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IMPACT OF INSTITUTIONAL INVESTORS ON THE FINANCIAL PERFORMANCE OF PORTFOLIO COMPANIES – SELECTED ASPECTS

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Purpose: The aim of the work is to examine the impact of selected institutional investors on the financial performance of portfolio companies. The research included one of the most important groups of institutional investors in Poland, i.e. pension funds.
Design/methodology/approach: The research covered the largest pension funds in Poland, which actively participate in general meetings of shareholders. The pilot studies included 72 non-financial companies listed on the Warsaw Stock Exchange for at least six years, i.e. in the years 2016-2021. Tobin's Q index was the chosen measure of financial performance. The research was conducted on three panels of companies, diversified in terms of the total participation of pension funds in general meetings of shareholders.
Findings: The influence of the institutional investors surveyed (i.e. the largest pension funds) on the financial performance of portfolio companies is of a varied nature. The positive influence of pension funds on the level of Tobin's Q occurs within a certain range, i.e. when pension funds hold between approximately 7.2% and 12.3% of the total number of votes at the general meeting of shareholders. However, below and above this range, negative effects of the presence of pension funds are observed.
Research limitations/implications: The conducted research is of a pilot nature. Further research should include a larger number of portfolio companies and more control variables.
Practical implications: The results of the research may be relevant to the academic debate on the effectiveness of corporate governance as exercised by institutional investors, especially pension funds. The results of the research are important for corporate governance researchers, pension fund managers and the management and supervisory boards of portfolio companies.
Originality/value: The added value of the study is that it undertakes research on the impact of pension funds on the financial performance of portfolio companies. An important element of novelty is the study of the participation of pension funds in the general meeting of shareholders. This is an important corporate governance mechanism that is relevant to the relationships studied.
Keywords: institutional investors, pension funds, corporate governance, corporate finance.
Category of the paper: Research paper.

1. Introduction

Companies with share capital are increasingly becoming owned by institutional investors, especially investment funds, pension funds and insurance companies. The process of institutionalisation of corporate ownership (Jeżak, 2010) is evident both in developed capital markets in different part of the world and in numerous European markets. The average share of institutional investors in global capital markets exceeds 41% of market capitalization. The greatest degree of institutionalisation of corporate equity occurs in the United States (72% of market capitalization). The average share of institutional investors in the market capitalization of companies listed on European capital markets is 38%, with countries such as the United Kingdom and Iceland markedly in the lead (more than 60%). Poland is also in the group of countries with a relatively high share of institutional investors (33%) (De La Cruz et al., 2019).

Due to the progressive institutionalisation of shareholding in listed companies in Poland, the identification of the economic consequences of the process is becoming a pertinent issue. The investment strategies pursued by institutional investors along with the associated criteria of selection of companies for the investment portfolio have an impact on the financial performance of the companies. It becomes especially important for the management boards to reckon with the perspectives held by institutional investors, who have enormous capital resources at their disposal. The above translates into a direction shift in the corporate decision-making processes towards value creation for shareholders and multiplication of the capital invested by them.

In the specific circumstances of Poland's capital market, the most important group of institutional investors are pension funds, whose share in the market capitalization is significantly higher than that of investment funds. The share held by pension funds in the capitalization of the Warsaw Stock Exchange is 20.6%, whereas for investment funds this is as low as 4.3%. With regard to free float in those markets, this is 41.8% for pension funds compared to 9% for investment funds (NBP, 2022; Szewc-Rogalska, Wąsacz, 2024). The above gives rise to the necessity of research to study the predominant role of pension funds in the market capitalization of companies listed by the Warsaw Stock Exchange.

It should be noted that previous research on the capital market in Poland has primarily focused on assessing the importance of institutional investors in corporate governance. Institutional investors have been included collectively as a homogeneous group, or studies have focus only at investment funds (Bojańczyk, 2007; Szewc-Rogalska, 2011, 2017; Adamska, Urbanek, 2014; Miziołek, Trzebiński, 2018; Bosek-Rak, 2019; Błoch et al., 2020; Kaldoński et al., 2020; Aluchna, Kuszewski, 2021). Furthermore, the results of these studies are inconclusive, and no separate analyses have been conducted for pension funds as a specific group of institutional investors. Therefore, this paper attempts to fill this research gap.

The main purpose of this study is to examine the impact of selected institutional investors on the financial performance of portfolio companies. The research includes one of the most important groups of institutional investors in Poland, i.e. pension funds. The impact of the process of institutionalization of the ownership of listed companies on their financial condition takes place through various corporate governance mechanisms, among which the participation of investors in the general meeting of shareholders is noteworthy.

The added value of this work is that it undertakes research on the impact of pension funds on the financial health of portfolio companies. An important element of novelty is the study of pension funds' participation in the general meeting of shareholders. This is an important corporate governance mechanism that is relevant to the relationships studied.

The structure of the following sections of the paper is as follows. The second part of the paper presents a literature review and an analysis of previous research. The third section contains the research methodology. The fourth section, on the other hand, discusses the results of the empirical research and their discussion is carried out in the fifth section. The final section presents a summary and directions for further research.

2. Literature review

Pension funds are – along with mutual funds and insurance companies – an important group of institutional (financial) investors. Financial investors make large investments in the capital market and expect to maximise the value of their portfolio companies (Rappaport, 1986; Copeland et al., 1990). The main function of pension funds is to provide a special type of service, which includes financing pensions, medical treatment and compensation for accidents (Sopoćko, 2005). The funds accumulated by pension funds are often used for long-term investments. Pension funds are among the investors who prefer high dividends paid by portfolio companies. Pension funds have less pressure for high short-term returns than investment funds (Szewc-Rogalska, 2012).

Pension funds – due to the fiduciary nature of their activities – have a rationale for corporate governance of portfolio companies. In addition to their financial motivations, they also have the suitable qualifications and skills to influence the managements of their portfolio companies. Opportunities for real influence on these companies – through corporate governance mechanisms – exist primarily where investors hold significant stakes. However, many institutional investors hold small stakes in individual companies in their investment portfolios. This results in significant limitations on the ability of these investors to obtain and process the information necessary to monitor portfolio companies (Gillan, Starks, 2000; Almazan et al., 2005; Chen et al., 2007).

The activity of pension funds and other institutional investors and their involvement corporate governance depends on a number of factors. The most important among those factors are: investment strategy, time horizon of the investment, structure and concentration of the investment portfolio, social goals pursued, and the level of development achieved by a given capital market (Celik, Isaksson, 2013). Long-term investors with significant shareholdings are the best positioned to become involved in corporate governance (Bushee, 2001). Foreign institutional investors display higher monitoring activity compared to domestic investors with regard to their portfolio companies (Ferreira, Matos, 2008). Moreover, independent institutional investors are more active compared to investors having business ties to local companies and loyalties to their management (Ferreira, Matos, 2008; Almazan et al., 2005; Chen et al., 2007; Sahut, Gharbi, 2010).

The results of existing studies into the impact of institutional investors on the financial performance of their portfolio companies are highly diversified. One can distinguish three types of relationships, viz. positive impact, negative impact, and lack of any significant impact on the part of the institutional investors. These results are dependent on multiple factors, such as the development level of the capital market, the type of institutional investors and their specific characteristics.

Studies in European markets show that there is a positive relationship between the size of the shareholding of the dominant institutional investor and the M/B ratio (the ratio of the market value of the shares to their book value). This relationship is strongest in the UK market, which stands out for having the largest share of institutional investors in market capitalisation (Thomsen, Pedersen, 2000). In contrast, Elyasiani, Jia (2010) found that there is a positive relationship between the performance of listed companies (industry-adjusted return on investment) and the stability of institutional ownership. A positive effect of institutional ownership on financial performance (including Tobin's Q ratio and ROA) was also found by Yuan et al. (2008) and Lin and Fu (2017).

In contrast, Rose (2007) found that there is no significant relationship between the presence of institutional investors in the shareholding structure of non-financial companies and the level of Tobin's Q ratio. On the other hand, the presence of the two largest institutional investors has a statistically significant negative effect on the level of Tobin's Q ratio. As remarked by Rose, the significance of the impact may be due to the nature of the Danish capital market. That market is characterized by a significant concentration of ownership and low participation level of institutional investors. Sahut and Gharbi (2010) found that in the French market there is a negative relationship between the share of institutional investors and the level of the Tobin's Q ratio. However, their subsequent research showed that this relationship can be described in more detail using a second-degree polynomial function. On this basis, they found that the impact of institutional owners on the development of the Tobin's Q ratio changes from negative to positive with increase in their shareholding. The return point is 56.3%.

The results of the research may vary depending on the type of institutional investor. The origin of the investor (Ferreira, Matos, 2008), the size of the shareholding held by institutional investors, the degree of independence of the investors and the degree of their sensitivity to pressure from the business environment can be important (Sahut, Gharbi, 2010; Elyasiani, Jia, 2010). Independent institutional investors that are not sensitive to pressure from the business environment include mutual funds and pension funds. Banks and insurance companies, on the other hand, have business relationships that limit their ability to exercise effective corporate governance over their portfolio companies. In view of this, they are treated as so-called pressure-sensitive institutional investors.

Ferreira and Matos (2008) determined that foreign institutional ownership has a positive impact on Tobin's Q. They found none such with regard to domestic institutional shareholding. The majority of studies show insensitive institutional investors to have a positive impact on the financial performance of the companies studied (Ferreira, Matos, 2008; Elyasiani, Jia, 2010; Lin, Fu, 2017). The impact of banks and insurance companies, on the other hand, may be diverse, i.e. there may be a lack of significant impact (Ferreira, Matos, 2008) or a positive impact (Elyasiani, Jia, 2010; Lin, Fu, 2017). Studies (Elyasiani, Jia, 2010) also show that so-called insensitive institutional investors have a higher positive impact on the ROI than sensitive institutional investors do. The comparison of the impacts of insensitive versus sensitive investors also takes into account other criteria such as the size of the institutional investors' shareholding within the shareholder structure, and the origin of such investors. Lin and Fu (2017) found large insensitive foreign investors to have a greater positive impact on the performance of the studied companies compared to small sensitive domestic investors.

Sahut and Gharbi (2010) determined that insensitive institutional investors in the French market have a negative impact on Tobin's Q, albeit with a change to the positive above 32.8% shareholding. For sensitive institutional investors, the change point falls at 35.5%. Moreover, investors simultaneously meeting three criteria: long-term, with significant shareholdings (above 5%) and insensitive to pressure have a positive impact on company value only when the shareholding exceeds 17%.

Among the studies on institutional investors, those that focus exclusively on one group of these investors, namely pension funds, deserve special attention. The scope, methodology and results of these studies are diverse, as indicated by studies by, among others: Woidtke (2002) and Jiao and Ye (2013). Woidtke (2002) found that the value of companies (as measured by Tobin's Q) is positively correlated with private pension fund ownership and negatively correlated with public pension fund ownership. In the case of private pension funds, managers' remuneration schemes were strongly correlated with the performance and market value of portfolio companies. In contrast, for public pension funds, political and social factors may play a large role.

Jiao and Ye (2013) studied the relationship between public pension funds' equity ownership of portfolio companies and the future performance of these companies. This performance was measured by stock return and operating performance. The authors found that the relationship studied is in the shape of an inverted U. This means that as the ownership of public pension funds increases, the performance of portfolio companies first increases and then decreases. The relationship between public pension fund ownership and future stock returns turns from positive to negative when the level of public pension fund ownership reaches around 3.5%. The results obtained suggest that the presence of public pension funds is conducive to shareholder value maximisation when they have a moderate influence on the management of portfolio companies. In contrast, excessively large public pension fund holdings may make it easier for the managers of these funds to pursue political interests and result in the destruction of shareholder value.

In the case of the capital market in Poland, theoretical considerations and empirical studies on institutional investors are undertaken, but usually these studies do not take into account the specifics of pension funds. Publications on pension funds are scarce in number (Słomka-Gołębiowska, 2014; Sołdek, 2016; 2022a, 2022b, 2023; Szewc-Rogalska, 2012; Szewc-Rogalska, Wąsacz, 2024), and they focus on the role of pension funds in various corporate governance mechanisms. In contrast, they do not undertake research on the impact of pension funds on the financial performance of portfolio companies.

Various financial ratios are taken into account in studies carried out on the example of the capital market in Poland, e.g. Tobin's Q, ROE, ROA, operating profitability ratio, P/BV, TSR, return on shares, MVA index (market value added index). The results of these studies vary depending on the financial indicator adopted and the research period. Some studies indicate that there is no statistically significant relationship between the participation of institutional investors and the level of ROA and ROE (Jeżak et al., 2010; Bohdanowicz, 2016). In contrast, the authors of other studies (Adamska, Urbanek, 2014) found that higher investment fund involvement tends to occur in companies with higher ROE levels. In contrast, the relationship between the involvement of investment funds and the development of stock returns is not so clear-cut. Oleksy and Zyguła (2018) found that the presence of institutional investors in the shareholding structure increases the probability that a company will achieve a positive market value added index (MVA index) and a positive TSR value. On the other hand, research by Bohdanowicz (2016) shows that there is a positive and statistically significant relationship between the participation of institutional investors in ownership structures and the level of Tobin's Q index.

Some studies, conducted on the capital market in Poland, have identified the existence of a non-linear relationship (Aluchna, 2007; Szewc-Rogalska, 2012; Bosek-Rak, 2019). Aluchna (2007) found that the relationship between the share of institutional investors and the level of ROE and operating profitability is positive, but – above the cut-off point – it changes to a negative relationship. The cut-off point is approximately 35% participation of institutional

investors in the shareholder structure. Bosek-Rak (2019), in turn, determined that the shareholding of institutional investors above 27% has a negative impact on the P/BV ratio. Szewc-Rogalska (2012), on the other hand, found that a positive impact of institutional investors on the level of Tobin's Q ratio occurs in the range of 16-39%, while a negative impact occurs in the range of 5-16% and above 39%

The analysis of the research done to date reveals the results of empirical studies in different capital market to lack unequivocality. It should be noted that studies on the capital market in Poland are scarce in number. Moreover, they usually concern institutional investors in general, without taking into account the specifics of pension funds. After another reform of the pension market in Poland (Ustawa z dnia 6 grudnia 2013…, 2013), the importance of pension funds has increased among institutional investors purchasing shares of listed companies in Poland. For the above reason, this paper attempts to study this particular group of institutional investors.

3. Research methods

The research covered selected institutional investors, i.e. pension funds. Particular attention was paid to the largest open pension funds in Poland. The two largest pension funds in Poland are: Nationale-Nederlanden OFE and Aviva OFE Aviva Santander. In 2021, their combined share of the pension fund market was almost 48%. Nationale-Nederlanden OFE's investment portfolio included 38.8% of companies listed on the Warsaw Stock Exchange. In turn, Aviva OFE Aviva Santander held shares in 27.2% of companies listed on the Warsaw Stock Exchange (Szewc-Rogalska, Wąsacz, 2024).

The research covered non-financial companies in which the largest pension funds, i.e. Nationale-Nederlanden OFE and Aviva OFE Aviva Santander (as at 2021), participated in the general meeting of shareholders. Companies listed on the Warsaw Stock Exchange for at least six years, i.e. between 2016 and 2021, were selected for the study. 72 companies met the criteria listed. It should be noted that the selected companies represented 33.3% of the total number of listed companies in which all OFEs operating in Poland held shares. The collected panel data included 364 observations, i.e. cases (company/year) in which pension funds participated in a given year at the general meeting of shareholders of the examined company. Cases with incomplete or unavailable data were excluded.

An arduous study followed, requiring the researchers to trace the communications from the AGMs. Those are available on finance websites such as bankier.pl and money.pl. Financial statements were sourced from the database of Emerging Markets Information Service Polska (EMIS Polska).

The study was conducted in three panels:

1) Panel A – all companies surveyed.
2) Panel B – companies where the total share of pension funds at the general meeting of shareholders is less than the median.
3) Panel C – companies where the total share of pension funds at the general meeting of shareholders is greater than the median.

The impact of pension funds on the financial performance of portfolio companies can be studied using both linear and non-linear models. For non-linear, those are usually second-degree polynomials (Sahut, Ghandi, 2010; Jiao, Ye, 2013) or third-degree ones (Szewc-Rogalska, 2012). Accordingly, the following models were proposed:

Model 1: *PERF* = function (*PF*, control variables).

Model 2: *PERF* = function (*PF*, PF^2, control variables).

Model 3: *PERF* = function (*PF*, PF^2, PF^3, control variables).

where:

PERF – a measure of the financial performance of portfolio companies,

PF – a measure of pension fund participation at the general meeting of shareholders of portfolio companies.

Tobin's Q ratio was used as a measure of financial performance of portfolio companies (similarly to Minquez-Vera, Martin-Ugedo, 2007; Ferreira, Matos, 2008; Sahut, Gharbi, 2010; Lin, Fu, 2017). This ratio was calculated as the sum of the market value of total shares and the book value of total liabilities, divided by the book value of total assets. The shareholding of pension funds was measured for all pension funds participating in general shareholder meetings together. Their percentage share of the total number of votes in the surveyed companies was determined. This method of measuring shareholder participation is particularly justified in the capital market in Poland (Szewc-Rogalska, 2012), which is characterised by a more concentrated control structure than ownership structure (cf. Adamska, 2013).

The models included the following control variables:

- ROA (Mishra, Modi, 2013; Kałdoński et al., 2020), determined as net financial result divided by total assets;
- leverage ratio (LEV) determined as total debt divided by total assets (Huang et al., 2007; Elyasiani, Jia, 2010; Kałdoński et al., 2020). Both asset profitability and debt level are important factors affecting the financial condition of enterprises and their ability to multiply the capital contributed by the shareholders (Fura, Szewc-Rogalska, 2018);
- SIZE measured as a natural logarithm of total assets (Sahut, Gharbi, 2010; Mishra, Modi, 2013; Lin, Fu, 2017). The size of a company may have a negative impact on its condition because of greater bureaucracy (Xu, Wang, 1999) and higher agency costs (Sun, Tong, 2003). Furthermore, large enterprises are less capable of responding flexibly to the changing market circumstances. However, larger companies may benefit

from the economies of scale, which is conducive to better financial performance. The impact of size on financial performance of companies is thus not equivocal (Lin, Fu, 2017).

To identify the outliers among the observations – before the estimation of the model – so-called Mahalanois distance was used (Kufel, 2013). Several cases were rejected because of Tobin's Q and ROA. Following rejection of the outliers, a total of 356 observations remained on the table. Basic statistics such as the average, median, standard deviation, coefficient of variation, minimum value and maximum value were calculated for each panel.

Next, the appropriate form of panel model was chosen. The following models were taken into account (Kufel, 2013; Verbeek, 2017):

- panel model (no separate identification of individual effects) estimated with the classical least squares method;
- fixed-effects panel model (FEM);
- random-effects panel model (REM).

In order to select the appropriate form of the panel model, the following statistical tests were applied: the Chow F-test, the Breusch-Pagan test, the Hausman test (Maddala, 2006; Kufel, 2013; Antczak, 2012). On this basis, it was determined that a panel model with fixed effects should be used for all panels (A, B, C). In addition, the Wald's heteroscedasticity test was performed (Maddala, 2006). Based on this, it was determined that there was heteroscedasticity of the random component in the models, which was corrected with robust HAC.

4. Results

Table 1 collates the basic statistics for the studied companies. Pension funds' share in the total number of votes in the firms ranged from 2.21% to 66.35%. One should explain that listed companies publish lists of shareholders with at least 5% of the vote in the AGM. There may exist cases in which a shareholder has more than 5% of the vote in the AGM but the shareholder's share in the total number of votes in the relevant company is less than 5%.

The average participation of pension funds (the PF variable) in the AGMs in the studied companies was around 16.9%. The median, on the other hand, was around 14.6%. On the basis of the median, two groups of companies were selected – those with less than 14.6% PF (Panel B) and those with more than 14.6% PF (Panel C). The average share in the former group was 8.9%, and in the latter group it was 24.8%.

Table 1.
Basic statistics for companies with pension-fund shareholders

Variables	Average	Median	Standard deviation	Coefficient of variability	Minimum value	Maximum value
Panel A: companies total (n = 356)						
Tobin's Q	1.33	1.05	0.91	0.68	0.41	9.07
PF	16.86	14.55	11.00	0.65	2.21	66.35
ROA	4.89	5.30	7.74	1.58	-32.88	44.30
LEV	48.72	49.22	18.00	0.37	2.65	91.05
SIZE	13.80	13.65	1.49	0.11	10.48	18.49
Panel B: companies with below-median participation of pension funds (n = 178)						
Tobin's Q	1.45	1.07	1.14	0.79	0.53	9.07
PF	8.91	9.22	2.87	0.32	2.21	14.45
ROA	4.48	5.24	9.26	2.07	-32.88	44.30
LEV	48.16	49.85	19.34	0.40	2.71	91.05
SIZE	13.52	13.37	1.51	0.11	10.48	17.69
Group C: companies with above-median participation of pension funds (n = 178)						
Tobin's Q	1.22	1.03	0.56	0.46	0.41	3.68
PF	24.80	21.70	10.38	0.42	14.64	66.35
ROA	5.29	5.35	5.83	1.10	-23.37	22.80
LEV	49.28	48.55	16.58	0.34	2.65	87.95
SIZE	14.08	13.84	1.42	0.10	11.57	18.49

Source: original studies.

In accordance with the methodology introduced in the previous section, the choice was made to use the fixed-effects panel model. The estimation was done both for linear and non-linear models (second-degree and third-degree polynomials). Subsequently, for each panel the best-fitting model was selected to describe the impact of pension funds on Tobin's Q (Table 2).

Table 2.
Fixed-effects panel models for Tobin's Q in companies with pension funds among the shareholders

Distinction	Panel A: companies total	Panel B: companies with below-median participation of pension funds	Panel C: companies with above-median participation of pension funds
Const	11.7941*** (4.865)	17.4141*** (4.394)	9.0940*** (3.540)
PF	-0.0049 (-1.145)	-1.6949* (-1.979)	-0.0121** (-2.217)
PF^2	X	0.1870* (1.965)	X
PF^3	X	-0.0064* (-1.924)	X
ROA	0.0202** (2.095)	0.0163** (2.555)	0.0400** (2.247)
LEV	0.0076* (1.683)	0.0040 (0.7947)	0.0112 (1.444)
SIZE	-0.7862*** (-4.376)	-0.8538*** (-2.895)	-0.5924*** (-3.134)
Number of observations	356	178	178
LSDV R-square	0.8733	0.9399	0.7485
Within R-square	0.2686	0.4643	0.2718
F statistic (p – value)	6.7987 (0.000)	5.9951 (0.000)	3.9322 (0.008)

Notes: ***, ** and * indicate significance at the 1%, 5% and 10% level, respectively.

Source: original studies.

In Panel A, the regression coefficient for PF is negative, suggesting that increased participation of pension funds in the total number of the votes has a negative impact on Tobin's Q. However, the coefficient is not statistically significant. Accordingly, an attempt was made to explain these relationships through more detailed studies covering Panel B and Panel C.

In companies with a lower participation of pension funds (Panel B), the studied relationships can be described with the use of a third-degree polynomial. It should be recalled that in this group PF ranges from 2.21% to 14.55% (cf. Table 1). Thus, the impact of pension funds on Tobin's Q was found to be positive in the 7.17% to 12.31% band. A negative impact, on the other hand, occurs when the participation of pension funds is less than 7.17% or greater than 12.31%.

In companies with a greater participation of pension funds (Panel C), the studied relationships can be described with the use of a linear function. Increased participation of pension funds in the total number of the votes was found to have a negative and statistically significant impact on Tobin's Q.

It should be noted that in the studied companies with pension funds among the shareholders (Panels A, B and C), ROA has a positive and statistically significant impact on Tobin's Q. The impact of SIZE on Tobin's Q is also statistically significant, albeit negative.

The studies show that for small participation of open pension funds in the AGM (from approx. 2.2% to nearly 7.2% of the vote), there are negative effects of the presence of pension funds (no positive effects). This may be the consequence of the investors' small shareholdings and thus limited ability to influence AGM decision-making. By contrast, holding 7.2% to 12.3% of the vote provides pension funds with more opportunity for realistic impact on AGM decision-making. With a greater participation level of open pension funds in the AGM (exceeding 12.3% of the vote), there is a negative impact of open pension funds on Tobin's Q. The presence of a larger number of open pension funds in the AGM can have the effect of compounding the difficulty of the achievement of a consensus and with it the exercise of effective corporate governance.

It should be emphasized that a pension fund is usually a minority shareholder. Accordingly, it is exposed to an agency conflict in relations both with the management and with the dominant shareholder. From the minority shareholder's position, there is a problem of information asymmetry increasing the difficulty level of the making investment decisions and the exercise of corporate governance (oversight). Agency conflicts often lead to tunnelling, which is detrimental to the well-being of minority shareholders.

The studies demonstrate that in companies having pension funds among their shareholders asset profitability has a positive and statistically significant impact on Tobin's Q. Such a correlation was found in all three panels. This means that in companies having pension funds as shareholders increased asset profitability is conducive to the achievement of a better market valuation as measured by Tobin's Q. On the other hand, it should be noted that the studied companies belong to the investment portfolio of the largest pension funds in Poland.

Those have invested enormous cash in the purchase of the shares of such companies, and their investment decision-making has to be attentive to the safety of the funds needed for future pension payouts. Due to their fiduciary nature, those funds carefully select the companies for the investment portfolio, paying attention to financial performance and development perspectives.

The investment portfolios of pension funds usually include a large number of listed companies. Pension funds have increasingly been adopting an active stance, participating in the AGMs of their portfolio companies. However, due to the large numbers of such companies and small shareholdings in each, there may be difficulties with access to direct corporate governance.

5. Discussions

The studies revealed that a non-linear relationship exists between pension funds' presence in the AGMs in the portfolio companies and the latter's financial results. The existence of a non-linear relationship is also confirmed by other studies (Aluchna 2007; Sahut, Gharbi 2010; Szewc-Rogalska, 2012; Jiao, Ye, 2013; Bosek-Rak, 2019). However, it must be emphasized that our studies were focused on one specific group of institutional investors, those being pension funds. The cited studies, by contrast, analysed the cumulative participation of institutional investors. Moreover, different measures of financial performance were used.

The studies show that a positive impact of pension funds on financial performance exists within a certain band, while both above and below that band negative effects of the presence of pension funds in the equity structures are observed. The results to a certain extent coincide with those of other studies into Poland's capital market (Aluchna, 2007; Szewc-Rogalska, 2012; Jiao, Ye, 2013; Bosek-Rak, 2019). The similarity of the results consists in showing that after a certain change point is crossed, the nature of the relationship between institutional investors and financial performance of portfolio companies changes. With the crossing of that point, a positive relationship turns into a negative relationship.

Original studies have demonstrated that the change point falls lower than in the case of other studies dealing with Poland's capital market. It should be explained that this is primarily the consequence of the method of study of institutional investors' participation. Existing studies (Aluchna, 2007; Szewc-Rogalska, 2012; Bosek-Rak, 2019) have dealt with the participation of investment funds, pension funds, insurance companies and other institutional investors jointly. Our original studies, by contrast, focused solely on pension funds, which currently hold the greatest share in market capitalization compared to other institutional investors. Moreover, existing studies have analysed the formal shares held by institutional investors in the ownership structures. Our studies, by contrast, analysed pension funds taking an active participation in

corporate governance and participating in AGMs. When comparing the results, one must also consider that the respective studies were pursued in different circumstances of functioning of Poland's capital market. The important factors include different chronological periods, different structure of institutional investors, legislative changes affecting the functioning of pension funds, and significant changes to the structures of pension funds' investment portfolios.

Pension funds and investment funds are reckoned among the group of institutional investors characterized by independence and ability to resist pressure. Most of existing studies dealing with different capital markets show insensitive investors to have a positive impact on the financial performance of companies (Ferreira, Matos, 2008; Elyasiani, Jia, 2010; Lin, Fu, 2017). Studies dealing with the French market (Sahut, Gharbi, 2010), in turn, reveal a negative impact of such investors on Tobin's Q, which, however, changes into positive impact after reaching the change point. Our original studies show that a positive impact of pension funds on Tobin's Q exists only within a specific band. When confronting the results of our studies with those of other authors', attention should be paid to several important factors. The nature of the individual capital markets may have a significant impact on the results. A considerable impact may belong to the development level of the capital market in question, the share held by institutional investors, the level of ownership concentration, the characteristics of the most important institutional investors, and the effectiveness of corporate governance.

6. Conclusions

This study endeavoured to determine the impact of selected institutional investors on the financial performance of portfolio companies in Poland in years 2016-2021. The research focused on pension funds, which are a very important subset of institutional investors in Poland. Pension funds currently hold approximately a 4.7 times greater share in the market capitalization at Warsaw Stock Exchange compared to investment funds. A key role is played by two largest open pension funds, viz. Nationale-Nederlanden OFE and Aviva OFE Aviva Santander. The studies concentrated on active pension funds, i.e. those participating in the company's AGM. The average share held by pension funds in the total number of votes in the studied companies was approximately 16.9%, and the maximum share was 66.4%.

Evaluation of the impact of institutional investors and especially pension funds on the financial performance of portfolio companies presents a considerable research challenge. This is a consequence of the complexity of the corporate governance mechanisms and difficulty with the unequivocal measurement of the studied relationships. Accordingly, this article proposed different research approaches, i.e. panels of companies with different levels of pension-fund participation in the AGM, as well as estimation of linear and non-linear models (especially third-degree polynomial).

The studies demonstrate that there exists a non-linear relationship between the participation of pension funds in the AGMs and the Tobin's Q of the studied companies. A positive impact of pension funds on this ratio exists when pension funds hold an approximately 7.2% to 12.3% share in the total number of votes. Both below and above this band, by contrast, one can observe the negative effects of the presence of pension funds in the AGMs. A negative impact can be seen primarily in companies with a relatively high cumulative shareholding by pension funds. There is a possibility that the presence of a large number of pension funds with smaller individual shareholdings makes effective corporate governance more difficult to achieve. In such ownership structures, a significant role is played by insiders, especially the managers of the portfolio companies. The intensification of agency conflicts may have a negative impact on the financial performance of such companies and value creation for shareholders, especially for the minority shareholders.

It is necessary to continue research on the impact of institutional investors, especially pension funds, on the financial performance of portfolio companies. The research conducted is of a pilot nature. Further research would need to include a larger number of portfolio companies and more control variables. To achieve more and better knowledge of the mechanisms of this impact, the studies should also consider the impact of other factors such as the ownership-concentration level, insider share in ownership structures, level of divergence between formal and effective control wielded by pension funds in AGMs, participation of other institutional investors in the ownership structures, the situation in the capital market, as well as the characteristics of the industry or sector in which the studied companies operate.

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