; Kumar & Zattoni, 2016; Jiang & Peng, 2011a).

A key result of this growing stream of research is that the ownership structure, the corporate governance and the institutional environment may be considered as a bundle of mechanisms that, interacting each other, contribute "to alleviate or to exacerbate agency problems" (Lepore et al., 2017, 2019; Zattoni et al., 2017; Aslan & Kumar, 2014; Schiehll et al., 2014).

Many studies underline the characteristics of the institutional context that could be the reason explaining why ownership concentration can play an opposite role in influencing firm performance (Claessens et al., 2002; Bennedsen & Wolfenzon, 2000; Bolton & Von Thadden, 1998; Pagano & Röell, 1998; Ocasio, 1994; Winton, 1993): if shareholder protection is weak, the capital market efficiency is scarce, more in general the quality of institutional environment is low, using their power, large shareholders can easily extract private benefits by expropriating minority shareholder wealth, so discouraging potential investors (Burkart et al., 2003; Barclay & Holderness, 1989); alternatively, if institutional context is able to offer enough protection to investors, blockholders can benefit minority shareholders and encourage

potential investors by controlling the discretion of managers or dominant shareholder (Minichilli et al., 2012; Van Ees et al., 2009; Li et al., 2008; Maury & Pajuste, 2005; Pedersen & Thomsen, 2003; Shleifer & Vishny, 1986, 1997; Demsetz, 1983).

Our research aims at contributing to existing literature showing how corruption, considered as a variable that measures the governance and institutional quality of a country, can "mitigate or exacerbate" the relationship between ownership structure and firm performance. We assume that corruption influences the quality of institutional and business environment from which shareholder protection depends, driving both actual and potential investors' choices and to invest in equity capital.

2.2. The role of corruption in the institutional context

The definition of corruption ranges from the broad terms of "misuse of public office for private gains" (Rose-Ackerman, 1978) and "moral decay" to strict legal definitions of corruption as an act of bribery involving a public officer and a transfer of resources. Despite the statements of international organizations, the study of literature on this topic shows discordant evidence and theories.

Tseng and Wu (2016) effectively sum up the debate in two opposite viewpoints: the "grease the wheels", that joins who see the corruption as factor that can promote economic development, as it helps firms to deal with bureaucracy and to overpass its ties and constraints (Friedrich, 1972; Huntington, 1968), accelerating administrative processes and even contributing to investment and economic development.

The "sand wheels" viewers, instead, consider corruption as a factor that negatively affects economic development, as it increases transaction costs and uncertainty, discouraging potential investors and increasing economic inefficiencies (Li et al., 2000; Mauro, 1995).

Some empirical evidence prove that countries with a lower corruption level and stronger scores in institutional system and corporate governance perform better in terms of economic indicators of growth (Keefer & Knack, 1997; Barro, 1997).

The corporate governance systems of more developed countries allow a real separation between ownership and management and this become even more effective in businesses characterized by a low ownership concentration, typical of public companies. The fragmentation of equity implies that owners do not manage the business, so they require access to a large number of economic and not economic information that pushes the company toward a transparent and accountable disclosure. By contrast firms operating in less developed countries implement poor governance systems that represent an obstacle to potential investors and are prone to corruption in order to access to resources that cannot obtain from the market.

This is confirmed by a study on 27 transition countries of Central and Eastern European (Blagojevic & Damijan, 2013) analysed for 2002-2009 years, that evidence how corrupt activities affect negatively productivity growth and the effects are even more negative with a less efficient environment. After 2004 (when eight East European Countries joined EU) the involvement of firms in corrupt activities diminished and also their impact on firm performance declined, due to the improvement of business environment stability and law enforcement.

This evidence is in line with the last two decades governance literature that recognizes a key role to formal institutions, as well as these affect and interact with other governance mechanisms influencing positively or negatively firm performance (Zattoni et al., 2017)

Our literature review shows the existence of a gap in explaining the relationship between ownership structure and performance since many studies do not include context variables that influence the sign and the form of this relationship. We decided to focus on corruption since it impacts seriously the quality of the institutional setting and the economic performance of firms operating there. If some empirical evidences we find on the influence of corruption on economic growth at country (Mauro, 1995, 1998; Shleifer & Vishny, 1993; Myrdal, 1989; Friedrich, 1972; Huntington, 1968), and firm-level (Blagojevic & Damijan, 2013; Athanasouli et al., 2012; Bishara, 2011; Hallward-Driemeier et al., 2006), no evidence we find on the role of corruption play in ownership structure and firm performance relationship.

2.3. Hypothesis development

In light of the previous considerations, the aim of this paper is to investigate how corruption influences the relationship between ownership structure and performance at firm level. We expect that the relationship is positive and stronger if the corruption level is high, thus we formulated the following hypothesis:

H_1: The higher the level of corruption perceived in a national economy, the stronger the relationship between ownership concentration and firm performance, such that the relationship noted above is positive and stronger for firms operating in countries with high levels of corruption.

This because the "ideal model of governance" for business development is the separation between ownership (shareholders) and control (management) that occurs when ownership structure is fragmented, typical of public companies.

However, in contexts characterized by the high level of perceived corruption, where companies are not transparent and accountable, there are few incentives for outside investors to become shareholder, so the ownership remains concentrated in the hand of primary shareholders (see Bishara, 2011).

On the contrary, in countries characterized by lower perceived corruption levels and high transparency, accountability and minority shareholders protection, firms' ownership is more fractionated and separated from control.

These contexts attract outside investors and firms operating there benefit from the access to new resources that help them to grow up and expand their business, coherently with OECD (2015) principles on corporate governance.

3. DATA RESEARCH AND METHODOLOGY

3.1. Sample description

The sample consisted of 19,897 observations for listed companies covering an eight-year period (2010-2017) on the Italian, Spanish, French, German, Finland, Sweden, Netherland and Denmark stock exchanges. We decided to exclude financial services industries because they draw up their financial statements according to different regulations of other sectors and the comparison would be difficult to set. We also omitted 8,982 firm-year observations due to outliers and observations for which we could not gather data on ownership structure and financial information. The final dataset was composed of 2,035 firms and a total of 10,915 observations (unbalanced panel) over an eight-year period (2010-2017).

We collected accounting and financial data and ownership structures data from the *Orbis – Bureau Van Dijk*. Information on the CPI (Corruption Perception Index) was gathered a computational analysis on the basis of 13 different surveys and assessments from 12 different institutions.

Tables 1 and 2 report the process of sampling and the sample composition: France had the highest proportion (34.05 per cent), followed by Germany (19.75 per cent), Sweden (14.63 per cent), Italy (10.68 per cent), Finland (5.86 per cent), Denmark (5.69 per cent), Netherland (4.72 per cent) and Spain (4.59 per cent).

Table 1. Process of sampling

Total Observation of Non-financial Companies on the Italian, Spanish, French, German, Finland, Sweden, Netherland and Denmark stock exchanges (period 2010-2017)	19,897
Observations for which there are no information on the ownership structure and/or financial data	(8,982)
Final sample size	10,915

Table 2. Sample composition

France	3,717 (34.05%)
Germany	2,156 (19.75%)
Italy	1,166 (10.68%)
Spain	501 (4.59%)
Denmark	622 (5.69%)
Finland	640 (5.86%)
Netherland	516 (4.72%)
Sweden	1,597 (14.63%)
Total	*10,915 (100.00%)*

3.2. Measurement

Table 3 indicates variables providing explanations on description, measurement and data source.

Table 3. Description of variables and measurement

Variable	***Description***	***Measurement***	***Data source***
Ln_TobinQ	Natural logarithm of Tobin's Q	Natural logarithm of the market value of assets divided by the book value of total assets	ORBIS database
OwnConc	Ownership concentration	The sum of the squares of the percentage of shares held by the first three largest shareholders = $[(\text{Votes 1})^2 + (\text{Votes 2})^2 + (\text{Votes 3})^2]$	ORBIS database
CPI	Corruption Perception Index	Corruption measure computed based on 13 different surveys and assessments from 12 different institutions	Transparency International Source
*OwnConc*CPI*	Interaction variable	Two-way interaction term. *OwnConc* and *CPI* are defined above	ORBIS database and Transparency International Source
Ln_DT	Natural logarithm of Disposition time (moderating variable)	365 divided by the ratio between the number of resolved cases in a period and the number of unresolved cases at the end of a period	Cepej report
Size	Natural logarithm of Total Assets	Total Assets in logarithm value	ORBIS database
Leverage	Leverage	Total long-term debt divided by total assets	ORBIS database
GS	Growth Sales	The growth rate of sales	ORBIS database
StkMktCap_GDP	Market Develop	Market capitalization divided by real country GDP	World Bank database

3.2.1. Dependent variable

Following Anderson and Gupta (2009) and Lepore et al. (2017, 2018), our dependent variable is the natural logarithm of *Tobin's Q*, a market-oriented measure resulting from the natural logarithm of the market value of assets divided by the book value of total assets *(Ln_TobinQ)*. The reasons why we decided to adopt *Tobin's Q* can be attributed, at first, to the forward-looking elements of the measure because it is based on stock market price; secondly, it can be used to make a comparative analysis of firms across different industries because it is not affected by accounting requirements (Chakrabarthy, 1986). More generally, market-based measures have been found to be more suitable than accounting-based measures for capturing the financial benefits of non-financial information (Hillman & Keim, 2001).

3.2.2. Independent, moderating and control variables

We proxied the ownership concentration defined as the Herfindahl Index Concentration, previously used by several studies (Li et al., 2008; Maury & Pajuste, 2005) to capture the concentration of the voting rights held by the largest shareholders. We measured *OwnConc* as the natural logarithm of the sum of the squares of the percentage of shares held by the first three largest shareholders. The higher the value of *OwnConc,* the higher power of largest shareholders and the lower the contestability of their power is. Here, we compute the natural logarithm of firm ownership concentration to control for skewness.

We computed the Corruption Perception Index (*CPI*) considering the perceived levels of corruption, as determined by expert assessments and opinion surveys from Transparency International Database. Finally, we included the interaction term *OwnConc*CPI*.

We included several control variables (firm-specific and country-specific) that represent factors influencing the firm's value according to previous contributions (Maury & Pajuste, 2005; Anderson & Gupta, 2009; Lepore et al., 2017, 2018). Among the firm-specific control variables, we include the firm size (*Size*), the firms' default risk proxied by the leverage (*Leverage*), the Growth of Sales (*SG*) that are predicted to find a positive relation with market performance. Among the country-specific control variables, we decided to include both the *StkMktCap_GDP* and *Ln_DT*. The first is obtained as *Market capitalization divided by real country GDP* and is a measure of the levels of equity market development of each country. The second is used to proxy the efficiency of judicial systems (Lepore et al., 2017, 2018) and is a measure of shareholder protection in each country where sampled companies operate.

Variables description is reported in Table 3.

3.3. Empirical model

Our data, with firms embedded in industries and countries, call for hierarchical linear modelling to compensate for clustering at each level (industries, countries) and attendant violations of the OLS assumption of independent and identical distribution (Raudenbush & Bryk, 2002). Thus, we used 3-level hierarchical linear modelling (HLM) with firms nested in industries nested in countries to identify the impact of the *CPI* in the relationship between ownership structure and performance:

$$Performance = \alpha + \beta_1 OwnConc + \beta_2 CPI + \beta_3 OwnConc * CPI + \beta_4 Control + \varepsilon, \quad (1)$$

where:

Performance indicates *Ln_TobinQ,* the market-oriented performance measures we used as a dependent variable;

OwnConc is the concentration ratio showing the ownership concentration measured by the Herfindahl index;

CPI is a measure of corruption;

OwnConc * *CPI* is the interaction effect;

Control indicates the control variables: *Growth Sales (GS)*, *Leverage, Size,* the natural logarithm of *Disposition Time (Ln_DT)* to proxy the efficiency of the judicial system, and *Stock Market Capital to GDP (StkMktCap_GDP)* to proxy for the development of equity market.

The multilevel approach was suggested by the intra-class correlations (ICC) (Bliese, 2000) of 0.08 for countries and 0.38 for industries. Consequently, even though both model specifications, HLM and OLS, yield qualitatively similar results, we focus our discussion on the HLM results due to its superior robustness.

We used robust standard errors to account for possible heteroskedasticity and additional cluster correction of standard errors at the highest level of clustering (countries). The method calculates random intercepts for each nesting level, which in effect control for industry and country effects not captured by the controls specified earlier.

4. EMPIRICAL RESULTS

4.1. Regression analysis

Tables 4 and 5 report the descriptive statistics indicating the number of observations, the mean, the standard deviation and the minimum and maximum value of each variable.

Table 4. Descriptive statistics

Variable	*N. obs.*	*Mean*	*Std. D.*	*Min*	*Max*
Dependent variable					
Tobin's Q	10,915.00	1.113475	2.316595	.01	133.51
Ln_Tobin's Q	10,915.00	-.4408163	1.013004	-4.60517	4.894176
Independent variables					
OwnConc	10,915	6.819681	1.828106	-7.013116	9.21034
CPI	10,915	74.22483	13.64124	39	94
OwnConc*CPI	10,915	501.9073	155.2708	-572.9599	856.5617
I_ShrOwn	10,915	36.58906	24.0482	.03	100
II_ShrOwn	9,213	12.75292	9.383342	.01	50
III_ShrOwn	7,477	7.104541	5.17127	.10	33.33
AO2	10,915	47.35339	27.07986	.03	100
AO3	10,915	52.22015	28.13867	.03	100
Control variables					
Size	10,915	19.42208	2.433286	10.8426	26.76873
Leverage	10,915	.1655412	.4224069	0	36.88462
SG	10,915	.5900505	19.72831	-1.0004	1639.336
Ln_DT	10,915	5.538786	.3967359	4.795791	6.380123
StkMktCap	10,915	77.01169	32.92406	18.95567	145.227

Table 5. The percentage of shares in the hands of the first three shareholders

Variable	*N. obs.*	*Mean*	*Std. D.*	*Min*	*Max*
I_ShrOwn	10,915	36.58906	24.0482	.03	100
II_ShrOwn	9,213	12.75292	9.383342	.01	50
III_ShrOwn	7,477	7.104541	5.17127	.10	33.33
AO2	10,915	47.35339	27.07986	.03	100
AO3	10,915	52.22015	28.13867	.03	100

Table 6. Pearson correlation matrix

	LN_TQ	*Own Conc*	*CPI*	*Own Conc*CPI*	*Size*	*Lev*	*GS*	*LN_DT*	*StkMkt_ GDP*
LN_TQ	1.0000								
OwnConc	-0.0487*	1.0000							
	0.0000								
CPI	0.2249*	-0.1717*	1.0000						
	0.0000	0.0000							
OwnConc*CPI	0.0885*	0.7906*	0.4472*	1.0000					
	0.0000	0.0000	0.0000						
Size	-0.2342*	-0.1137*	-0.0911*	-0.1523*	1.0000				
	0.0000	0.0243	0.0000	0.0000					
Lev	-0.0499*	0.0004	-0.0046	0.0000	0.0522*	1.0000			
	0.0000	0.9675	0.6304	0.9993	0.0000				
GS	-0.0013	-0.0023	0.0001	-0.0004	-0.0064	-0.0018	1.0000		
	0.8950	0.8118	0.9949	0.9636	0.5051	0.8495			
LN_DT	-0.2079*	0.1596*	-0.8431*	-0.3780*	0.0322*	-0.0026	-0.0034	1.0000	
	0.0000	0.0000	0.0000	0.0000	0.0000	0.7880	0.7228		
StkMkt_GDP	0.2067*	-0.1093*	0.5741*	0.2487*	-0.0945*	-0.0012	-0.0131	-0.4604*	1.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.8967	0.1724	0.0000	

*Note: * represent significance at the 5% level*

Table 7 shows the results of our hierarchical regression analysis. For all cases, the $\chi 2$ test is statistically significant, suggesting that the models have explanatory power.

In regressions (1), we regressed the control variables (*Size, Leverage, Growth Sales, Ln_DT, Stock Market Capital to GDP*) on firm performance (Ln_TobinQ), and found that firm size and Stock Market Capital to GDP have a negative and positive effect on Tobin's Q respectively.

Regressions (2) adds the direct effect of ownership concentration *(OwnConc)* on Tobin's Q. Model fit improves, as indicated by the drops in the AIC (Akaike Information Criterion) and in the BIC (Bayesian Information Criterion) and the increase in the log likelihood. The coefficient estimate is negative and significant at the 10% level. This finding supports the idea that more concentrated ownership structure decreases financial performance.

Finally, regression (3) considers Corruption Perception Index (CPI) as a moderating variable. We set the interaction effect between ownership concentration and *CPI (OwnConc * CPI)* to analyze if the corruption level affects the direction and magnitude of the relationship between dependent and explanatory variables.

Table 7. Regression results

Independent variables	***(1) Controls only***	***(2) Direct effect OwnConc***	***(3) OwnConc * CPI***
Ownership Concentration (OwnConc)		-.0177228 (.011261)	.0911339* (.0460253)
Corruption Perception Index (CPI)			.0163535 (.0140063)
OC * CPI			-.0014347** (0005251)
Size	-.062914*** (.0078494)	-.0645076*** (.0078414)	-.0641894*** (.0081194)
Leverage (Lev)	.009268 (.0881241)	.009556 (.088086)	.0101905 (.0878983)
Growth Sales (GS)	-.0000964 (.0003276)	-.000103 (.0003163)	-.0000913 (.0003146)
Ln_DT	-.0204966 (.1495034)	-.0276633 (.1552892)	-.0607705 (.1854328)
Stock Market Capital to GDP (StkMkt_GDP)	.0109304*** (.0010524)	. 0111828*** (.0010022)	.0115835*** (.0012582)
Constant	.0056937 (.774484)	.1597257 (.7718531)	-9443743 (1.754279)
n. observations	10,915	10,915	10,915
AIC	27511.74	27500.62	27485.57
BIC	27577.42	27573.6	27573.14
Log likelihood	-13746.869	-13740.309	-13730.784
p >χ2	0.000	0.000	0.000

This table reports the regressions of LN_TobinQ by considering the most used proxy of ownership concentration (Herfindahl index), translating in the natural logarithms (Own_Conc) for a sample composed by 1,314 firms and a total of 4,776 observations (unbalanced panel) over a seven-year period (2010-2016). Sample companies are listed in Germany, France, Italy, and Spain. The interaction consists of OwnConc multiplied by CPI. GS, Size, Lev, CPI, LN_DT, and StkMkt_GDP are control variables. Robust standard errors are provided in parentheses under the estimated coefficient.

****, **, *, and + represent significance at the 0.1, 1, 5, and 10% levels, respectively.*

The interaction coefficient estimate is negative and statistically significant *($\beta = -0.0014347$, $p < 0,01$)*. Supporting our Hypothesis, this implies that the higher the level of corruption perceived in a national economy, the stronger the relationship between ownership concentration and firm performance. The relationship mentioned above is positive and stronger for firms operating in countries with high levels of corruption.

Our results in the model (2) do not show the existence of a significant relationship between ownership concentration (OC) and performance (TQ). The regression coefficient (2) of *Own_Conc* variable is not statistically significant.

The interaction regression coefficient (3) instead is negative and significant. The presence of a significant interaction indicates that the effect of the predictor *(OwnConc)* on the outcome *(Ln_TQ)* depends on the value of the other predictor (CPI). These results support our hypothesis showing that higher is the level of perceived corruption (CPI) from economic operators in a country, stronger is ownership concentration *(Own_Conc)* and performance relationship *(TQ)* (graphically the line is positively inclined).

In order to further elaborate the analysis on the functioning of the relationships investigated in contexts characterized by a differentiated corruption perception level, we conducted a simple slope analysis (Aiken & West, 1991).

This analysis allows verifying if and how the independent variable used in the regression *(OwnConc)* on the dependent variable *(Ln_TQ)* changes following the value of moderating variable (CPI) that is the level of corruption perceived. As we hypothesized the relationship between ownership concentration and performance is moderated by the level of the Corruption Perception Index.

Analysing these findings with reference to *CPI* values of selected countries (see table below), it emerges that in Italy, Spain and France where CPI values are lower, that means higher levels of perceived corruption, the relationship investigated between *Own_Conc* and *TQ* is positive, while in the other countries of the sample, where the perceived corruption level is lower, the mentioned relationship seems negative.

It seems an important result because while non-crossover or ordinal interactions (i.e., the effect of one predictor on the outcome is in the same direction but stronger for some values of the other predictor compared to others) are more typical, instead type of crossover (i.e., disordinal) interactions that involve effects in the opposite direction like our result are not observed frequently (Rogers, 2002).

Table 8. The Corruption Perception Index in European countries

Year	*CPI*							
	Germany	*Spain*	*France*	*Italy*	*Denmark*	*Finland*	*Netherland*	*Sweden*
2010	79,00	61,00	68,00	39,00	93,00	92,00	88,00	92,00
2011	80,00	62,00	70,00	39,00	94,00	94,00	89,00	93,00
2012	79,00	65,00	71,00	42,00	90,00	90,00	84,00	88,00
2013	78,00	59,00	71,00	43,00	91,00	89,00	83,00	89,00
2014	79,00	60,00	69,00	43,00	92,00	89,00	83,00	87,00
2015	81,00	58,00	70,00	44,00	91,00	90,00	84,00	89,00
2016	81,00	58,00	69,00	47,00	90,00	89,00	83,00	88,00
2017	81,00	57,00	70,00	50,00	88,00	85,00	82,00	84,00
Mean	*79,75*	*60,00*	*69,75*	*43,38*	*91,13*	*89,75*	*84,50*	*88,75*

We address several further tests for robustness to increase confidence in our findings. Robustness analysis is not presented in the paper but they are available from the authors upon request.

5. DISCUSSION AND CONCLUSIONS

One of the key questions emerging in corporate governance studies in the last decade is to understand how much country-level and firm-level variables matter for the elaboration of a global theory of corporate governance (Zattoni et al., 2017; Kumar & Zattoni, 2013).

This study tries to bridge this gap, combining results from the literature on corporate governance at firm-level with insights from the national governance systems literature. As such our study provides a significant contribution to the literature on the interaction between quality of institutional setting and ownership concentration as corporate governance mechanism. While many studies analyse the effect corruption plays at macro-economic level, discouraging investments and economic development, to the best of our knowledge, ours is the first study examining at firm-level the interaction effects between ownership concentration and corruption for European countries.

In the contexts characterized by a higher level of perceived corruption as, for example, Italy and Spain, the relationship between ownership concentration and performance seems to be positive and stronger. This finding is in line with literature claiming that ownership structure is an effective internal corporate governance mechanism in countries characterized by weaker institutional settings (Lepore et al., 2017; Peng et al., 2017; Guillen & Capron, 2016; Boubakri et al., 2005; La Porta et al., 2000; Shleifer & Vishny, 1997).

A higher level of perceived corruption contributes to deteriorating the quality of the institutional setting where businesses operate, cutting the attraction of potential investors, so that causing a significant loss of resources (financial, expertise, know-how) for those businesses. By so doing corruption helps to incentive and strengthen ownership concentration of firms operating in a country, setting an obstacle to

progressive separation between ownership and control, that is necessary for firm dimensional growth and for access to business opportunities, that otherwise would be precluded for concentrated ownership firms.

In contexts where the corruption is lower (High CPI), like Denmark, Finland and Sweden in our sample, the relationship analysed is negative, meaning that the better institutional setting favours the entry of new potential investors and the firm development.

Our result confirms the literature that stated that ownership concentration is a substitute of the inefficiencies of the institutional setting (Park et al., 2017; Demsetz & Lehn, 1985).

Our findings show that corruption plays an important role as a moderating variable that can influence the form and the magnitude of the ownership structure-performance relationship. Businesses operating in contexts characterized by high level of corruption prefer to concentrate their ownership and are less sensitive to legislator pressure that pushes toward transparency and accountability for incentive foreign investors. This evidences how internal mechanisms of governance contribute to mitigate and substitute corruption effects, allowing them to achieve positive performance.

The results we obtained using multilevel hierarchic regression, as recently suggested by some scholars (Kumar & Zattoni, 2018; Zattoni et al., 2017; Dalton & Dalton, 2014), confirm the existence of a substitution effect between internal governance mechanisms, first of all ownership concentration, and the external mechanisms, that determine the quality of institutional setting, in particular corruption. In this sense, our findings suggest integrating corporate governance studies with neo-institutional perspective (Peng et al., 2017; Jiang & Peng, 2011a; Lounsbury & Zhao, 2013).

The study offers interesting insight for corporate governance scholars since it evidences the necessity to consider context variables that strongly impact internal governance mechanisms functioning.

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