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Measuring the consequences of short-termism in business – the econometric evidence for a sample of European companies⁴

Summary

The problem of short-termism leads to too much focus of the executives on short-term goals at the cost of long-term objectives of their firms. In order to investigate the consequences of this phenomenon, we use the panel data on 1024 of the largest companies listed on the European stock markets over the 1998–2013 period. In our econometric specifications, we measure the consequences of short-termism, distinguishing between the short- and long-run effects of CEO tenure on the company's performance, approximated by its market capitalization and ROE. In order to investigate the impact of short-termism on the company's performance in the short run and to account for the potential endogeneity of CEO tenure, we use the system GMM and compare it with more standard panel specifications. As regards the measurement of the long run impact of distinct variables on the company's performance, we use the cross-sectional models based on the long-run transformations of our dataset. Our results show that the longer the CEO tenure, the better the company's performance due to, among other things, a higher propensity to invest, which – despite adversely affecting company's market capitalization in the short run – increases the company's long-term value and average profitability.

Keywords: short-termism, market capitalization, ROE, GMM, panels

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1. Introduction

The right balance between a short- and long-term perspective is crucial for the sustainability of a successful business. However, there is a lot of evidence, not least the recent financial crisis⁵, to show that long-term objectives have often been neglected because of too much concentration on short-term goals – this is the short-termism phenomenon. Short-termist behaviour seems to be the most prevalent in public companies, which might be put under pressure by their shareholders to deliver short-term outcomes⁶. Among the factors that have contributed to this pressure are: new technologies, reduced trading times and transaction costs, increased market volatility, media coverage, and the increasing role of institutional investors⁷.

Shareholders have instruments to pressurize the executives into meeting the shareholders' expectations with respect to short-term outcomes. These instruments include developing the remuneration schemes of the executives so they are based on their short-term performance, as well as the mandate to remove executives from office if they do not meet investor expectations. Short-termism is often reinforced by companies' market communication and financial reporting practices, which largely focus on the short-term performance and, from the shareholders' point of view, serve as an instrument for monitoring their short-term goals. Consequently, short-termism often results in "earnings management" rather than building the long-term value of the company⁸.

There seems to be a consensus in the literature that short-termism adversely affects the long-term performance of firms and there are different channels through which this might take place. Our empirical analysis focuses on the following aspects of short-termism: shortened CEO tenure and the neglect of investment activity. The studies of impact of short-termism on investment activity include

⁵ L.L. Dallas, *Short-Termism, the Financial Crisis, and Corporate Governance*, Legal Studies Research Paper Series, Research Paper no. 12-078, 2012.

⁶ M.S. Salter, *How Short-Termism Invites Corruption... And What to Do About It*, Harvard Business School Working Paper no. 12-094, 2012.

⁷ L. Pockock, *Curbing Excessive Short-Termism. A Guide for Boards of Public Companies*, Australian Institute of Company Directors, Thought Leadership Paper, 2013.

⁸ J.R. Graham, C.R. Harvey, S. Rajgopal, *The Economic Implications of Corporate Financial Reporting*, NBER Working Paper no. 10550, 2004; S. Bhojraj, P. Hribar, M. Picconi, J. McInnis, *Making Sense of Cents: An Examination of Firms That Marginally Miss or Beat Analyst Forecasts*, "The Journal of Finance" 2009, vol. 54, no. 5, pp. 2361–2388.

Graham et al.⁹, and Cheng et al.¹⁰ and provide strong evidence on existence of myopic behaviour among executives that give up promising investments (for instance R&D expenditures) in order to secure short-term goals. The results with respect to the impact of CEO turnover on the company's performance, including the contributions of Suchard et al.¹¹, Clayton et al.¹² and Huson et al.¹³, seem to be much less clear-cut. Namely, these studies reach different conclusions with respect to the nature, direction and timing of the impact of CEO turnover on the company's performance.

We contribute to this literature by investigating the impact of the CEO tenure on the company's performance and the investment activity, and by studying the impact of the investment activity on the company's performance. By doing so, we estimate both direct and indirect impact of the CEO tenure on the performance of firms. In our empirical analysis, we use a panel dataset for 1024 of the largest companies listed on European stocks over the 1998–2013 period. To the best of our knowledge, such a sample of European firms has not been investigated econometrically before.

The remainder of this paper is organized as follows. In Section 2, we present the details of our empirical strategy and dataset. In Sections 3 and 4, the results of our short-run and long-run empirical analysis are discussed, respectively. In Section 5, we present our conclusions.

2. Our empirical strategy and data

Short-termism leads to too much focus on short-term goals at the cost of long-term objectives. Therefore, investigating this issue requires the use of econometric methods that will allow us to distinguish between short- and long-run effects of the analysed variables. The panel data includes information regarding both horizons and, if we use proper transformations of data (i.e., the Within

⁹ J.R. Graham, C.R. Harvey, S. Rajgopal, op.cit.

¹⁰ M. Cheng, K.R. Subramanyam, Y. Zhang, *Earnings Guidance and Managerial Myopia*, "SSRN Electronic Journal" 2005 (Working Paper).

¹¹ J.-A. Suchard, M. Singh, R. Barr, *The market effects of CEO turnover in Australian firms*, "Pacific-Basin Finance Journal" 2001, vol. 9, no. 1, pp. 1–27.

¹² M.J. Clayton, J.C. Hartzell, J.V. Rosenberg, *The Impact of CEO Turnover on Equity Volatility*, "Federal Reserve Bank of New York Staff Reports" no. 166, 2003.

¹³ M.R. Huson, P.H. Malatesta, R. Parrinoc, *Managerial succession and firm performance*, "Journal of Financial Economics" 2004, vol. 74, pp. 237–275.

and Between Group transformations), we can make this time distinction explicit in our models. As Baltagi¹⁴ writes, “applied studies using panel data find that the Between estimator (which is based on the cross-sectional component of the data) tends to give long-run estimates, whereas the Within estimator (which is based on the time series component of the data) tends to give short-run estimates”.

In our study we focus on the impact of CEO tenure on the short- and long-term company’s performance measured with the market capitalization and ROE. Our main hypothesis is that stable, long-term management without too many interim periods allows executives to take long-term perspective, which in turn leads to improvement of the company’s performance.

An important challenge in such a study is the reverse causality between the stability of management and the company’s performance. In particular, it might appear that good results of the firm should increase the likelihood of the CEO tenure being extended. However, we should emphasise that the problem of short-termism is related to evaluating executives based on their short-term performance, and not their average performance over the longer term. For instance, short-termism often leads to neglect of the investment activity, while building the long-term value of the company seems to be hardly possible without investment outlays. Moreover, periods of short-term underperformance are to be expected in almost every project or activity, including investments that perform well over the long-term. Therefore, the long tenure of the incumbent CEO is unlikely to be the result of beating the market year after year (we cannot exclude some individual exceptions, though). It rather reflects the fact that shareholders of a given company are ready to accept short-term underperformance, including a short-term decline in the company’s share price at the time of increased investment-expenditure, while expecting satisfactory longer-term returns.

Table 1. The variables used in the study and their sources

Variable	Description	Unit	Source
Market cap	Market capitalization of a firm at the end of the calendar year. The value of this particular variable in 1998 has been the criterion of choosing the largest companies listed on the European stock markets.	million EUR	Standard & Poor's Capital IQ

¹⁴ B.H. Baltagi, *Econometric Analysis of Panel Data*, John Wiley & Sons Ltd, Chichester 2005.

Variable	Description	Unit	Source
ROE	Return on equity over the year.	% of equity	Standard & Poor's Capital IQ
Time in role	Tenure of incumbent CEO. When there was more than one CEO in a company in a given year, average of their tenures is used.	Years	BoardEx
Share of LTIP in overall remuneration of the CEO	Conditional compensation in the form of the Long Term Incentive Program (LTIP) granted in a given year, divided by the total CEO remuneration calculated as a sum of salary, bonus and LTIP.	% of total remuneration	Own calculations based on BoardEx
Capex/revenue	Capital expenditures (additions to fixed assets) divided by the total annual revenue.	% of total revenue	Own calculations based on Thomson One (Capex) and Thomson Reuters Eikon (Total Revenue)
Capex/assets	Capital expenditures (additions to fixed assets) divided by the total assets at the end of the previous year. The total assets are computed as a sum of total equity and total debt at the end of the previous year.	% of total assets	Own calculations based on Thomson One (Capex) and Thomson Reuters Eikon (Total Equity and Total Debt)
Outsider	Binary variable equal to one if the incumbent CEO was appointed from outside of the company, and zero when CEO was an insider successor.	Binary	Own calculations based on BoardEx

Source: authors' own elaboration.

In the case of the short-run models explaining market cap, we additionally deal with the issue of endogeneity by using the system GMM estimation technique¹⁵, which is a common solution to problems of this type, with the latest example of Goczek and Witkowski¹⁶. Moreover, the Monte Carlo study of Flannery and

¹⁵ R. Blundell, S. Bond, *Initial conditions and moment restrictions in dynamic panel data models*, "Journal of Econometrics" 1998, vol. 87, pp. 115–143; D. Roodman, *How to Do xtabond2: An Introduction to "Difference" and "System" GMM in Stata*, "The Stata Journal" 2009, vol. 9, no. 1, pp. 86–136.

¹⁶ Ł. Goczek, B. Witkowski, *Determinants of Card Payments*, "Applied Economics" 2016, vol. 48, no. 16, pp. 1530–1543.

Hankins¹⁷ suggests that the system GMM method performs well in the corporate finance context, including unbalanced panels and endogenous regressors. We compare the performance of the system GMM in explaining the market cap with more standard panel techniques (FE, RE). On top of that, we use the panel standard estimators for the models explaining ROE and the investment activity.

To analyse the long run impact of distinct variables on the company's performance, we use cross-sectional models estimated with the ordinary least squares (OLS) method, based on the long-run transformations of our dataset (focusing on the between group variance in the data).

The selection of different econometric models outlined above allows us to investigate whether there are differences between the impact of the selected variables on the company's performance in the short run and in the long run.

As our empirical base, we have collected information on 1024 of the largest companies listed on European stocks over the 1998–2013 period. We selected firms that were the largest, in terms of their market capitalization, as of the end of 1998, and continued to be listed over the entire sample period. The dataset includes: the tenures of CEOs that were in office over the years 1998–2013, market capitalization, share prices, capital expenditures, and other basic financial indicators of the analyzed companies. All the variables used in the analysis, including their respective sources, are outlined in Table 1. The firms within our sample have also been divided according to the Global Industry Classification Standard (GICS) developed by MSCI and Standard & Poor's (S&P), which consists of 10 sectors – we discuss the sectoral control variables later on.

Note that simple multiplication of the number of firms and years gives us as many as 16 384 observations. However, depending on the model specification, there are more or less missing data in the case of some variables, which reduces the number of observations actually used.

Outliers are another reason for reducing the number of observations – we remove them from our dataset, following a standard econometric practice. In particular, we remove the observations in which:

- the stock variables have negative values (especially assets);
- debt/equity ratio is higher than 2000%;
- ROE is higher than 500% or lower than –500%;
- capex/total revenue ratio is higher than 1000%.

¹⁷ M.J. Flannery, K.W. Hankins, *Estimating dynamic panel models in corporate finance*, "Journal of Corporate Finance" 2013, vol. 19, pp. 1–19.

Such extreme observations are unlikely to have any economic justification and are either a result of non-standard accounting events or are related to errors and omissions in our data sources that we cannot verify. In sum, we remove 131 observations. However, not all observations are used in all parts of our empirical analysis, so the number of observations that we effectively removed differ across particular econometric models. For instance, in the panel models, the number of observations removed is marginal and varies from 34 to 56.

3. Short-run empirical evidence

In this section, in order to achieve short-term estimates, we use the fixed effects (FE) panel estimation techniques and system General Method of Moments (GMM). We also consider the random effects (RE) panel estimation as an alternative method and pooled OLS model, when justified.

Panel models explaining the performance of the i -th firm in the year t are based on the following equation:

$$\begin{aligned} performance_{i,t} = & \mu_i + \gamma performance_{i,t-1} + \beta_1 (time\ in\ role)_{it} + \beta_2 outsider_{i,t} + \\ & + \beta_3 (capex/total\ revenue)_{i,t} + \beta_4 (LTIP\ share)_{i,t-1} \\ & + \sum_{s=1}^{10} \beta_{4+s} (sector\ performance)_{s,i,t} + \varepsilon_{it} \end{aligned} \quad (1)$$

where $performance_{i,t}$ stands for either the log market cap or ROE. Importantly, the market cap is a stock variable that is largely path-dependent. We account for this fact in two distinct ways. Firstly, we estimate a dynamic system GMM model using the logarithm of the level of the market cap as the explained variable, along with autoregressive terms on the right-hand side of the econometric equation. Secondly, while using standard panel techniques, we estimate static models (in which $\gamma = 0$) that explain the first differences of the logarithm of the market cap.

We use a slightly different approach to ROE. Since ROE is a ratio and, in terms of its numerator, it is a “flow” variable, we do not use any transformations of the explained variable (neither logarithms nor differencing) and do not develop a dynamic variant of the model.

Intercept μ_i is the firm level individual effect (either fixed or random) and $(sector\ performance)_{s,i,t}$ is the control variable describing the situation in sector s ,

equal to (1) average (differenced) close price, in models of the market cap, or to (2) average ROE, in models of ROE¹⁸. The remaining regressors: $(time\ in\ role)_{i,t}$, $outsider_{i,t}$, $(capex/total\ revenue)_{it}$ and $(LTIP\ share)_{i,t-1}$ ¹⁹ have already been defined in Table 1. These variables are considered in levels in our panel specifications. However, we exclude the investment activity from the short-term models for ROE, as we should not expect its effects to materialise quickly enough to be reflected in the company's short-term profits (in the same financial year).

The estimation results for models explaining the company's performance are presented in Table 2.

In 3 out of 5 models considered, the estimation results show that CEO tenure has a positive and statistically significant (under 5% significance level) influence on the market cap of a company in the short-term – these are the GMM, RE and OLS models. In the case of FE and FE with robust standard errors models it is not significant under any standard significance levels. However, the Hausman test does not reject the null of the RE model being consistent and efficient, so we do not treat these two models as our baseline specifications for the market cap. The obtained results are much more robust across different models when it comes to the positive impact of time in the role on the profitability as the estimated coefficient is statistically significant under 1% significance level in each case.

When it comes to the investment activity, all the models of the market cap indicate a statistically significant negative impact of an increase in the capex/total revenue ratio on the short-term market valuation of a firm. In other words, in the short-term, shareholders tend to 'punish' an increase in the firm's investment expenditure through the sale of the company's shares and a decline in its market capitalisation. In the case of the GMM and simple FE specifications, the coefficient for the capex/total revenue ratio is similar and significant, whereas in the RE and OLS models, it is still significantly negative, but its magnitude is considerably smaller.

¹⁸ This variable equals zero if the firm i does not belong to sector s .

¹⁹ We investigate whether increasing the share of CEO remuneration that is conditional upon the future performance of a company positively affects the motivation of the executives and consequently, the future performance of a company. It is therefore obvious that we have to apply the lagged LTIP share variable. Moreover, by using the lagged variable we avoid the problem of endogeneity (i.e. LTIP being granted as a result of the company's good performance).

Table 2. Short-term models explaining the company's performance

Dependent variable	log market cap				ROE			
	GMM (levels)	FE (1st diff)	FE (1st diff, robust s.e.)	RE (1st diff.)	OLS (1st diff.)	FE (levels)	FE (levels, robust s.e.)	RE (levels)
log(market cap _{<i>t,t-1</i>})	0.775*** (0.000)							
log(market cap _{<i>t,t-2</i>})	-0.061* (-0.075)							
log(market cap _{<i>t,t-3</i>})	0.166*** (0.000)							
time in role _{<i>t</i>}	0.015** (0.015)	0.003 (0.375)	0.003 (0.392)	0.004** (0.041)	0.005** (0.012)	0.005*** (0.001)	0.005*** (0.007)	0.005*** (0.000)
capex/total revenue _{<i>t,t</i>}	-0.331*** (-0.001)	-0.340*** (0.000)	-0.340*** (0.006)	-0.191*** (0.001)	-0.162*** (0.001)			
outsider _{<i>t,t</i>}	-0.091** (-0.014)	0.017 (0.642)	0.017 (0.616)	0.005 (0.830)	0.005 (0.808)	-0.033* (0.058)	-0.033 (0.282)	-0.039*** (0.009)
LTP share _{<i>t,t-1</i>}	0.15 (-0.164)	0.082 (0.191)	0.082 (0.240)	0.090* (0.071)	0.087* (0.060)	0.087*** (0.003)	0.087*** (0.012)	0.093*** (0.001)
Observations	1996	2168	2168	2168	2168	2513	2513	2513
Firms	288	288	288	288	288	308	308	308

Notes: p-values in parentheses, * p < 0.10, ** p < 0.05, *** p < 0.01. In the case of system GMM, a twostep method with Windmeier (F. Windmeijer, *A finite sample correction for the variance of linear efficient two-step GMM estimators*, "Journal of Econometrics" 2005, vol. 126, pp. 25–51) corrected standard errors is used. The Arellano and Bond (M. Arellano, S. Bond, *Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations*, "Review of Economic Studies" 1991, vol. 58, pp. 277–297) serial correlation test does not reject the null of no serial correlation of order 2. The p-value of Hansen test of overidentifying restrictions equals 0.11 – the restrictions are not rejected. The Hausman test does not suggest that the estimates of the RE estimator are inconsistent. In the case of market cap, the OLS was also consistent, so we report it additionally. The sectoral controls were statistically significant, yet we do not report them. We also do not report the intercepts.

Source: authors' own elaboration.

In order to check whether short-termism – through the shortened CEO tenure channel – may lead to the neglect of investment activity, we estimate the models explaining the short-term investment activity of the i -th firm in the year t . In general, we specify these models using the following equation:

$$\begin{aligned} (\text{capex/total revenue})_{it} = & \mu_i + \beta_1 (\text{time in role})_{it} + \beta_2 \text{outsider}_{it} + \\ & + \beta_3 (\text{LTIP share})_{it-1} + \sum_{s=1}^{10} \beta_{3+s} (\text{sector investments})_{sit} + \varepsilon_{it} \end{aligned} \quad (2)$$

with all the variables defined as in the short-term models of ROE. Since the capex/total revenue ratio is a flow variable (flows in both the numerator and denominator), we estimate the models of investment activity using a similar approach to that applied in the models of ROE. The respective estimation results are presented in Table 3. The main conclusion here is that time in the role positively influences the company's propensity to invest. Therefore, an increased CEO tenure may help to counteract the neglect of investment resulting from too much focus on short-term goals.

Table 3. The estimation results for the short-term models explaining the company's performance

Method	FE	FE (robust s.e.)	RE
time in role _{it}	0.002*** (0.007)	0.002* (0.081)	0.003*** (0.001)
outsider _{it}	-0.012 (0.249)	-0.012 (0.178)	-0.014 (0.115)
LTIP share _{i,t-1}	-0.002 (0.919)	-0.002 (0.939)	0.004 (0.802)
Observations	2168	2168	2168
Firms	288	288	288

Notes: p-values in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The Hausman test suggests that the RE model is inconsistent (with the p-value close to 0), so we should treat FE as the main model here. Source: authors' own elaboration.

4. Long-run empirical evidence

The primary purpose of the long-term econometric analysis is to quantify the impact of the length of CEO tenure and of the investment activity on the long-term performance of a company, approximated by the changes in the long-term growth of the market cap and the average level of ROE. The general form

of the cross-sectional models explaining the company's performance is defined for the i -th firm as:

$$\begin{aligned} performance_i = & \mu + \beta_1(time\ in\ role)_i + \beta_2(time\ in\ role)_i^2 + \beta_3outsider_i + \\ & + \beta_4(capex\ ratio)_i + \beta_5(sector\ performance)_i + \varepsilon_i, \end{aligned} \quad (3)$$

where $performance_i$ stands for the long-run transformation of the performance variable from the panel models discussed in Section 3. In the case of the market cap, we use the logarithmic growth rate over the whole sample period, whereas in the case of the ROE, we explain the sample average. Such an approach reflects the fact that the former is a state variable and the latter is a flow variable²⁰.

The explanatory variables are the averages of the respective panel variables over the entire sample period, calculated for each firm. $(time\ in\ role)_i$ and $outsider_i$ variables are explained in Table 1. Note that we account for a potential non-linear (quadratic) impact of time in the role on the performance of the firm in cross-section models of the company's performance. This is to investigate whether the marginal benefits from every additional year in the CEO's tenure are decreasing. $(capex\ ratio)_i$ is the average capex/total revenue for the market cap models or the average capex/assets for the ROE model. We do not use the capex/total revenue in the ROE model due to the positive relation between the total revenue and the profits of a company (i.e., the numerator in the explained variable). Using the capex/assets ratio instead allows us to solve the above-mentioned problem. Finally, $(sector\ performance)_i$ is the average sectoral performance variable (see Section 3) for the sector that the i -th company belongs to²¹. Note that we do not include the LTIP share variable in neither of the long-term models as it is clearly endogenous in the cross-sectional framework. Namely, the average performance of a company affects the average LTIP share, because the latter is often granted as a reward for good results.

²⁰ At first glance, we may seem to apply different approaches to modelling of the market cap and ROE. However, in both cases we actually deal with roughly the same kind of transformation of the variables that we used earlier in the static panel models. This is because the sample logarithmic increment is proportional to the average of the first differences of logarithms used in the static panel models explaining market cap. While the econometric equivalence is not complete as we work with an unbalanced panel, the differences are actually minor.

²¹ In the case of the cross-sectional models we use the sectoral control in the form of a single vector, in contrast to the panel specification in which we use multiple sectoral controls in each equation. This approach allows us to save degrees of freedom in the cross-sectional models.

The long term econometric results for the models of the market cap and ROE are outlined in Table 4. The obtained results show that the time in role variable has a positive and significant impact on the long-run, logarithmic increment of the market cap. At the same time, this effect turns out to be non-linear, as the coefficient for the squared time in role variable is significant and negative, which means diminishing returns from the average tenure length. This finding is confirmed when we apply the robust standard errors (with p-values even closer to 0). In the model for ROE, the impact of time in the role on the explained variable is also positive and significant, which confirms the importance of the CEO tenure for the company's long-term performance. However, we do not find non-linearity of that effect (the corresponding coefficient for ROE is not statistically different from zero), which distinguishes the models for ROE from the models for the market cap.

Table 4. Long-term models explaining the company's performance

Dependent variable method	Market cap		ROE	
	OLS	OLS (robust s.e.)	OLS	OLS (robust s.e.)
time in role _i	0.115*** (0.000)	0.115*** (0.000)	0.003** (0.025)	0.003*** (0.003)
time in role ² _i	-0.002*** (0.006)	-0.002*** (0.001)		
capex/total revenue _i	0.707* (0.065)	0.707 (0.112)		
capex/assets _i			0.453*** (0.002)	0.453*** (0.002)
outsider _i	-0.153 (0.259)	-0.153 (0.303)	-0.029** (0.045)	-0.029** (0.045)
sectoral control _i	0.325*** (0.000)	0.325*** (0.000)	1.120*** (0.000)	1.120*** (0.000)
intercept	0.105 (0.374)	0.105 (0.375)	-0.040 (0.176)	-0.040 (0.176)
Observations	705	705	760	760
R ²	0.096	0.096	0.080	0.080

Notes: p-values in parentheses, * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: authors' own elaboration.

An important estimation results is the positive impact of the capex/total revenue ratio on the long run log increment of the market cap. However, it is statistically significant in the basic OLS model only under 10% significance level,

with the p-value equal to 0.065. This statistical significance disappears after application of robust standard errors, with the p-value rising to 0.112. Notwithstanding that, our results do provide some evidence on the opposite effects of investment activity on the short-term and the long-term performance of a company. Indeed, as shown in Section 3, an increase in the capex/total revenue ratio leads to a short-term decrease in the growth rate of the company's market capitalisation. In addition to the above-mentioned effect of investment outlays on the company's value in the long term, there is a strong and statistically significant long-run impact of the capex/assets ratio on the company's average ROE. This conclusion does not change after the implementation of the robust standard errors, providing further evidence for the trade-off between short and long-term goals.

Combination of the short-run and the long run results demonstrates the incentives that lead the executives (at least those excessively focusing on short-term targets) to neglect investment activity of the firm in order to avoid disappointment of the short-term oriented shareholders, which in turn may adversely affect the company's long-term value.

These results also provide further support for our identification strategy with respect to the impact of the CEO tenure on the company performance. The short-termism phenomenon is related to evaluating executives based on their short-term performance, and not their average performance over the longer term. Therefore, a long tenure of the incumbent CEO is more likely to be related to higher willingness of shareholders of a given firm to accept the periods of short-term underperformance, at the time of increased investment expenditure, while expecting satisfactory longer-term returns – and usually rightly so, as confirmed by our long-term analysis.

The general form of models explaining the long-term investment activity of the i -th firm over the 1998–2013 period is as follows:

$$\begin{aligned} (\text{capex ratio})_i &= \mu_i + \beta_1(\text{time in role})_i + \beta_2\text{outsider}_i + \\ &+ \beta_3(\text{sector investments})_i + \varepsilon_i, \end{aligned} \quad (4)$$

with all the variables defined as in previous equations. The respective estimation results are presented in Table 5. The hypothesis that short-termism – through the shortened CEO tenure channel – may lead to the neglect of capital outlays is confirmed by the long-term models of investment activity. The impact of time in role both on the capex/total revenue and on capex/assets ratios is positive and statistically significant in the long run and this result holds under robust standard errors.

Table 5. Long-term models explaining the investment activity of companies

Dependent variable	Capex/total revenue		Capex/assets	
	OLS	OLS (robust s.e.)	OLS	OLS (robust s.e.)
time in role _{<i>i</i>}	0.002** (0.023)	0.002** (0.015)	0.002*** (0.001)	0.002*** (0.003)
outsider _{<i>i</i>}	-0.002 (0.877)	-0.002 (0.866)	-0.001 (0.889)	-0.001 (0.896)
sectoral control _{<i>i</i>}	0.643*** (0.000)	0.643*** (0.000)	1.090*** (0.000)	1.090*** (0.000)
intercept	0.008 (0.425)	0.008 (0.505)	-0.016** (0.043)	-0.016** (0.008)
Observations	705	705	760	760
R ²	0.124	0.124	0.192	0.192

Notes: p-values in parentheses, * p < 0.10, ** p < 0.05, *** p < 0.01.

Source: authors' own elaboration.

5. Summary and the areas for further research

Using a panel dataset on 1024 of the largest companies listed on the European stock markets over the 1998–2013 period, we provide evidence that the CEO tenure has a significant impact on the company's performance both in the short run and in the long run – an increased CEO tenure positively influences the company's profitability and market capitalization. The impact on the long-term value of the company tends to weaken with an increasing CEO tenure. This indicates that the marginal benefits from extending the length of the executive's contract are particularly strong in the CEO's first additional years in office.

In addition, we show that market expectations and pressure from investors to deliver short-term results lead to the neglect of investment activity by executives. The reason is that in the short-term, capital outlays often lead to a deterioration in reported financial indicators, which in turn results in a decline in the company's share price, as confirmed by our study. We have also shown that neglecting investment activity reduces the company's long-term value and average profitability. With respect to that, an important finding of our research is that management stability is conducive to higher investment activity in a company, which in turn increases the long-term value of the firm.

As a potential area of further research, the short-run and long-run approach could be integrated using the panel cointegration approach, which would enable

us to estimate the long-run and short-run relations in the same models. Likewise, the application of the Dynamic OLS or Fully Modified OLS methods seems to be worth consideration. However, it has been impossible to apply these approaches to our sample due to limited time dimension in the case of some variables for most of the firms. Still, we find the cointegration analysis a very much promising path to study the short-termism phenomenon in the future.

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Pomiar skutków short-termizmu dla biznesu – wyniki badania ekonometrycznego na próbie europejskich przedsiębiorstw

Streszczenie

Problem tzw. short-termizmu prowadzi do nadmiernej koncentracji kadry zarządzającej na celach krótkookresowych, często kosztem wartości przedsiębiorstwa w długim okresie. W celu zbadania skutków tego zjawiska wykorzystujemy panel 1024 największych przedsiębiorstw notowanych na giełdach w Europie w latach 1998–2013. W naszych specyfikacjach badamy wpływ stażu prezesa, ściśle związanego ze zjawiskiem short-termizmu, na kapitalizację rynkową i rentowność (wskaźnik ROE) firmy, rozróżniając przy tym efekty krótko- i długookresowe. W celu zbadania konsekwencji short-termizmu dla spółki w krótkim okresie i rozwiązania problemu endogeniczności stażu prezesa wykorzystujemy wielorównaniową uogólnioną metodę momentów (system GMM) i porównujemy uzyskane wyniki z bardziej standardowymi specyfikacjami panelowymi. Z kolei długookresowy wpływ poszczególnych zmiennych na wyniki firmy analizujemy poprzez wykorzystanie modeli przekrojowych, opartych na długo-okresowych transformacjach naszego zestawu danych. Uzyskane wnioski wskazują, że dłuższy staż prezesa prowadzi do poprawy wyników firmy, m.in. ze względu na większą skłonność do ponoszenia nakładów inwestycyjnych, które – mimo negatywnego wpływu na kapitalizację rynkową w krótkim okresie – w dłuższej perspektywie zwiększają wartość przedsiębiorstwa i jego średnią rentowność.

Słowa kluczowe: short-termism, kapitalizacja rynkowa, ROE, GMM, panele

Zgodnie z oświadczeniami autorów, udział każdego z nich w tworzeniu artykułu jest równy.