The Effect of Ownership Structure on Corporate Financial Performance in the Czech Republic[1]

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Abstract

This paper seeks to examine the effect of ownership concentration on corporate financial performance in the Czech Republic. The study uses linear regression models and analyses data gathered from medium and large businesses in order to test the aforementioned relation.

Using data from a sample of over 5,000 Czech businesses between 2010 and 2012, the study finds that ownership concentration expressed as the Herfindahl index has a weak, but statistically significant negative effect on corporate performance represented by return on assets. However, the data do not conclusively reveal whether the effect is monotonic or inverted U-shaped.

Keywords: *ownership structure, ownership concentration, corporate financial performance, Czech Republic*

JEL Classification: G32

Introduction

Attempts to comprehend which ownership structure is effective or ineffective and what its implications are go back as early as the 1930s, when Berle and Means (1932) saw professional managers gaining more responsibility and having interests likely misaligned with those of shareholders. This issue of separation of ownership and control, as Dalton et al. (2003, p. 13) claim, became "a central focus of corporate governance". Weiss and Nikitin (1998, p. 1) confirm the importance of this matter by proclaiming it "one of the most important problems" [in a modern capitalist economy]. Thomsen and Pedersen (2000) and Baghdasaryan

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and La Cour (2013) continue by stating that effective ownership structure has implications on strategy, performance and competitiveness of a business.

Accepting the premise of a conflict between owners and managers, Heugens, van Essen and van Oosterhout (2009) assume that owners may address this matter using two sets of instruments – either external corporate governance mechanisms, grounded in legal system and market characteristics, or internal tools. These are again twofold, as Dalton et al. (2003) indicate – owners can either align their interests by giving managers a share in a company or they can control them more efficiently by concentrating ownership. According to Heugens, van Essen and van Oosterhout (2009), the latter is the best protection against both management opportunism and expropriation by larger shareholders.

Even though researchers may concur in the significance of ownership structure and its concentration, they have not been able to provide unanimous conclusions and often present contradictory findings regarding the manner in which concentration affects performance. Furthermore, most of the research originates in Anglo-Saxon settings, Western Europe or Asia, while the current situation in Central and East Europe is neglected.

Therefore, the aim of this paper is to analyse the effect of ownership concentration on corporate financial performance of Czech medium and large enterprises. This work extends the previous research with the same focus, which concentrates only on the 1990s and the early 2000s. In addition to the up-to-date timeframe, the research also analyses data from a significantly larger sample than most other studies.

The main finding of the research is that there exists a statistically significant negative effect of ownership concentration on corporate financial performance; therefore, the higher the concentration, the worse the performance. However, certain results suggest that the effect may be curvilinear, i.e. the performance again diminishes once the concentration falls below a specific level. Furthermore, it proves certain other factors to be significant determinants of financial performance, e.g. the presence of a foreign owner, previous growth, the company's size and the presence of public and state owners or the industry the company operates in.

The contribution of the study can be seen primarily in providing a current overview of the way ownership concentration affects corporate performance in the Czech environment and in empirically confirming the negative consequences of having highly concentrated ownership structure. Admittedly, the ascertained effect is rather weak and should not be exaggerated; however, the advantages of optimized ownership structure should not be underestimated, as it gains from finance, know-how or contacts brought by other shareholders or benefits of mutual monitoring among the owners.

The remainder of the paper is organized as follows: firstly, the relevant literature is reviewed; secondly, the methodology of the research and the data are described; thirdly, the empirical results are presented; finally, the paper is concluded by the discussion of results and their implications.

1. Literature Review

1.1. Ownership Concentration and Performance in Theory

Analysing the literature focusing on ownership concentration, i.e. the variable describing "how many different parties own which share of a firm" (Weiss and Hilger, 2012, p. 729), and corporate financial performance, there is no consensus on the ultimate effect (García-Meca and Sanchez-Ballesta, 2010; Baghadasaryan and La Cour, 2013), probably as the relation is "complex and empirically ambiguous" (Earle, Telegdy and Kucsera, 2005, p. 254). However, as the meta-analysis of Heugens, van Essen and van Oosterhout (2009) reveals, there are three ways in which the effect may manifest: positive linear, negative linear and curvilinear. Furthermore, following Demsetz (1983), there may be no such effect at al.

1.2. Positive Effects

The notion that the level of ownership concentration affects corporate performance in a positive linear manner was already proposed by Berle and Means (1932). Observing the growing separation between ownership and control and managers gaining more and more power and responsibilities, they argued that diffused ownership strengthens the position of managers. Built upon this presumption, the agency theory was derived.

Jensen and Meckling (1976, p. 5) described the agency relationship as a contractual relation between principal(s) and another person (agent) leading to "perform[ing] some service on [the principal's] behalf which involves delegating some decision-making authority to the agent". They further argue that both principals and agents are utility maximizers and have different interests – owners seek maximal profit; managers, on the other hand, benefit from their salary and amenities of the office. As a result, agency costs arise.

Agency costs can be attributed to several factors. Bøhren and Ødegaard (2001) assert that the misalignment of interests between managers and owners leads to insufficient effort (shirking), abuse of private benefits (e.g. excessively high wages) and entrenchment on the part of managers. This leads to suboptimal performance of the company or even value-destructing outcomes (Morck, Shleifer and Vishny, 1988; Bøhren and Ødegaard, 2001). These possible issues

can be leveraged further by information asymmetry, which emerges in principal-agent relationships (García-Meca and Sanchez-Ballesta, 2010).

Even though Jensen and Meckling (1976) state that agency costs can never be eliminated, they provide owners with 3 strategies how to minimize them: (1) bonding, (2) incentive schemes and (3) monitoring. While the first two options aim to better align the interests of both parties, either by internal motivation or external incentives, the third one helps to enforce owners' interests. To be able to do so, owners must have sufficient authority, which depends on the size of their share and, by extension, their concentration.

The researchers (e.g. Demsetz and Lehn, 1985; Claessens and Djankov, 1999; or Baghadasaryan and La Cour, 2013) generally agree with the fact that diffused ownership enlarges agency problems and, on the contrary, concentrated ownership mitigates it. Concentrated ownership grants the owners both power and motivation to control the management more closely and enforce activities leading to optimal performance.

Sanchez-Ballesta and García-Meca (2007) conclude that in the situation when monitoring improves decisions made by managers and no other effects are present, ownership concentration has a positive linear effect on corporate performance.

1.3. Negative Effects

While the traditional perspective advocates the positive effects of ownership concentration, researchers have also observed the negative effects. However, the review of available literature suggests that there is rather little evidence of strictly negative influence throughout the whole range of ownership concentration.

As Bøhren and Ødegaard (2001) bring to attention, the literature proposing a positive effect of ownership concentration on performance implicitly assumes that owners are competent enough to lead the business to better performance. It also implies that there are no self-interests of the owners and that the interests of all owners are aligned. However, these assumptions are very unlikely to be universally true in the real world.

Even though it is mostly argued that it is managers who divert resources for their own interests and worsen the corporate performance (Lskavyan and Spatareanu, 2006; Sanchez-Ballesta and García-Meca, 2007), there can also be strong owners who abuse their control in order to maximize their private benefits (Edwards and Weichenrieder, 2004; Grosfeld and Hashi, 2007). As Shleifer and Vishny (1997, p. 759) point out, when "the large owners gain nearly full control, [they] prefer to use firms to generate private benefits of control that are not shared by minority shareholders". This presumption represents the core of the expropriation hypothesis. Examples of such behaviour are tunnelling, i.e. transferring assets

outside the business for private benefits (Heugens, van Essen and van Ooster-hout, 2009), profit shifting, i.e. exploiting relations with other controlled businesses (Edwards and Weichenrieder, 2004) or appointing oneself as a manager receiving a high salary, abusing the amenities of the office or neglecting duties (Demsetz, 1983). As Hall and Jörgensen (2013) summarize, all the above-mentioned activities endanger minority shareholders and impair corporate performance.

In addition to the situation when controlling shareholders abuse their power in ways which can be conceived as at least unethical, if not illegal, the negative effects of highly concentrated ownership can manifest themselves because of rationally understandable reasons. Large shareholders are exposed to larger risks and face higher opportunity costs (Bøhren and Ødegaard, 2001); therefore, they may be inclined to enforce severe tight control, which slows down managers' reactions, restricts them from doing their job properly or limits their initiative (Grosfeld and Hashi, 2007; Krivogorsky and Grudnitski, 2010).

1.4. Non-Monotonic Curvilinearity

Up to this point, the relation between ownership concentration and corporate performance was presented as linear or at least monotonic. However, there is no reason to deem the factors supporting either positive or negative impact of high concentration as mutually exclusive, i.e. that they cannot occur at the same time. The resulting non-monotonic curvilinear function, whose shape can be likened to "a reversed U", represents an intuitive synthesis of the above-mentioned effects.

The non-monotonic function of ownership concentration and corporate performance suggests that companies with dispersed ownership face significant agency costs or suffer from misaligned shareholder interests, but simultaneously, businesses with highly concentrated ownership experience a downswing in performance, as dominant shareholders abuse their position. In between these extremes, performance improves when the ownership becomes less dispersed and better monitoring is instituted, or when concentration is reduced and the dominant shareholder is prevented from any misconduct.

1.5. Endogeneity

The previous sections outlined the effect of ownership concentration on corporate performance as systematic, being either positive, negative or non-monotonic. However, Demsetz's (1983) study as well as subsequent studies by Demsetz and Lehn (1985) or Demsetz and Villalonga (2001) observed significant variations in the levels of ownership concentration and its relation to corporate performance and found no convincing proof of any relation between the two variables.

These authors argue that ownership concentration is endogenous, i.e. that it "is the outcome of bargaining among economic agents" (Cabeza-García and Gómez-Ansón, 2011, p. 413). In other words, it reflects the decisions of shareholders and capital markets. Demsetz and Lehn (1985) believe that these decisions ultimately shape a structure that optimizes the business's value and performance in present internal and external conditions. In such a situation, when ownership concentration is optimized, there would be no positive or negative effects on corporate performance (Earle, Telegdy and Kucsera, 2005).

Endogeneity of ownership structure implies that there is a reverse effect and the corporate performance changes incentives to hold shares, as well as there are certain hidden variables that affect both ownership structure and performance (Sanchez-Ballesta and García-Meca, 2007; Farooque et al., 2007). Thomsen, Pedersen and Kvist (2006) explain the former with a feedback in the relation, which can be either positive or negative. Positive feedback occurs when better performance leads to higher concentration, as shareholders choose to remain in control of a successful company and strengthen their positions. Negative feedback, that is better performance leading to lower concentration, appears when shareholders decide to sell their shares and profit from the company's high value.

The awareness of possible endogeneity is very important, because as Cho (1998, p. 120) warns, "implicit assumption of exogeneity (…) leads to misinterpretation of the results." However, its importance may vary. As Hall and Jörgensen (2013) mention, it is more important in countries where stock markets are liquid. Hu and Izumida (2008) go even so far as to claim that ownership structure is exogenous in illiquid markets. Considering the characteristics of the Czech economy, where the capital market is illiquid and only a very small number of companies are publicly traded, this paper will assume ownership structures to be exogenous and will not control for endogeneity.

1.6. Research in the Czech Republic

Before the evidence regarding the relation between ownership concentration and corporate performance is discussed, it needs to be mentioned that Czech businesses tend to have rather concentrated ownership, as confirmed by studies reviewed by Hučka et al. (2012). For instance, in 2001, in 74 publicly traded Czech companies, a 69% share on average was held by the largest shareholder and an 89% share was held by the five largest shareholders (Klapper, Laeven and Love, 2006). In 2004, of the 59 companies listed on the Prague stock exchange, 80% had a majority owner (Roubíčková, 2006, in Hučka et al., 2012). In the period of 2003 to 2008, in 71 Czech companies, the average share held by the largest shareholder was 56.7%; the share held by the three biggest shareholders was

80.7%, which is higher than the same statistic in Hungary or Poland (Aguilera et al., 2012). Brzica (2006), among others, provided a comparison of the Czech and Slovak Republics and confirmed the ever-growing trend of ownership concentration.

To put these numbers in context, Demsetz and Villalonga (2001), using a sample of 223 US firms from 1980 – 1981, report that in case of 48% of those companies, the share held by the five largest shareholders did not exceed 20%. Weiss and Hilger (2012) observe that in 2007, the average share held in the largest 150 companies by the five largest shareholders was 25.84% in the USA, 33.21% in the United Kingdom and 49.12% in Germany.

When it comes to the actual research of the effect of the ownership concentration on corporate performance in the Czech Republic, it fails to present an up-to-date picture of the situation. Of the nine studies available (Částek, 2013; Claessens and Djankov, 1999; Grosfeld and Hashi, 2007; Hanousek, Kocenda and Svejnar, 2007; Hanousek, Kočenda and Mašika, 2012; Harper, 2001; Lskavyan and Spatareanu, 2006; Makhija and Spiro, 2000; Weiss and Nikitin, 1998) only two provide an analysis of the situation in the 2000s and most of them analyse the unstable environment during or shortly after the privatization.

Similarly to the research abroad, the outcomes of studies from the Czech Republic are not unanimous, even though no study from the Czech settings reveals a strictly negative effect of ownership concentration on corporate performance.

Apart from Harper (2001), who looks into the relationship between ownership concentration and corporate performance only briefly, studies from the first half of the 1990s found a positive (Weiss and Nikitin, 1998) or non-monotonic effect. While Claesens and Djankov (1999) observe profitability peaking when concentration reaches 60 – 70%, Mahkija and Spiro (2000) register the peak in the 30 – 40% range. Both studies are based on a fairly large sample of companies; however, the difference may be caused by the different time period (1991 in Makhija and Spiro, 2000; and 1992 – 1997 in Claessens and Djankov, 1999).

Studies from the second half of the 1990s provide an even more unclear picture. While Hanousek, Kocenda and Svejnar (2007) reveal a positive effect of ownership concentration on performance, Lskavyan and Spatareanu (2006) and Grosfeld and Hashi (2007) claim that the effect is statistically insignificant. They, however, differ in further findings – Grosfeld and Hashi (2007) observe a significant reverse positive effect, i.e. a claim that corporate performance positively affects ownership concentration, whereas Lskavyan and Spatareanu (2006) believe that the reverse effect is insignificant.

The most recent data are provided by Částek (2013) and in a longitudinal study by Hanousek, Kočenda and Mašika (2012). Both studies work with ordinal scales measuring ownership concentration, but they significantly differ in the measure

of corporate performance – Částek (2013) utilizes ROA and growth of assets, Hanousek Kočenda and Mašika (2012) use an efficiency model with a Cobb--Douglas function. Both studies reveal a positive effect, even though Částek (2013) observes it only when using growth of assets as the measure of performance.

With the exception of Grosfeld and Hashi (2007), and Lskavyan and Spatareanu (2006), who directly analysed the possibility of endogeneity or reverse relation, only Claessens and Djankov (1999) explicitly mention controlling for endogeneity, which, as they disclose, makes the effect of concentration on profitability insignificant.

2. Data and Methodology

2.1. Model and Hypotheses

The key assumption of the model is that ownership concentration affects corporate financial performance. However, the relation between the two variables cannot be perceived as isolated, as there are other variables affecting them or moderating their relation. Therefore, the model accounts also for other industry- and business-level variables. The business-level factors are accounted for in more detail, considering the effects of the firm size, previous growth, owner type, and legal form. As such, the model captures the following hypotheses:

H1: There is an effect of ownership concentration on corporate financial performance.

H2: There is an effect of owner type on corporate financial performance.

These hypotheses presume that different owner types have different impacts on the performance of the business. The owners can by divided into (1) domestic and foreign, or (2) based on the legal status (institution type) of the owner.

H3: There is an effect of business size on corporate financial performance.

H4: There is an effect of previous growth on corporate financial performance.

H5: There is an effect of industry on corporate financial performance.

Hypotheses 3 to 5 account for two of the business-level factors, i.e. size and previous growth, and industry-level factors, all of which are assumed to have an influence on corporate performance.

To test these hypotheses, a following statistical model utilising linear regression with the least squares estimation is introduced:

$$CFP_i = \beta_0 + \beta_1 \times OC_i + \beta_2 \times Size_i + \beta_3 \times Growth_i + \beta_4 \times Foreign_i$$
$$+ \beta_{5t} \times InstitutionType_{ti} + \beta_{6u} \times Industry_{ui} + e_i,$$

where the *i* index denotes the respective case (i.e. the particular business), the *s* index represents each dummy variable for the largest owner share type, the *t* index represents each dummy variable for institutional owner type and the *u* index indicates each dummy variable for included industries.

A hierarchical regression with block wise entry is utilized, where concentration, size and growth are entered in the first block, owner type dummies in the second and industry dummies in the third.

2.2. Variables

When measuring ownership concentration, the Herfindahl index is applied, following e.g. Demsetz and Lehn (1985) or Bøhren and Ødegaard (2001). The Herfindahl index, as the sum of the squared shares, is arguably the most suitable, as it is capable of reflecting differences in ownership structure better than other measures. Its calculation is limited to the ten largest shareholders. Two variants of the model, measuring the concentration two or three years prior to the time point of performance measurement are used, as these shifts proved to be superior to one- or four-year shifts in terms of coefficients of determination.

When measuring corporate financial performance, profitability indicators are utilized. The rationale behind this decision consists in their availability, applicability to a significantly larger group of businesses and comparability. Furthermore, profitably indicators are typically utilized in research focusing on Czech settings, as capital market characteristics (particularly their illiquidity) prevent employing market-based measures. Namely, return on assets (ROA) based on net operating profit before taxes is used, as it proved to be superior to return on sales or return on equity, when the coefficients of determination are concerned.

Owner types can be distinguished in different manners. The differentiation between domestic and foreign entities is used as the first method. The presence of a foreign shareholder is acknowledged once their share surpasses 33%, i.e. they can be described as a blocking minority shareholder. Secondly, owners are classified according to their legal status or institution type. The research combines studies by Bøhren and Ødegaard (2001), Grosfeld and Hashi (2007) and Hanousek, Kocenda and Svejnar (2007) and puts forward the following categories: individuals (natural persons), business entities, state and public institutions and non-profit non-governmental organizations. Again, the presence of a certain shareholder type is acknowledged once they reach the criterion of a blocking minority owner.

The firm size is measured as the value of assets (as e.g. in Demsetz and Lehm, 1985; Grosfeld and Hashi, 2007; Krivogorsky and Grudnitski, 2010). Previous growth is measured, following Gedajlovic and Shapiro (1998) or Edwards and Weichenrieder (2004), as growth of sales. Regarding the legal form, the data are

available for limited liability companies (in Czech "s. r. o.") and public limited companies (in Czech "a. s."). Considering industry-level factors, the research simplifies them into a classification of companies based on the industry they operate in, following Classification of Economic Activities (CZ-NACE).

2.3. Descriptive Statistics

There are three datasets available, covering years 2010, 2011 and 2012. The samples are defined as companies constituted in the Czech Republic as limited liability companies (in Czech "s. r. o.") and public limited companies (in Czech "a. s.") and reporting a size larger than 50 employees.

The datasets with sizes of 5,019; 5,375 and 5,335 businesses respectively can be perceived as very similar. In all the samples, the ratio of limited liability companies ("s. r. o.") to public liability companies ("a. s.") is roughly 3:1. More than a half of the companies in all the samples have a single owner and only slightly more than 10% of businesses have no majority owner. The level of concentration reflected by the Herfindahl index averages between 7,500 and 8,000 for all samples. The reported numbers can be likened to a situation where there are two owners with shares of 85% and 15%. There are also strong similarities regarding the number of businesses with a foreign owner (approximately 35% in all samples). Some 38% of the companies have an individual (natural person) owner; only 15% report an owner who can be described as a business entity.

When it comes to the financial performance, the samples are again very similar. The average and median ROA is rather consistent, as the samples reach the mean values of 6.9 – 7.8% and medians of 5.4 – 6.2%. The average business size for all samples is in the area of approximately CZK 500,000,000 (circa EUR 18,500,000), the median values are circa CZK 140,000,000 (ca. EUR 5,200,000).

The industry classification also reveals the same trends in all samples. Some 43% of the businesses belong to CZ-NACE section C (Manufacturing industry), approximately 19% are classified as section F (Construction). From the remaining sections, only sections G (Wholesale and retail) and M (Professional, scientific and technical activities) contain more than 5% of the sample companies.

3. Results

Generally, the adequacy of all linear regression models is very low (adjusted coefficients of determination R^2 range between 4.1% and 4.8%), suggesting that corporate financial performance is mostly determined by factors not installed in the model. All models nevertheless exhibit p-values lower than 0.001; therefore, the null hypotheses can be rejected.

Hypothesis 1 states that *there is an effect of ownership concentration on corporate financial performance*. Considering the 2010 and 2011 datasets, ownership concentration is, on the 95% level of confidence, proved to be a statistically significant predictor of corporate financial performance with a standardized Beta around –0.04. However, the 2012 dataset behaves differently and rejects the hypothesis of ownership concentration being a significant predictor.

Based on the first two datasets, it is possible to claim that there is a negative effect of concentration on performance. As the sample exhibits generally very high concentration and strong representation of single-owner businesses, the test does not provide a clear answer as to whether there is a decline in performance when the concentration falls below certain levels. A way to partially examine that is to use t-tests testing the differences in means.

For 2010 and 2011 datasets, the t-tests prove that there is a difference between single owner ($M = 0.075$, SD 0.11) and majority owner ($M = 0.083$, SD 0.10) businesses in their performance ($t(4182) = –2.71$, $p <0.01$). Majority owner enterprises have a higher ROA mean. Although the means of ROA for blocking minority ($M = 0.077$, $SD = 0.09$) or legal minority ($M = 0.076$, $SD = 0.10$) businesses are lower than for majority owner businesses, t-tests do not confirm the difference on a statistically significant level.

However, they cannot prove the difference between single owner and blocking minority owner businesses either. This would suggest the existence of the "reverse U" relation.

Hypothesis 2 states that *there is an effect of owner type on corporate financial performance*. Discussing the presence of a foreign owner, the results are unanimous – all models, regardless of the dataset, prove the presence of a foreign owner to be a statistically significant predictor (p-values less than 0.001) with a standardized Beta around +0.09.

Examining the institutional classification (individual, business entity, public and state, NGO), the difference between the 2010/2011 and 2012 datasets surfaces again. The models for the former datasets prove all individual, business entity and public and state ownership to be statistically significant predictors.

However, unlike the individual and business entity ownership with standardized Beta coefficients of ca. +0.03 to +0.04 and +0.06 to +0.09 respectively, the public and state ownership is associated with a negative effect and standardized Beta coefficient of approximately –0.065. It is worth mentioning that the negative effect of public and state owners is also significant in the 2012 dataset. The presence of NGO owners is insignificant in all datasets, resulting from their low representation (by 8 or 9 cases).

T a b l e 1

Regression Analysis (OLS) for Ownership Concentration with 2-year Shift

	Variable	2010			2011			2012		
		Beta	t–value	VIF	Beta	t–value	VIF	Beta	t-value	VIF
Model 1	(Constant)		20.943			20.903			16.569	
	Own. Conc. HI(10)	−.029*	−2.022	1.024	−.022##	−1.594	1.021	.009	.637	1.019
	Size	−.044**	−3.127	1.020	−.044***	−3.204	1.020	−.028*	−2.039	1.019
	Growth	.063***	4.431	1.005	.095***	6.983	1.001	.055***	4.051	1.001
Adjusted R2			.006			.011			.003	
F-value			11.180***			20.645***			7.066***	
Model 2	(Constant)		16.089			16.890			14.138	
	HI(10)	−.044**	−2.834	1.223	−.046**	−3.088	1.212	−.020#	−1.320	1.211
	Size	−.048***	−3.322	1.054	−.054***	−3.897	1.059	−.043**	−3.090	1.058
	Growth	.066***	4.708	1.007	.090***	6.687	1.006	.051***	3.744	1.004
	Foreign	.091***	4.746	1.860	.103***	5.544	1.889	.107***	5.738	1.898
	Individual	.083***	4.362	1.857	.055***	2.995	1.877	.020	1.082	1.872
	Business Entity	.039*	2.441	1.293	.045**	2.908	1.314	.021	1.329	1.335
	State & Public	−.045**	−3.032	1.143	−.047***	−3.250	1.135	−.047***	−3.267	1.136
	NNO	−.006#	−.411	1.009	−.021##	−1.581	1.009	−.023†	−1.653	1.007
Adjusted R2			.015			.021			.015	
F-value			10.813***			15.714***			11.247***	
Model 3	(Constant)		14.775			16.085			14.169	
	HI(10)	−.040**	−2.595	1.235	−.043***	−2.916	1.224	−.019	−1.279	1.222
	Size	−.043**	−2.950	1.119	−.051***	−3.610	1.138	−.039**	−2.754	1.144
	Growth	.061***	4.359	1.030	.087***	6.471	1.024	.043***	3.204	1.012
	Foreign	.086***	4.489	1.914	.093***	5.000	1.950	.094***	5.022	1.962
	Individual	.089***	4.682	1.894	.062***	3.382	1.916	.029	1.596	1.912
	Business Entity	.033*	2.090	1.313	.043**	2.761	1.334	.019	1.233	1.351
	State & Public	−.064***	−3.826	1.466	−.064***	−4.038	1.430	−.056***	−3.508	1.436
	NNO	−.006	−.445	1.042	−.020	−1.437	1.059	−.020	−1.502	1.038
	NACE A	.013	.948	1.039	−.008	−.609	1.037	−.015	−1.131	1.035
	NACE B	.003	.242	1.012	.005	.378	1.018	.001	.056	1.025
	NACE D	.009	.605	1.133	.003	.222	1.131	−.003	−.203	1.148
	NACE E	.053***	3.460	1.232	.054***	3.688	1.216	.024†	1.643	1.212

NACE E	.053***	3.460	1.232	.054***	3.688	1.216	.024†	1.643	1.212
NACE F	−.024	−1.586	1.160	−.043***	−2.952	1.170	−.094***	−6.553	1.162
NACE G	−.006	−.441	1.082	.001	.091	1.084	−.007	−.519	1.078
NACE H	−.066***	−4.716	1.032	−.066***	−4.845	1.031	−.058***	−4.298	1.029
NACE I	.087***	6.183	1.037	.079***	5.830	1.036	.092***	6.766	1.036
NACE J	.003	.195	1.047	.010	.759	1.050	.025†	1.810	1.044
NACE K	−.014	−1.035	1.024	−.023†	−1.722	1.022	−.016	−1.208	1.028
NACE L	.066***	4.688	1.044	.067***	4.902	1.043	.068***	5.003	1.046
NACE M	.088***	6.136	1.079	.049***	3.534	1.079	.072***	5.160	1.079
NACE N	−.012	−.863	1.003	−.013	−.941	1.003	−.006	−.413	1.002
NACE O	.010	.725	1.031	−.007	−.499	1.052	−.014	−.997	1.029
NACE P	−.013	−.898	1.073	−.016	−1.133	1.074	−.026†	−1.849	1.076
NACE Q	−.028*	−1.995	1.059	−.017	−1.265	1.055	−.015	−1.134	1.047
Adjusted R2	.041			.043			.048		
F-value	10.016***			11.037***			12.265***		

Note: †p < .10, *p < .05, **p < .01, ***p < .001.

Source: Authors.

T a b l e 2

Regression Analysis (OLS) for Ownership Concentration with 3-year Shift

	Variable	2010			2011			2012		
		Beta	t-value	VIF	Beta	t-value	VIF	Beta	t-value	VIF
Model 1	(Constant)		21.044			20.861			16.715	
	Own. Conc. HI(10)	−.028*	−1.961	1.024	−.019	−1.378	1.022	.009	.651	1.020
	Size	−.045**	−3.146	1.019	−.044***	−3.229	1.021	−.028*	−2.042	1.019
	Growth	.063***	4.444	1.006	.095***	6.978	1.001	.055***	4.051	1.001
Adjusted R2			.006			.011			.003	
F-value			11.098***			20.438***			7.072***	
Model 2	(Constant)		16.181			16.744			14.238	
	HI(10)	−.043***	−2.788	1.218	−.042**	−2.808	1.210	−.019	−1.303	1.213
	Size	−.048***	−3.331	1.053	−.054***	−3.904	1.059	−.043**	−3.087	1.058
	Growth	.067***	4.735	1.009	.090***	6.686	1.006	.051***	3.744	1.004
	Foreign	.091***	4.734	1.863	.101***	5.446	1.882	.107***	5.731	1.903
	Individual	.084***	4.383	1.861	.055**	2.960	1.875	.020	1.089	1.873
	Business Entity	.038**	2.413	1.289	.044**	2.841	1.312	.021	1.326	1.336
	State & Public	−.045**	−3.029	1.144	−.047***	−3.292	1.135	−.047***	−3.264	1.137
	NNO	−.006	−.412	1.009	−.022	−1.593	1.009	−.023†	−1.652	1.007
Adjusted R2			.015			.021			.015	
F-value			10.780***			15.503***			11.241***	
Model 3	(Constant)		14.868			15.914			14.288	
	HI(10)	−.039*	−2.550	1.231	−.038**	−2.590	1.221	−.019	−1.313	1.224
	Size	−.043**	−2.959	1.119	−.052**	−3.623	1.139	−.039**	−2.749	1.144
	Growth	.061***	4.381	1.031	.087***	6.469	1.024	.043***	3.205	1.012
	Foreign	.086***	4.478	1.920	.091***	4.887	1.944	.094***	5.032	1.965
	Individual	.090***	4.701	1.898	.062***	3.347	1.915	.030	1.605	1.913
	Business Entity	.033*	2.062	1.309	.041**	2.686	1.333	.019	1.241	1.352
	State & Public	−.064***	−3.831	1.466	−.065***	−4.077	1.430	−.056***	−3.499	1.436
	NNO	−.006	−.446	1.042	−.020	−1.452	1.059	−.020	−1.499	1.038
	NACE A	.014	.959	1.039	−.008	−.592	1.037	−.016	−1.142	1.036
	NACE B	.003	.249	1.012	.005	.377	1.018	.001	.056	1.025
	NACE D	.009	.608	1.133	.003	.221	1.131	−.003	−.202	1.148

NACE E	.053***	3.475	1.231	.054***	3.686	1.216	.024†	1.646	1.212
NACE F	−.023	−1.569	1.160	−.043**	−2.948	1.170	−.094***	−6.556	1.162
NACE G	−.006	−.440	1.082	.001	.082	1.084	−.007	−.525	1.078
NACE H	−.066***	−4.704	1.033	−.066***	−4.854	1.031	−.058***	−4.289	1.029
NACE I	.087***	6.176	1.037	.079***	5.831	1.036	.092***	6.772	1.036
NACE J	.003	.203	1.047	.010	.763	1.050	.025†	1.811	1.044
NACE K	−.014	−1.024	1.024	−.023†	−1.737	1.022	−.016	−1.210	1.028
NACE L	.066***	4.701	1.044	.067***	4.908	1.043	.068***	4.998	1.046
NACE M	.088***	6.150	1.080	.048***	3.495	1.078	.072***	5.166	1.080
NACE N	−.012	−.861	1.003	−.013	−.942	1.003	−.006	−.413	1.002
NACE O	.010	.727	1.031	−.007	−.497	1.052	−.014	−.996	1.029
NACE P	−.013	−0.883	1.073	−.016	−1.142	1.074	−.026†	−1.848	1.076
NACE Q	−.028*	−1.989	1.059	−.017	−1.262	1.055	−.016	−1.138	1.047
Adjusted R2	.041			.043			.048		
F-value	10.005***			10.959***			12.268***		

Note: †p < .10, *p < .05, **p < .01, ***p < .001.

Source: Authors.

T a b l e 3
t-tests for Equality of Means (ROA)

	2010					2011					2012				
Group	n	Mean	Std. Dev.	t-value	df	n	Mean	Std. Dev.	t-value	df	n	Mean	Std. Dev.	t-value	df
Single Majority	2 529	.075	.107	−2.707**	4 182	2 765	.075	.101	−2.687**	4 411	2 782	.068	.101	−1.255	4 398
	1 860	.083	.098			1 986	.082	.095			1 956	.072	.093		
Majority Blocking Minority	1 860	.083	.098	1.206	554	1 986	.082	.095	1.659†	551	1 956	.072	.093	1.713†	530
	375	.077	.093			368	.074	.085			355	.063	.083		
Blocking Minority Legal Minority	375	.077	.093	.120	509	368	.074	.085	−.692	518	355	.063	.083	−.0538	503
	251	.076	.100			252	.079	.090			237	.067	.084		
Single Blocking Minority	2 529	.075	.107	−.384	532	2 765	.075	.101	.091	513					
	375	.077	.093			368	.074	.085							

Note: †p < .10, *p < .05, **p < .01, ***p < .001.

Source: Authors.

Hypotheses 3, 4 and 5 state that *the corporate financial performance is affected by business size* (H3)*, previous growth* (H4) *and industry* (H5). Firstly, the size of the business is proved to be a statistically significant predictor by all models. Its standardized Beta ranges between approximately −0.05 and −0.04. Secondly, previous growth is also proved to be a statistically significant predictor by all models. Its standardized Beta is positive and reaches the values between 0.04 and 0.09 in the respective datasets. Thirdly, the effect of industry, as well, is proved to be significant. It is worth mentioning that installing the industry dummies into the models significantly increased their adequacy. NACE C (Manufacturing) is considered to be the baseline, statistically significant NACE sections with positive Betas are E (Water Supply and Sewage and Waste Management), I (Accommodation and Food Service), L (Real Estate Activities) and M (Professional, Scientific and Technical Activities), statistically significant NACE sections with negative Betas are F (Construction), H (Transportation and Storage) and Q (Human Health and Social Work Activities) – the NACE sections dummies which were significant in at least one dataset are listed.

4. Discussion and Implications

Analysing samples of more than 5,000 businesses, the most significant finding of this paper is the confirmation of the relation between ownership concentration and corporate financial performance, even though the relationship is weak. Based on the results, ownership concentration is a negative predictor of performance. This finding, "[questioning] the fundamental agency hypothesis of Berle and Means (1932) and Jensen and Meckling (1976)", is "atypical in the literature" (Bøhren and Ødegaard, 2001, p. 63). The negative effect appears to be clear in the high levels of concentration; however, when it comes to lower levels, it cannot be ruled out that the relation becomes curvilinear and performance declines once there is no majority owner. This notion requires further analyses, though.

Other factors installed in the model were also confirmed to be predictors of performance. The research verified size to be a negative predictor and previous growth to be a positive predictor. The presence of a foreign owner as well as an individual (natural person) owner and a business entity owner is also a positive predictor, unlike the presence of public and state owners. Industry classification was also proved to play a significant role in the businesses' performance.

Nonetheless, it needs to be acknowledged that the adequacy of all models, is very low. Although all above-mentioned factors contribute to the companies' performance, other factors, which are not included in the model, are even more important. This concurs with findings of Pudil et al. (2014) – according to them,

several other here excluded factors play a much more significant role in determining financial performance.

The characteristics of the paper's sample concur with the expectation that Czech companies have rather concentrated ownership, as suggested e.g. by Roubíčková (2006), Klapper, Laeven and Love (2006) and Hučka et al. (2012). However, considering the mean and median values of the Herfindahl index as well as more than 50% of businesses having a single owner and almost 40% reporting a majority owner, the data suggest higher levels of concentration than reported by e.g. Aguilera et al. (2011), Baghadasaryan and La Cour (2013) or especially Částek (2013), who worked with a sample defined by very similar parameters.

Considering the primary focus of the research, i.e. the relation between ownership concentration and corporate financial performance, this study is the first to reveal a strictly negative association between the pivotal constructs in the Czech settings. This finding directly contradicts results of Weiss and Nikitin (1998), Hanousek, Kočenda and Švejnar (2007), Hanousek, Kočenda and Mašika (2012) and Částek (2013). However, the first two utilize data from the 1990s, Hanousek Kočenda and Mašika (2012) work with different measures of both concentration and performance, and Částek (2013) finds the relation significant only when installing growth of assets as a measure of performance.

Some of this research's findings suggest that the effect of ownership concentration may, in fact, be curvilinear. This notion finds support in Claessens and Djankov (1999) and Makhija and Spiro (2000); however, it is questionable whether their results from the 1990s, as the era of the Czech economy transition, are actually relevant to today's situation.

Analysing the other outcomes of the research, one can see that some are contradictory to, while others are consonant with, the studies reviewed. Focusing on the owner types, there is a general agreement (e.g. in Claessens and Djankov, 1999; Makhija and Spiro; 2000; Částek, 2013) upon the positive effect of foreign owners, which is also confirmed by this research. Unfortunately, when it comes to other owner types, the studies reviewed mostly utilize different classifications; therefore, a comparison is not possible. Nevertheless, it is worth noting that Makhija and Spiro (2000) report a positive effect of state ownership, which is the opposite to the findings of this research. They claim that the government held on to the best enterprises, which might have been the case in the early 1990s, but probably is not today.

As for the other factors influencing performance, the evidence regarding the size of the business is mixed – Harper (2001) or Grosfeld and Hashi (2007) find it positive, Makhija and Spiro (2000) or Hanousek, Kočenda and Mašika (2012) describe it as a negative factor and according to Částek (2013), it is insignificant. This paper supports the notion of a negative impact, which can be explained by larger

businesses being more complex and having more agency problems (Makhija and Spiro, 2000). The revealed positive effect of previous growth is confirmed by Lskavyan and Spatareanu (2006). The perception of industry effects is again somewhat mixed in the literature: according to Harper (2001) or Částek (2013), it is not significant, but according to Claessens and Djankov (1999), it is.

While the main findings of this research find little support in studies from the Czech Republic, there are some from abroad, specifically from Continental Europe, which also claim that there may be negative effects of ownership concentration on performance. However, apart from the country of data origin, the studies also differ in methodology.

Bøhren and Ødegaard (2001) claim that in Norway, there is a negative effect of ownership concentration on performance. However, the relation is significant only when using Tobin's Q; for ROA, it is insignificant. Clark and Wójcik (2005) reveal a similar effect in Germany, but they use a daily rate of return on the stock market as a proxy for performance. Hamadi (2010) confirmed the negative association in Belgium, but only for the largest owner, adding more owners to the equation made the effect insignificant. The negative effect is also found by Thomsen, Pedersen and Kvist (2006) in aggregation of data from several European countries when analysing the effect of block holders. All the above-mentioned authors, however, admit that the negative effects are present only in certain levels of concentration. Furthermore, the study of Hu and Izumida (2008) should be mentioned – although they analyse the Japanese market, there may be some similarities, as they describe the market as illiquid and with stable shareholder arrangements. They find a curvilinear relationship suggesting a trade-off between monitoring benefits and expropriation risks, which, based on this research, can be the case for the Czech Republic, too.

Considering the research results, this paper introduces empirical evidence bringing to the attention of business owners, managers and policy-makers that there may be certain costs associated with high ownership concentration, manifesting themselves in diminished performance. These stakeholders are probably aware of the agency problems and disadvantages of dispersed ownership, which are, indeed, not questioned by this research, but they should not ignore the perhaps weak, but still important unfavourable effects of highly concentrated ownership.

Business owners should bear in mind that even in the most general terms, new shareholders might bring different know-how or additional funds and therefore improve corporate performance. Other shareholders may also help in spreading out the risks lying upon the dominant owners or in monitoring their performance-diminishing behaviour, which may involve wilful or unintentional acts of self-interest or excessively tight control over managers. Considering all these

possible benefits of diversifying the ownership structure, dominant owners should be ready to weigh the possible gains resulting from sacrificing certain amount of control over the business.

From the managers' point of view, this paper provides the theoretical background for understanding the behaviour and decision-making of business owners connected with the ownership structure and exercising control over the management. Having the knowledge of possible adverse effects of highly concentrated ownership as well as the potential benefits of reasonable ownership dispersion, they have arguments when designing internal corporate governance mechanisms or discussing various strategic matters with owners.

As for policy-makers, the results presented here may have various implications. As the Czech capital market is rather illiquid and only a few companies are publicly traded, one would advocate market-oriented reforms improving the efficiency of the stock market. Nonetheless, it is questionable whether the current high stability of ownership structures is a result of the legal and market settings or a demonstration of the owners' mind-sets, who refuse to change the structure regardless of external factors. Nevertheless, the results verify the need for corporate governance mechanisms rooted in legislation, which protect smaller shareholders against expropriation by larger owners. The data cannot tell whether the worse performance of highly concentrated businesses results from dominant owners' illegal or unethical behaviour; nonetheless, smaller owners should be protected against it.

The results of the research, its limitations as well as the importance of the topic in hand should motivate researchers to continue inquiring into this matter. Firstly, it needs to be mentioned that the way this study analysed the gathered data is rather simplistic. As endogeneity appears to be an issue when studying ownership concentration, there is a need to employ more advanced tools capable of addressing this subject. However, considering the Czech economy characteristics, this paper's assumption of ownership structure being exogenous seems justified. Secondly, the methodology of the research could be improved by changing the approach to installing certain variables. The method used here allows for analysis of whether certain levels of concentration result in better or worse performance; however, considering the stability of structures, it might be interesting to analyse whether changes in concentration manifest themselves in systematic changes in performance.

Thirdly, the research suffered from suboptimal availability of data, resulting in having only three complete datasets to analyse, one of which exhibits considerably different behaviour. Collecting data from a longer period of time could help to distinguish better between the typical behaviour and anomalies caused e.g. by economic cycles. Finally, apart from further quantitative research, it

would be worth inquiring into the qualitative aspects of how ownership structures emerge and develop. Such an approach, scrutinizing endogeneity from a completely different point of view, would be rather unique.

Conclusion

The aim of this paper was to analyse the effect of ownership concentration on corporate financial performance using data collected from a sample of more than 5,000 Czech medium and large enterprises. Even though the research focused on a single country, its findings can be assumed to be applicable to other economies with similar characteristics.

The statistical analysis confirmed that there is a weak, yet significant negative effect of ownership concentration on corporate financial performance, which is a finding previously not supported in the research focused on the Czech Republic. According to some results, the relation may be curvilinear, which would mean that both too high and too low ownership concentration has a diminishing effect on corporate performance.

In addition to the result associated with the main aim of the paper, the analysis also revealed that size, previous growth, presence of a foreign owner, presence of a state or public owner or industry classification are significant predictors of financial performance. Nonetheless, the results demonstrated that corporate financial performance is more significantly affected by other factors excluded from model. Furthermore, the validity of the results is somewhat decreased by not controlling for the endogeneity of ownership structure.

The research contributes to the existing body of academic literature by introducing up-to-date evidence of adverse effects of high ownership concentration in the Czech environment and supporting the expropriation hypothesis. As such, it has several implications for business owners, managers, policy-makers and researchers. Business owners should be aware of the potential existence of negative effects connected with concentrated ownership and, on the other hand, benefits of dispersing the ownership structure. Managers should consider the findings when designing internal corporate governance mechanisms. Policy-makers should bear in mind that there is a need for a legal framework protecting minority shareholders.

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