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# THE IMPACT OF PENSION FUNDS ON THE FINANCIAL PERFORMANCE OF PORTFOLIO COMPANIES

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**Purpose:** The purpose of this study is to examine the impact of pension funds on the financial performance of portfolio companies. It is particularly important to determine whether an increase in pension fund participation at general shareholder meetings leads to a mitigation of agency conflicts and thus to an improvement in the financial performance of portfolio companies.
**Design/methodology/approach**: The study covered 72 non-financial companies included in the investment portfolio of the largest pension funds. These were companies listed on the Warsaw Stock Exchange for at least six years, i.e. from 2016 to 2021. The adjusted return on assets ratio was adopted as a measure of financial performance. Three models were estimated, each using a different set of control variables.
**Findings:** It was found that the total share of pension funds at general shareholders' meetings has a positive and statistically significant effect on the adjusted return on assets of the portfolio companies. By exercising their voting rights at general meetings, pension funds exert effective control over the portfolio companies. The findings provide evidence supporting the hypothesis of effective monitoring of portfolio companies by pension funds.
**Research limitations/implications**: The conducted research is of a pilot nature. Further research should incorporate a larger number of portfolio companies and a broader set of control variables. Moreover, it would be worthwhile to examine whether the relationships under study may be of a non-linear character.
**Practical implications:** The article provides arguments concerning the effectiveness of corporate governance exercised by pension funds. The findings are relevant for scholars working in this field, as well as for pension fund managers and both current and potential investors.
**Originality/value:** The added value of this paper lies in investigating the impact of pension funds on mitigating agency conflicts in portfolio companies. Important novel elements include the analysis of pension fund participation at general shareholders' meetings and the fundamental assessment of the financial performance of companies.
**Keywords:** pension funds, corporate governance, return on assets.
**Category of the paper:** Research paper.

## Introduction

Pension funds constitute one of the most important groups of institutional investors in the Polish capital market. The significance of pension funds among institutional investors acquiring shares in listed companies increased markedly after another pension market reform in 2013 (Ustawa z dnia 6 grudnia 2013 r…., 2013).

Pension funds account for 20.6% of the market capitalisation of companies listed on the Warsaw Stock Exchange, and 41.8% of the *free float*. In contrast, the share of investment funds is respectively: 4.3% and 9% (NBP, 2022). Pension funds therefore have a substantially larger share in both market capitalisation and *free float* than investment funds.

Pension funds demonstrate a high level of engagement in corporate governance over the portfolio companies. This is evidenced by their significant participation at general shareholders' meetings and their active submission of resolution proposals at AGMs. The three largest pension funds (Sołdek, 2022a, 2022b, 2023; Szewc-Rogalska, Wąsacz, 2024) show a particularly strong involvement.

A distinctive feature of the institutionalisation of corporate ownership in Poland is the substantial share of pension funds in institutional ownership. Consequently, it is important to examine the implications of this process, especially to determine whether pension funds mitigate agency conflicts in listed companies. It is essential to assess whether, and to what extent, pension fund involvement in corporate governance contributes to improving the financial performance of portfolio companies.

Previous theoretical considerations and empirical studies on the Polish capital market have typically focused on assessing the role of institutional investors in corporate governance. Institutional investors were treated as a homogeneous group (Szewc-Rogalska, 2017; Bosek-Rak, 2019; Błoch et al., 2020, Kałdoński et al., 2020; Aluchna, Kuszewski, 2021a). In contrast, analyses of the importance of pension funds in corporate governance are relatively rare (Słomka-Gołębiowska, 2014; Sołdek, 2022a, 2022b, 2023; Szewc-Rogalska, Wąsacz, 2024). Existing research on the impact of pension funds on the financial performance of portfolio companies in Poland is limited. Furthermore, they only cover the years 2011-2016 and therefore do not reflect current conditions (Kałdoński, Jewartowski, 2024), or focus exclusively on market-based measures of financial performance (Szewc-Rogalska, 2024). This paper therefore attempts to fill this research gap.

The main objective of this study is to attempt to examine the influence of pension funds on the financial performance of portfolio companies. It is particularly important to determine whether an increase in pension fund participation at general shareholder meetings leads to a mitigation of agency conflicts and thus to an improvement in the financial performance of portfolio companies.

The added value of this work lies in analysing the impact of pension funds on mitigating agency conflicts in portfolio companies. Most previous studies adopt a market-based approach and use Tobin's Q as a measure of the market value of companies. An important innovative element of this study, however, is the focus on a fundamental approach and the examination of portfolio companies' return on assets (ROA).

The structure of the subsequent sections of the work is as follows. The second part of the paper presents a literature review and an analysis of existing research findings. The third part outlines the research methodology. The fourth section presents the empirical research results followed by a discussion in section five. The final part of the study provides a summary, research limitations, and directions for further studies.

## Literature review

Pension funds are classified as institutional (financial) investors. The literature offers various definitions and approaches to institutional investors. However, the most common approach includes pension funds, investment funds, insurance companies, and banks within this group (Ferreira, Matos, 2008; Sahut, Gharbi, 2010; Elyasiani, Jia, 2010). The main task of pension funds is to provide a special category of services, including the financing of pensions, medical treatment, and compensation for accidents (Sopoćko, 2005). The assets accumulated by pension funds are frequently allocated to long-term investments. The structure of the investment portfolio of pension funds also contains shares of listed companies, with their share depending, among other factors, on the legal regulations of the pension system. The fiduciary nature of pension funds' activities gives them the grounds and the capacity to exercise effective corporate governance over the portfolio companies.

The theoretical foundations for analysing the impact of pension funds and other institutional investors on the financial performance of portfolio companies derive from agency theory (Jensen, Meckling, 1976; Shleifer, Vishny, 1997). According to the agency theory, two types of agency conflicts may arise. In the case of dispersed ownership, the conflict occurs between the principal and the agent, that is, between shareholders (investors) and the corporate managers. In contrast, in the case of concentrated ownership, the conflict arises between principals themselves, i.e. the conflict between majority and minority shareholders.

In both dispersed and concentrated ownership structures, there is a significant risk of the expropriation of minority shareholders. Managers and majority shareholders may extract private benefits of control (Leuz at al., 2003; Gopalan, Jayaraman, 2012). The occurrence of agency conflicts leads to various types of agency costs. Actual and alternative costs of agency lead to a reduction in the welfare of minority shareholders. Therefore, mitigating these agency conflicts is of key importance. A major role in this process is attributed to institutional investors,

particularly pension funds and investment funds. In research on the role of institutional investors in corporate governance, three hypotheses are formulated. The literature mentions the efficient-monitoring hypothesis, the conflict-of-interest hypothesis and the strategic-alignment hypothesis (Pound, 1988; Aluchna, Kuszewski, 2021a; Kulkarni, Hyderabad, 2023).

The efficient-monitoring hypothesis assumes that pension funds and other financial investors exercise effective corporate governance over portfolio companies. They invest substantial capital resources in these companies and possess extensive experience, professionalism, and access to information, enabling them to monitor portfolio company managers effectively. They have considerable expertise in investment management and frequently participate in making informed voting decisions at general meetings of shareholders. They are more competent in monitoring the performance of portfolio companies than dispersed shareholders. As a result, pension funds and other institutional investors can mitigate agency problems, which may lead to improved performance and higher value of portfolio companies (Kulkarni, Hyderabad, 2023).

The efficient-monitoring hypothesis therefore predicts a positive relationship between institutional investors' ownership and the performance of portfolio companies (Kulkarni, Hyderabad, 2023; Aluchna, Kuszewski, 2021a; Nagel et al., 2015; Mehrani et al., 2017). Effective corporate governance results in better operational performance and higher value of the companies, as well as a reduction in managerial tendencies towards overinvestment (Fereira and Matos, 2008). Numerous studies support the efficient-monitoring hypothesis. These studies show a positive impact on financial investors, on the performance and value of portfolio companies (Thomsen, Pederson, 2000; Elyasiani, Jia, 2010: Yuan et al., 2008; Lin, Fu, 2017).

The conflict-of-interest hypothesis assumes that institutional investors such as banks and insurance companies are involved in portfolio companies as lenders, insurers and providers of financial service. This generates conflicts of interest and disrupts the monitoring role of these investors. As a result of the conflict of interest, in many cases they may side with the board. Business relationships between institutional investors and the managers of portfolio companies may lead to passivity and opportunism on the part of these investors. The strategic-alignment hypothesis assumes that institutional investors and company management will cooperate for mutual benefits, which may cause negative consequences for the performance of portfolio companies (Kulkarni, Hyderabad, 2023). According to the conflict-of-interest hypothesis and the strategic-alignment hypothesis, institutional investors do not have a positive impact on the management and performance of portfolio companies. Negative effects on the value of portfolio companies may be observed (Shin-Ping, Tsung-Hsien, 2008).

When testing these hypotheses, attention is drawn to the heterogeneity of institutional investors. Investment funds and pension funds are classified as institutional, independent investors, insensitive to pressure from the business environment. Business ties are primarily characteristic for such groups of institutional investors as banks and insurance companies.

They are treated as pressure-sensitive institutional investors (Ferreira, Matos, 2008; Sahut, Gharbi, 2010; Elyasiani, Jia, 2010).

The research shows that ownership by independent institutions has a positive and statistically significant effect on ROA and net profit margin. In contrast, the ownership by financial institutions such as banks and insurance companies has no significant impact on the increase in the value of companies (Ferreira, Matos, 2008). Also Firth et al. (2016) found that pressure-insensitive institutional ownership exerts a positive influence on the performance of these companies. Whereas pressure-sensitive institutional ownership has no positive effect on the performance of the companies examined.

Elyasiani and Jia (2010), on the other hand, concluded that so-called pressure-insensitive institutional investors have a stronger positive impact on investment return rate than pressure-sensitive institutional investors. Lin and Fu (2017) found that pressure-insensitive, foreign and large-shareholding institutional investors have a greater positive impact on company performance than pressure-sensitive, domestic and small-shareholding investors. Sahut and Gharbi (2010) identified a negative relationship between the share of pressure-sensitive institutional investors and Tobin's Q index.

The mechanisms through which pension funds and other institutional investors influence the performance of portfolio companies are highly complex. In addition to the aspects discussed so far, other factors must also be considered, such as the ownership structure of pension funds, the degree of involvement in corporate governance, the monitoring strategies employed, and the size of shareholdings. Woidtke (2002), for example, takes into account the ownership diversity of pension funds and distinguishes between private and public pension funds. The author verifies both the efficient-monitoring hypothesis and the political-influence hypothesis. The author finds that private pension funds positively impact the value of portfolio companies, whereas public pension funds have a negative effect. In the case of public pension funds, the mechanisms described by the political-influence hypothesis play a significant role.

Pension funds and other institutional investors may use different strategies to monitor portfolio companies, thus distinguishing between active and passive investors. Active investors are interested in exercising control and – through active participation in general shareholder meetings – can apply a voting strategy. Passive investors, on the other hand, often limit themselves to employing an exit strategy from portfolio companies (Adamska, Urbanek, 2014). Aluchna and Kuszewski (2021a) distinguish between control-oriented financial investors (shareholdings of 10% or more) and portfolio-oriented financial investors (shareholdings below 10%). They found that ownership by control-oriented financial investors has a positive effect on the value of companies. Whereas ownership by portfolio-oriented financial investors has no significant impact on the value of companies.

The role of pension funds in corporate governance may depend significantly on the size of their shareholdings. It is assumed that minority shareholders generally adopt a short investment horizon and tend to focus on short-term gains. They adopt a passive attitude and are not

interested in exercising direct corporate governance. In contrast, majority shareholders tend to have a longer investment horizon, adopt a proactive attitude and are interested in monitoring portfolio companies. The high concentration of ownership enables them to internalise most of the benefits achieved by monitoring the portfolio company managers (Sundaramurthy et al., 2005; Cornett et al., 2008).

Accordingly, depending on the size of their shareholdings, the shareholders may display different attitudes and strategies. For example, Sahut and Gharbi (2010) found that in the French market, the impact of total institutional ownership on Tobin's Q is non-linear. For smaller shareholdings, a negative relationship was observed, whereas – after a certain threshold had been exceeded – a positive relationship emerged. The findings indicate that, in the case of large institutional shareholdings, an efficient-monitoring strategy is pursued.

However, excessive ownership concentration may be detrimental. Once a certain threshold is exceeded, an entrenchment effect becomes apparent (Claessens et al., 2002). This is confirmed, among others, by Jiao and Ye (2013), who found that the relationship between the share of public pension funds in the equity of portfolio companies and company performance was positive when these funds had moderate shareholdings. In contrast, when pension funds had very large shareholdings, different effects were observed.

Previous empirical research has not produced conclusive results concerning the impact of institutional investors, particularly pension funds, on the financial performance of portfolio companies. This is attributable to the complexity of corporate governance mechanisms and the diversity of institutional investors. Moreover, studies adopt various measures of the financial performance of portfolio companies. The most common is the Tobin's Q ratio, which reflects financial performance from a market perspective. In contrast, fewer studies consider measures of financial performance from a fundamental perspective (e.g. return on assets). Therefore, this paper examines pension funds as a specific group of institutional investors and focuses on one corporate governance mechanism – active participation at general meetings of shareholders. Additionally, it investigates the influence of pension funds on the financial performance of portfolio companies from a fundamental perspective.

## Research methods

The research sample consisted of non-financial companies included in the investment portfolios of the two largest pension funds (as at 2021). In 2021, the largest pension funds in Poland were: Nationale-Nederlanden OFE and Aviva OFE Aviva Santander. Their total share of the pension fund market amounted to almost 48%. Nationale-Nederlanden OFE held shares in 38.8% of the companies listed on the Warsaw Stock Exchange, while Aviva OFE Aviva Santander held shares in 27.2% of listed companies (Szewc-Rogalska, Wąsacz, 2024).

The research covered non-financial companies over which the above pension funds exercised corporate governance, among other things through participation at general meetings of shareholders (as at 2021). The analysis included companies listed on the Warsaw Stock Exchange for at least six years, i.e. between 2016 and 2021. A total of 72 companies met these criteria. It should be emphasised that the selected companies represented 33.3% of all listed companies in which open pension funds operating in Poland held shares. Cases with incomplete or unavailable data were excluded. In addition, extreme outliers were removed, i.e. where return on assets was below -100% or above 100%, and where the return on sales exceeded 300%. The final number of panel data (company / year) was 360 observations.

It should be clarified that the study period 2016-2021 was selected due to the construction of the sample based on the composition of pension fund portfolios in 2021. Including six consecutive years retrospectively allows the long-term nature of corporate governance exercised by pension funds to be captured. Moreover, the adopted time horizon covers a period of significant institutional and macroeconomic changes, which makes it possible to assess the robustness of the obtained results.

The financial statements of the companies examined were obtained from the Emerging Markets Information Service Poland (EMIS Poland) database. Information on the shareholder structure at general shareholders' meetings was collected on the basis of the announcements of the general shareholders' meetings. This required extensive work and the construction of a database of announcements published on financial portals such as bankier.pl and money.pl.

Table 1 presents the variables used in the analysis. The following categories of variables were distinguished: firm performance variable, ownership structure variable, firm-level control variables and robustness test variables.

**Table 1.**
*Variables used in the analysis*

| Variables | Variable description |
|---|---|
| Firm Performance Variable | |
| ROAadj | Sector-adjusted and time-adjusted return of assets ratio (w %) |
| Ownership Structure Variable | |
| TOTAL PF | Total share of pension funds in the total number of votes at the general meeting of shareholders (%) |
| Firm-level Control Variables | |
| Ln(Assets) | The natural logarithm of total assets (total assets in thousands of PLN) |
| SALES GROWTH | Growth rate in net sales (w %) |
| CASH/Total Assets | Cash and short-term investments divided by total assets (w %) |
| CAPEX/Total Assets | Capital expenditures divided by total assets (w %) |
| Robustness Test Variables | |
| Ln(DEBT) | The natural logarithm of total debt (total debt in thousands of PLN) |
| LEVERAGE | Total debt divided by total assets (w %) |

Source: Author's own creation.

Return on assets (ROA) was adopted as a measure of financial performance (Homanen, Liang, 2018). An adjustment procedure was applied to the ROA ratio based on the median value (Vintila et al. 2014; Aluchna, Kuszewski, 2021b). For ROA, the procedure is as follows:

$$ROAadj_{it} = ROA_{it} - medianROA_{SE,t}, \quad (1)$$

where:
i = 1, 2, …, 72,
t = 1, 2, …, 6,
SE – the sector to which the company belongs.

The adjusted ROA value was calculated as the difference between the original ROA of a company and the median ROA in a sector for a given year. The research took into account how the companies are grouped according to the classification used by the Warsaw Stock Exchange (GPW, 2022). Seven sectors were distinguished:

- fuels and energy,
- chemicals and raw materials,
- industrial and construction production,
- consumer goods,
- trade and services,
- health care,
- technology (software, information systems).

The variable describing ownership structure was defined as the share held by all pension funds participating at general meetings of shareholders. Their percentage share in the total number of votes in the analysed companies was calculated. This approach to assessing shareholder involvement is particularly justified for the Polish capital market (Szewc-Rogalska, 2012), which is characterised by greater concentration of control than of ownership (Adamska, 2013).

Firm-level control variables were also used, i.e. asset size (Sahut, Gharbi, 2010; Mishra, Modi, 2013; Lin, Fu, 2017; Aluchna, Kuszewski, 2021a), SALES GROWTH, CASH/Total Assets, CAPEX/Total Assets (Homanen, Liang, 2018). The variable ln(Assets) is often regarded as one that may give rise to endogeneity problems (Aluchna, Kuszewski, 2021a, 2021b). Therefore, in the estimation of one of the models, this variable was omitted to see whether its exclusion would affect the results obtained. In addition, a robustness check was carried out to determine the extent to which the findings are resilient to alternative measures. Robustness tests were carried out with respect to different control variables, specifically Ln(DEBT) and LEVERAGE level (Aluchna, Kuszewski, 2021a; Huang et al., 2007; Elyasiani, Jia, 2010; Kałdoński et al., 2020).

For each variable, basic statistics were calculated, including mean, median, standard deviation, minimum value, maximum value and skewness. Panel A reports descriptive statistics prior to the winsorisation of the variables, while Panel B presents the statistics after winsorisation. All variables were winsorised at the 1st and 99th percentiles. This method is widely applied in the corporate finance literature (Homanen, Liang, 2018; Leone et al., 2019;

Carline et al., 2024). The use of winsorisation improves the stability of parameter estimates in regression models. The models were first estimated using the data from Panel A, followed by additional estimations based on the data from Panel B. This procedure allowed for an assessment of the robustness of the estimation results to outliers observations.

Subsequently, the appropriate form of the panel model was selected. The following models were considered (Kufel, 2013; Verbeek, 2017):

- a panel model (without distinguishing individual effects), estimated using the classical least squares method,
- the fixed effects model (FEM),
- the random effects model (REM).

In order to select the appropriate panel model form, the following statistical tests were applied: the Chow F-test, the Breusch-Pagan test, and the Hausman test (Maddala, 2006; Kufel, 2013). In addition, the Wald test for heteroscedasticity was performed (Maddala, 2006). Based on this, it was determined that the heteroscedasticity of the model random component was present in the models, what was corrected by introducing robust standard errors (robust HAC). The statistical calculations were carried out using the GRETL programme.

## Results

Table 2 presents the basic statistics for all variables. The total participation of the pension funds at the general meetings of shareholders in the companies under study ranged from 2.2% to approximately 66.4% of the overall number of votes (Panel A). It should be noted that listed companies publish information on their shareholders holding at least 5% of the votes represented by investors at the general meeting of shareholders. At the same time, there may be isolated cases in which a shareholder holds at least 5% of the votes at the annual general meeting but their share in the total number of votes is below 5%.

The total share of pension funds in the overall number of votes at general meetings of shareholders was approximately 16.7%. The median was around 14.3%. The distribution of pension fund holdings was right-skewed, meaning that for most companies examined, the total share of pension funds was lower than the average.

The mean values of the variables included in the analysis were higher than the medians. Only the LEVERAGE variable was an exception. The variables considered in the analysis exhibited right-skewness (except for LEVERAGE). Right-skewness was particularly pronounced for two variables, namely ROAadj and CASH/Total Assets.

Panel B presents descriptive statistics for the winsorised variables. Winsorisation reduced the influence of outliers and led to a decrease in the skewness of most of the analysed variables, especially ROAadj, CASH/Total Assets, and SALES GROWTH.

**Table 2.**
*Variables used in the analysis*

| Variables | Average | Median | Minimum value | Maximum value | Standard deviation | Skewness |
|---|---|---|---|---|---|---|
| Panel A: Data prior to winsorisation | | | | | | |
| ROAadj | 0.371 | 0.000 | -54.475 | 86.600 | 11.599 | 3.215 |
| TOTAL PF | 16.741 | 14.255 | 2.210 | 66.350 | 10.977 | 1.675 |
| Ln(Assets) | 13.748 | 13.644 | 10.237 | 18.486 | 1.522 | 0.742 |
| SALES GROWTH | 9.197 | 7.473 | -89.528 | 194.490 | 27.579 | 1.558 |
| CASH/Total Assets | 10.104 | 5.885 | 0.000 | 73.107 | 10.862 | 2.290 |
| CAPEX/Total Assets | 4.475 | 3.596 | -12.797 | 20.583 | 4.809 | 0.351 |
| Ln(DEBT) | 12.913 | 12.857 | 7.794 | 17.808 | 1.786 | 0.101 |
| LEVERAGE | 48.080 | 49.004 | 2.650 | 91.045 | 18.418 | -0.077 |
| Panel B: Winsorised data at the 1st and 99th percentiles | | | | | | |
| ROAadj | 0.159 | 0.000 | -28.938 | 49.169 | 8.667 | 1.509 |
| TOTAL PF | 16.728 | 14.255 | 3.834 | 59.610 | 10.887 | 1.626 |
| Ln(Assets) | 13.748 | 13.644 | 10.688 | 17.944 | 1.509 | 0.737 |
| SALES GROWTH | 8.914 | 7.473 | -58.043 | 104.170 | 24.711 | 0.803 |
| CASH/Total Assets | 9.983 | 5.885 | 0.000 | 48.472 | 10.317 | 1.946 |
| CAPEX/Total Assets | 4.479 | 3.596 | -8.313 | 17.598 | 4.709 | 0.400 |
| Ln(DEBT) | 12.912 | 12.857 | 8.307 | 17.116 | 1.769 | 0.098 |
| LEVERAGE | 48.092 | 49.004 | 7.704 | 86.745 | 18.265 | -0.068 |

Source: original studies.

Following the methodology outlined in the previous section of this paper, it was established that a fixed-effects panel model should be selected. For both Panel A and Panel B, the models were estimated using different sets of control variables (Table 3).

**Table 3.**
*Fixed-effects panel models for ROAadj in companies with pension funds, among the shareholders (robust HAC)*

| ROAadj | Panel A | | | Panel B | | |
|---|---|---|---|---|---|---|
| | Model (1) | Model (2) | Model (3) | Model (4) | Model (5) | Model (6) |
| TOTAL PF | 0.135** (0.055) | 0.137** (0.056) | 0.123** (0.060) | 0.126** (0.055) | 0.122** (0.055) | 0.119* (0.060) |
| Ln(Assets) | 0.165 (2.006) | X | X | -0.392 (1.569) | X | X |
| SALES GROWTH | 0.056** (0.023) | 0.056** (0.022) | X | 0.063*** (0.021) | 0.063*** (0.021) | X |
| CASH/Total Assets | 0.120 (0.097) | 0.119 (0.093) | X | 0.132 (0.079) | 0.133* (0.079) | X |
| CAPEX/Total Assets | -0.007 (0.149) | -0.008 (0.152) | X | 0.002 (0.136) | 0.005 (0.141) | X |
| Ln(DEBT) | X | X | 3.177** (1.521) | X | X | 2.664** (1.327) |
| LEVERAGE | X | X | -0.325*** (0.096) | X | X | -0.283*** (0.076) |
| Const | -5.852 (27.923) | -3.596** (1.664) | -27.093* (15.895) | 1.561 (21.326) | -3.801** (1.455) | -22.603 (14.490) |
| Number of observations | 360 | 360 | 360 | 360 | 360 | 360 |
| LSDV R-square | 0.768 | 0.768 | 0.774 | 0.707 | 0.707 | 0.707 |
| Within R-square | 0.080 | 0.080 | 0.103 | 0.107 | 0.106 | 0.107 |

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

Source: original studies.

Based on the data from Panel A, models (1)–(3) were estimated. In estimating Model (1), four control variables were included: Ln(Assets), SALES GROWTH, CASH/Total Assets and CAPEX/Total Assets. Model (1) indicates that an increase in the total share of pension funds in the overall number of votes at the general meeting of shareholders exerts a positive and statistically significant effect on return on assets (ROAadj). Moreover, the sales growth rate (SALES GROWTH variable) significantly affects the increase in asset profitability in the companies examined.

In the estimation of model (2), the variable ln(Assets) was omitted, as it is often considered as a variable causing endogeneity problems (cf. Aluchna, Kuszewski, 2021a, 2021b). The results obtained by using Model (2) were highly consistent with those obtained from Model (1). It was found that an increase in the total share of pension funds in the overall number of votes at the general meeting of shareholders exerts a positive and statistically significant effect on return on assets (ROAadj).

For model (3), a different set of control variables was applied, i.e. the variables Ln(DEBT) and LEVERAGE. The use of alternative control variables also confirmed the previous key results obtained from models (1) and (2). For Model (3), it was also established that the participation of pension funds at general meetings has a positive and statistically significant impact on the adjusted return on assets (ROAadj).

Based on the data from Panel B, models (4)-(6) were estimated. The results obtained from these models confirm that an increase in the aggregate share of pension funds in the total voting rights at the general meeting of shareholders exerts a positive and statistically significant effect on return on assets (ROAadj).

The coefficient for the variable TOTAL PF remains positive and statistically significant across all models. Its value is very similar between the models, indicating a high stability of the estimates. After applying a more restrictive treatment of outliers observations, the estimates remain stable in terms of sign and exhibit lower variability. A comparison of models (1)-(3) with models (4)-(6) indicates a high robustness of the estimation results. The coefficient values in the second set of models are slightly lower, but remain very similar across specifications. Moreover, the sign and economic interpretation of the effect do not change. The coefficients in models (4)-(6) show lower variability, which indicates greater robustness of the estimates after winsorising the variables.

## Discussions

The conducted research shows that the aggregate participation of pension funds at general meetings of shareholders exerts a positive and statistically significant impact on the financial performance of portfolio companies. The estimation results of the six panel models – using

different datasets and sets of control variables – are consistent in terms of the direction and statistical significance of the relationships examined.

These findings suggest that pension funds participating at general meetings of shareholders are oriented towards exercising corporate governance in portfolio companies. By using their voting rights at general meetings, they perform effective control over the portfolio companies. The findings provide evidence supporting the hypothesis of effective monitoring of portfolio companies by pension funds.

The positive impact of institutional investors (including pension funds) on the financial performance of listed companies is also confirmed by the results of other studies (Ferreira, Matos, 2008; Elyasiani, Jia, 2010; Firth et al., 2016, Aluchna, Kuszewski, 2021a; Kulkarni, Hyderabad, 2023). It should be noted, however, that the cited studies analyse the aggregate share of institutional investors, whereas the present research focuses on pension funds. Moreover, different measures of the financial performance of portfolio companies were typically used.

The findings of the present study show that the relationship between the share of pension funds and the financial performance of portfolio companies can be described by a linear function. It was established that the positive impact of pension funds on the return on assets of portfolio companies occurs throughout the entire range of aggregate pension fund shareholdings at general meetings. In contrast, some other studies (Jiao, Ye, 2013; Szewc-Rogalska, 2024) have found that the relationship between the pension fund participation and financial performance may be non-linear. In the case of a non-linear relationship, the positive influence of pension funds is observed only within a certain range.

When comparing the results of this study with those of other authors, certain limitations must be taken into account. In this study, the adjusted return on assets was adopted as a measure of financial performance, whereas other studies included, i.a., return on stock (Jiao, Ye, 2013), Tobin's Q ratio (Szewc-Rogalska, 2024). This implies that different aspects of financial performance were taken into account. The present study considered financial performance from a fundamental perspective, while the cited studies approached it from a market perspective. It should be noted that in the latter approach, the financial performance of portfolio companies may depend to a greater extent – compared with the former approach – on the expectations and reactions of investors in the capital market. This may influence the varied nature of the relationships studied.

## Conclusions

This paper attempts to examine the impact of pension funds on the financial performance of portfolio companies in Poland between 2016 and 2021. In this period, the key role was played primarily by the two largest pension funds, Nationale-Nederlanden OFE and Aviva OFE Aviva Santander. The research focused on active pension funds that exercised corporate governance over portfolio companies, including through their participation at general meetings of shareholders. It was found that the total share of pension funds at the general meetings of the companies under study amounted, on average, to 16.7%, while the maximum level reached 66.4%.

The conducted research indicates a linear relationship between the share of pension funds and the level of the adjusted return on assets in the companies examined. The estimation results of six models, conducted using different datasets and sets of control variables, demonstrate a positive and statistically significant impact of the aggregate share of pension funds on the financial performance of the companies analysed.

The findings show that the engagement of pension funds in corporate governance and their participation at general meetings of shareholders has positive effects. This implies that pension funds may play an important role in mitigating agency conflicts within portfolio companies. The findings provide evidence supporting the hypothesis of effective monitoring of portfolio companies by pension funds.

It is essential to continue research into the impact of pension funds on the financial condition of portfolio companies. The present study is a pilot study; therefore, future research should incorporate a larger number of listed companies and a different set of control variables. Moreover, it would be worth considering a more detailed analyses to verify whether the examined relationships may exhibit a non-linear character.

The findings have important implications for both theory and practice. The article is part of the discussion on corporate governance mechanisms in emerging markets. It provides evidence concerning the effectiveness of monitoring exercised by pension funds. It highlights the positive influence of pension fund activism on the return on assets of portfolio companies. The use of voting rights by pension funds at general meetings of shareholders leads to the mitigation of agency conflicts in listed companies. The article provides recommendations for policymakers regarding the support and improvement of the institutional environment.

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