ORIGINAL ARTICLE

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Managerial ownership and catering to investor sentiment for dividends: evidence from the electromechanical industry sector on the Warsaw Stock Exchange

Abstract

Research background: Dividends have been the subject of scientific research for decades. However, many aspects of payout policy are still controversial, and research provides contradictory results. One research area is the impact of the ownership structure on dividend policy. Although many scientific studies on this subject have been conducted, there is still a lack of research on the impact of managerial ownership on adjusting the dividend payout to investor sentiment. It was this research gap that motivated us to investigate the issue.

Purpose of the article: The aim of the paper is to evaluate how managerial ownership affects the disposition of companies to adjust their dividend payouts to investor sentiment. Achieving that objective provides stock market investors with additional information and allows for its practical implications as they seek the best investment opportunities.

Methods: The main method of investigation is a panel regression model with random effects. This model is used based on the Breusch-Pagan test and the Hausman test, while the information criteria of Akaike, Schwarz, and Hannan-Quinn are also taken into consideration. Additionally, descriptive statistics and the Pearson correlation coefficient are used. The research sample consists of Polish companies from the electromechanical industry sector that are listed on the main market of the Warsaw Stock Exchange (WSE) in the period 2009–2018.

Findings & Value added: Our findings reveal that: 1) an increase in dividend premium results in a higher payout in order to cater to investor sentiment; 2) if the manager holds the greatest num-

ber of shares, the catering effect weakens. The main contribution of the paper is a new approach to the catering theory of dividends, which includes the impact of managerial ownership.

Introduction

As companies develop and pass through the subsequent stages of the business life cycle, not only do their capital needs, investment opportunities, and ways of raising capital change, but ownership structures and management methods also evolve. A natural consequence of a company's development is to go through the successive stages of the ownership structure evolution. In the model approach, this transition takes place from individual ownership through managerial capital to institutional ownership (Bojańczyk, 2010, pp. 90–93). This conversion of ownership structure implies changes in business management. One of these changes is the separation of ownership and management, i.e., running the company by qualified managers (agents) who were hired by the owners (principals). Managing the company by people other than its owners may result — especially in a maturity stage of business life cycle, when the company is large and profitable, and its investment opportunities decrease (DeAngelo *et al.*, 2006, pp. 227–254) — in a conflict of interest that results from the divergence of the agents' and principals' objectives. Both sides strive to maximize their own utility by achieving their particular goals. Shareholders expect to maximize their financial benefits, manifested by an increase in market share price and dividend payouts. In turn, managers want to maximize their own benefits, i.e., they expect job security and job retention, a higher salary, the prestige associated with the job position, and greater power. Conflicts of interest emerge and intensify when these goals diverge, which was described in the agency theory formulated by Jensen and Meckling (1976, pp. 305–360), who argued that managers are usually imperfect agents who focus on their own interests instead of achieving the owners' goals. Therefore, owners are forced to bear the costs of monitoring managers' behavior. These costs are known as agency costs or brokerage costs. Agency costs can be reduced by mitigating the agency problem by using dividend payouts. Easterbrook (1984, pp. 650–659) argues that dividend payouts require the company to raise new funds from the capital market. In order to do this, companies must submit to the assessment, control, and discipline of that market (Michaely & Roberts, 2012, pp. 712–746). Thus, dividend payouts increase the external (market) control over managers. In turn, Jensen (1986), formulating the free cash flow theory, stated that the agency problem is caused by having high free cash flows, which protects managers against external control of the capital market. Furthermore, having high free cash flows moti-

vates managers to increase the company's size and, as a consequence, to overinvest them. As Bhattacharyya said (2007, pp. 4–13), instead of investing capital in low-return projects, owners prefer to distribute it as a dividend, which reduces the agency costs associated with a high level of free cash.

Reducing agency costs may also involve the ownership structure. According to the monitoring hypothesis (Rozeff, 1982, pp. 249–259; Gugler & Yurtoglu, 2003, pp. 731–758), the conflict of interest may be limited as a result of actions taken by large shareholders (i.e., block shareholders, dominant investors). Concentrated ownership should aim to control the use of financial resources and solve the free-riding problem (Neves, 2014, p. 36) by stopping investment in low return projects and increasing the distribution of earnings in the form of a dividend. Such actions of a dominant investor should be carried out in order to protect minority shareholders and implement the principle of equal treatment. However, this is not always the case, especially in civil-law countries where the protection of minority shareholders is insufficient (Aluchna *et al.*, 2019, p. 244). Large shareholders often realize private benefits of control at the expense of minority shareholders through, *inter alia*, expropriation, rent extraction tunneling, and self-dealing (Bałtowski, 2017, p. 30). As a result, the dividend payout decreases, which in turn leads to the principal-principal conflict.

Therefore, the solution to the agency problem is seen in managers holding shares, which should lead to the convergence and alignment of insiders' and outsiders' interest. However, as Shleifer and Vishny (1986, pp. 461–488) suggested, this relationship is non-monotonic. This means that at lower levels of managerial ownership, managers identify with minority shareholders, and their goals become convergent (the convergence effect). Therefore, acting in their own interest, managers also realize the objectives of minority shareholders, which is manifested, *inter alia*, in dividend payouts. However, as the concentration of managerial ownership increases, managers start to behave like large shareholders and the entrenching effect is observed (Neves, 2014). It can be assumed that it is rational for managers to behave in this way because they strive to maximize their financial benefits. However, the rationality of managerial behavior can also be seen in a different way, i.e., in the context of behavioral finance. The catering theory of dividends assumes that rational managers respond to investor sentiment, and they pay dividends when the capital market rates dividend payers higher than non-payers, and avoid payouts otherwise (Baker & Wurgler, 2004a, pp. 1125–1165; 2004b, pp. 271–288). However, that theory does not take into account managerial ownership. Thus, the following questions arise: does catering to investor sentiment for dividends exist only in the

case of low managerial ownership? Should the catering theory of dividends not be considered in the context of the ownership structure, particularly with a view to the number of shares held by managers? This important issue has not been recognized in detail in the literature. To the best of the author's knowledge, there is only one study that investigates this issue (Neves, 2014, pp. 35–58). Therefore, research in this area should be conducted, and the following questions ought to be answered:

1. Does managerial ownership affect catering to investor sentiment for dividends?

2. Does a manager who is the largest shareholder cater to investors or realize the private benefits of control?

3. Does the number of shares held by a manager affect whether the investor sentiment for dividends is satisfied?

The answer to these questions is important from the point of view of achieving the primary goal of the stock market investor, which is to maximize their financial benefits from the investment. Therefore, the aim of the study is to evaluate how managerial ownership affects the disposition of companies to adjust their dividend payouts to investor sentiment. To achieve that objective, data about Polish publicly traded companies from the electromechanical industry sector is used. The main method of investigation is a panel regression model with random effects.

The remainder of this paper is organized as follows. Section 2 presents the literature review. Section 3 describes the research methodology. Section 4 presents the research results and discusses them. Section 5 highlights the conclusions. The last section contains the annex.

Literature review

In recent years, many financial phenomena have been explained by including behavioral aspects in research. One of the behavioral theories describing dividend policy is the catering theory of dividend introduced by Baker and Wurgler (2004a, pp. 1125–1165; 2004b, pp. 271–288). These authors assume that investors act irrationally (i.e., they make investment decisions only on the basis of dividend payouts), while managers behave rationally (i.e., they respond to investor sentiment and pay out dividends more eagerly when dividend payers are valued more by the capital market than non-payers). Otherwise, they tend to avoid dividend payouts (Konieczka & Szyszka, 2013, pp. 175–188).

The catering theory of dividends has been the subject of many studies. Baker & Wurgler, introducing the concept of dividend premium (2004a, pp.

1125–1165), confirmed the existence of the catering effect on the US markets. Their findings showed that the number of dividend payers is strongly correlated with the amount of the dividend premium. Similar results were achieved in the UK (Ferris *et al*., 2006, pp. 1149–1173). However, the catering effect was proven neither in Japan (Tsuju, 2010, pp. 1–14), nor in some western European countries (Eije & Megginson, 2008, pp. 347–374). Meanwhile, the results of research conducted on the Warsaw Stock Exchange (WSE) are contradictory. Gajdka (2013, pp. 141–156) studied 342 companies included in the main index in the years 2000–2011. However, his study did not confirm the occurrence of the catering effect. Furthermore, research by Kaźmierska-Jóźwiak (2015, pp. 59–68), conducted among non-financial companies in the period 2001–2012, did not confirm a statistically significant relationship between a change in dividend premium and changes in the number of dividend payers. In contrast, preliminary research carried out by Pieloch-Babiarz (2015, pp. 185–206) on companies from the electromechanical industry sector in the years 2000–2013 revealed that decisions on initiating or continuing dividend payouts were made more frequently in years of relatively high dividend premiums.

In order to develop the catering theory of dividends, new determinants have been taken into account. Li and Lie (2006, pp. 293–308), focusing on the amount of dividend, proved that companies increase dividend payouts in years of high dividend premiums. If the dividend premium decreases, the dividend is substituted by share repurchase. Expanding this, Jiang *et al.* (2013, pp. 36–50) introduced the concept of the repurchase premium. Their research showed that if this premium is positive, managers replace the dividend with share repurchase. Similar findings were presented by Kulchania (2013, pp. 180–195). De Rooij and Renneboog (2009, pp. 215–238) argued that catering is observed in legal systems that take care of minority shareholders in order to compensate for them having fewer rights. In turn, other authors proved that the propensity to pay a dividend depends on the company's profitability and investment opportunities (Denis & Osobov, 2008, pp. 62–82), as well as its size and age (Julio & Ikenberry, 2004, pp. 89–100), not the dividend premium.

Neves (2014, pp. 35–58) proposed a new research field on the catering theory of dividends. She examined the impact of ownership structure on a company's propensity to adjust dividend payouts to investor sentiment. That research, conducted between 1990 and 2003 on 487 companies from nine European countries, revealed four main findings. First, high managerial ownership has a negative influence on the extent to which firms cater to their investor sentiment. Second, there is a negative correlation between the number of shares held by the largest shareholder and the catering effect.

Third, the existence of a second large shareholder moderates the extent to which firms cater to investor sentiment. Fourth, the joint-effect of the first and second large shareholder on catering to investor sentiment depends on whether there is contestability or collusion between them. It should be added that Neves' research is, so far, the only study that recognizes these issues. Studies conducted by other authors focus on the impact of ownership structure on dividend payout, excluding catering aspects (see Short *et al.*, 2002, p. 105; Lace *et al.*, 2013, p. 259; Florackis *et al.*, 2015, p. 783; Smith *et al.*, 2017, p. 38).

Research methodology

The research sample consists of companies in the electromechanical industry sector that are listed on the main market of the Warsaw Stock Exchange between 2009–2018[1]. A condition for including a company in the research sample was that it belongs to one of the five subsectors specified in the WSE's sectoral classification at the end of 2018, i.e., electro machinery (421), industrial machinery (422), metal products (423), farm and heavy trucks (424), and other — machinery (429). A reason for choosing that sector is its stability, relatively large size, the great number of dividend payouts, and the large capitalization of companies. Moreover, the analyzed entities are mature companies, which allows us to conduct a longitudinal study, while focusing on one sector enables us to avoid the issue of sample heterogeneity when assessing the impact of managerial ownership on adjusting dividend payouts to investor sentiment.

After pairwise deletion of missing data, the final sample consists of 27 companies and a total of 270 firm-year observations[2]. All required financial data were retrieved from stand-alone financial statements available in the Notoria Service database, while market data comes from Stock Market Yearbooks, ownership structure data was hand-collected from the year reports of companies inserted at their websites, and age data was obtained from the National Court Register. The investigation was conducted using Statistica and Gretl.

Achieving the research objective requires taking into consideration the theoretical approaches presented in the literature review, based on which the following hypotheses were formulated:

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[1] The analytical period is 2009–2018. However, to conduct the studies according to the assumptions made, data for 2007–2018 was collected.

[2] In the analyzed sector, there are 32 companies, but five of them had to be removed due to data gaps.

H1: *The higher the dividend premium, the higher the dividend payout in order to cater to investor sentiment.*

H2: *The presence of managers in the ownership structure weakens the catering effect.*

H3: *If a manager is the largest shareholder, the catering effect is weaker.*

H4: *The greater the managerial ownership, the smaller the extent to which companies cater to investor sentiment.*

To investigate the impact of managerial ownership on adjusting dividend payouts to investor sentiment, an unbalanced panel was analyzed using the random-effects model for companies ($i = 1, ..., 27$) observed at several time periods ($t = 1, ..., 10$). In that model, the individual-specific effect is a random variable that is uncorrelated with the explanatory variables. The decision to use the random-effects model instead of the pooled OLS or the fixed-effects model was made based on the F test, the Breusch-Pagan test and the Hausman test calculaded using Gretl. These three tests analyzed together tell us if the pooled, fixed-effects or random-effects model should be used. In all regression models of this paper the random-effects model was selected as being the best one in the context of selection criteria. This selection problem was justified on the basis of the obtained test statistics (see Table 3). In all cases p-values of the F test and the Breusch-Pagan test were below 0.05, while p-values of the Hausman test were higher than 0.05. The obtained results show that in all cases the random-effects model should be chosen. Additionally, the information criteria of Akaike, Schwarz and Hannan-Quinn (Hsiao, 2003, p. 174) were taken into account in order to compare these models and choose the one with the lowest value of the criterion used (Cottrell & Lucchetti, 2019, p. 236).

In accordance with the aim of the study and in order to verify the hypotheses, we propose estimating four regression models. To investigate whether a dividend premium impacts the amount of dividend paid out in order to cater to investor sentiment, the following model (model 1) was estimated:

$$DivPay_{i,t} = \gamma_0 + \gamma_1 Cater_{i,t-2} + \gamma_2 Profit_{i,t-1} + \gamma_3 Liquid_{i,t-1} + \\ + \gamma_4 Debt_{i,t-1} + \gamma_5 Age_{i,t-1} + \varepsilon_{i,t} \tag{1}$$

where the dependent variable ($DivPay_{i,t}$) is the payout ratio obtained as part of the net profit generated by the i-th company in year t-1 paid out as a dividend in year t; $Cater_{i,t-2}$ is a proxy for the catering effect on dividend payouts calculated at the market level[3] using the formula for an equally-weighted dividend premium (Gajdka, 2013, p. 152):

$$Cater_{i,t} = \frac{1}{dp_t} \sum_{k=1}^{dp_t} \left(\frac{p}{BV} \right)_{k,t} - \frac{1}{nd_t} \sum_{n=1}^{nd_t} \left(\frac{p}{BV} \right)_{n,t} \qquad (2)$$

where dp_t is the number of dividend payers in year t; $(p/BV)_{k,t}$ means the price-to-book value of the k-th dividend payer at the end of year t; nd_t is the number of dividend non-payers in year t; $(p/BV)_{n,t}$ means the price-to-book value of the n-th dividend non-payer at the end of year t. In accordance with hypothesis H1, a positive and statistically significant value of coefficient γ_1 is expected, which would signal that companies in the electromechanical industry pay out higher dividends in order to cater to investor sentiment. In line with prior research (Fama & French, 2001, pp. 3–43; DeAngelo *et al.*, 2006, pp. 228; Eije & Megginson, 2008, p. 363), other factors affecting dividend payouts are controlled. Specifically, we use return on assets ($Profit_{i,t-1}$) as a proxy for profitability, current ratio ($Liquid_{i,t-1}$) to measure the liquidity, debt ratio ($Debt_{i,t-1}$) to control the capital structure, and the number of years ($Age_{i,t-1}$) as a proxy for firm maturity[4]; $\varepsilon_{i,t}$ is a random component.

To investigate whether the presence of managers in the ownership structure weakens the catering effect, the following model (model 2) was estimated:

$$\begin{aligned} DivPay_{i,t} = \gamma_0 &+ Cater_{i,t-2}(\gamma_1 + \lambda_1 Manag_{i,t-1}) + \gamma_2 Profit_{i,t-1} + \\ &+ \gamma_3 Liquid_{i,t-1} + \gamma_4 Debt_{i,t-1} + \gamma_5 Age_{i,t-1} + \varepsilon_{i,t} \end{aligned} \qquad (3)$$

where $Manag_{i,t-1}$ takes a value of 1 if at least one manager is a notified shareholder (i.e., holds not less than 5% of shares), and 0 otherwise. In this

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[3] There are other formulas for dividend premium proposed by Baker and Wurgler (2004a, pp. 1135–1136), Eije and Megginson (2008, p. 363) and Neves (2014, p. 40).

[4] The literature also presents other determinants of dividend policy. Therefore, more control variables were considered in the preliminary research. However, as only one sector was taken into account, the analyzed companies are very similar to one another in terms of size, growth, investment opportunities, etc. Therefore, these explanatory variables are not correlated, or weakly correlated, with the dependent variable and have to be excluded from further research.

way, the coefficient of the catering variable is γ_1 for companies without managers in the ownership structure and $\gamma_1+\lambda_1$ for companies with managers as notified shareholders. In accordance with hypothesis H2, coefficient $\gamma_1+\lambda_1$ is expected to be positive and statistically significant, although lower than γ_1. In all cases whenever the dummy variable equals 1 and both parameters (γ_1 and λ_1) are significant, a linear restriction test is needed in order to know if their sum ($\gamma_1+\lambda_1$) is statistically different from 0 (null hypothesis H_0: $\gamma_1+\lambda_1=0$).

To study the catering effect when a manager is the largest shareholder in a company, the following model (model 3) was estimated:

$$
\begin{aligned}
DivPay_{i,t} = \gamma_0 + Cater_{i,t-2}(\gamma_1 + \varphi_1 First_{i,t-1}) + \gamma_2 Profit_{i,t-1} + \\
+ \gamma_3 Liquid_{i,t-1} + \gamma_4 Debt_{i,t-1} + \gamma_5 Age_{i,t-1} + \varepsilon_{i,t}
\end{aligned}
\tag{4}
$$

where $First_{i,t-1}$ takes a value of 1if a manager holds the largest number of shares, and 0 otherwise. In this way, the coefficient of the catering variable is γ_1 for companies without managers as the first shareholder and $\gamma_1+\varphi_1$ for companies with the manager as the largest shareholder. In accordance with hypothesis H3, the coefficient $\gamma_1+\varphi_1$ is expected to be lower than γ_1.

To evaluate the moderating role of managerial ownership on dividend catering, the interaction between the catering effect and the share of managers in the ownership structure is investigated by estimating the model (model 4):

$$
\begin{aligned}
DivPay_{i,t} = \gamma_0 + Cater_{i,t-2}(\gamma_1 + \xi_1 Share_{i,t-1}) + \gamma_2 Profit_{i,t-1} + \\
+ \gamma_3 Liquid_{i,t-1} + \gamma_4 Debt_{i,t-1} + \gamma_5 Age_{i,t-1} + \varepsilon_{i,t}
\end{aligned}
\tag{5}
$$

where $Share_{i,t-1}$ takes a value of 1 when the level of managerial ownership is above 20% (i.e., if a manager is a significant investor who has real control over the company), and 0 otherwise. In this way, the coefficient of the catering variable is γ_1 for companies without a manager as a significant investor and $\gamma_1+\xi_1$ for companies with a manager holding at least 20% of shares. In accordance with hypothesis H4, the coefficient $\gamma_1+\xi_1$ is expected to be lower than γ_1.

Furthermore, the study is complemented by analyses based on descriptive statistics and the Pearson correlation coefficient.

Results and discussion

Table 1 presents the descriptive statistics of the dependent and control variables for 270 firm-year observations. The mean dividend payout ratio is 0.267, which means that the electromechanical industrial companies paid out, on average, 26.7% of their net profit. Since the cases of no dividend payment prevail (148 observations), the median is therefore 0%. Regarding only dividend payouts, one can notice that the dependent variable reaches an average of 59.2% and ranges from 8.0% to 100.0%, with a median of 55.5%. Additionally, the analyzed companies are profitable. The average return on assets is 5.9%, with a median of 4.7%. Dividend payers are more profitable than non-payers. The average return on assets for companies paying out a dividend is 8.7%, while for others is at the level of 3.6% (the median is 7.5% and 1.6%, respectively). Furthermore, the liquidity of dividend payers is also higher. The average current ratio for companies paying out a dividend is 2.47 (median is 2.09), while for non-payers, it is lower and equal to 1.48 (the median is 1.20). Moreover, dividend payers are less indebted than non-payers (the average debt ratio is 29.1% and 42.1%, respectively) and more mature companies (11 and 9 years, respectively). These findings are in line with our expectations. Furthermore, they are consistent with the research results of other authors, who indicate that dividends are more often paid by: highly profitable companies in order to signal the good financial condition of the company — according to the signaling theory (Fama & French, 2000, p. 5); liquid companies with high free cash flows that pay out dividends in order to mitigate agency costs — according to the agency theory (La Porta *et al.*, 2000, p. 3); low indebted companies that do not have to use earnings to repay their debts (Jensen *et al.*, 1992, p. 247); and large and mature companies, which are more likely to pay out dividends due to lower investment opportunities and greater chances of raising foreign capital (DeAngelo *et al.*, 2006, p. 227).

Table 2 shows the coefficients of the pairwise correlation between the variables. There is a significant correlation between the dependent variable and some explanatory variables, with the exception of *Cater-Share*. The highest and most statistically significant correlation is observed for *DivPay* and *Cater* (r_{yx}=0.696), which aligns with the assumptions made and indicates that dividend policy is adapted to investor sentiment. In turn, negative and weak correlation occurs between dependent variable *Cater-Manag* (r_{yx} = -0.046) and *Cater-First* (r_{yx} = -0.219), which indicates a weakening of the catering effect in the case of managers holding shares. Additionally, a positive and statistically significant correlation is observed between the dividend payout ratio and three control variables (*Profit*, *Liquid* and *Age*) while

a negative correlation occurs in the case of *Debt* (r_{yx} = -0.301), which is consistent with the assumptions. Considering the explanatory variables, it should be noted that they were chosen for the models in such a way that the correlation between them would not be strong, i.e., would not exceed |0.7|. The strongest positive correlation is observed between *Cater* and *Cater-Manag* (r_{yx} = 0.624), while the strongest negative correlation is seen for *Liquid* and *Debt* (r_{yx} = -0.647).

Table 3 shows the estimation results of four regression models. Model 1 presents the influence of dividend premium on payout ratio and indicates that along with a greater dividend premium, companies cater to investor sentiment by paying out a higher dividend. The coefficient at the catering variable is positive (γ_1=0.615) and statistically significant at the 1% level. Thus, hypothesis H1 is supported. Moreover, the dividend payout increases with an increase in the company's profitability, liquidity, and maturity (the coefficients are 0.671, 0.044 and 0.009, respectively), which is consistent with our expectations. Additionally, the coefficient at the debt ratio is 0.009, but it is not statistically significant.

The estimation results of the other models, used for testing the implications of catering theory by means of some ownership characteristics, show the interaction of the catering variable with managerial ownership. As shown in models 2–4, the coefficient at *Cater* is positive and statistically significant at 1%, which confirms that the analyzed companies consider the preferences of investors, and they pay out higher dividends when they expect it. These findings are in line with the results of Li and Lie (2006, pp. 293–308), who proved the existence of a positive correlation between dividend premium and dividend payout ratio, showing that managers cater to investor sentiment for the dividend. It should be noted that research on catering based on the dividend amount is a novelty, because other authors investigate dividend initiations and omissions depending on different levels of dividend premium, not dividend amount (see: Baker & Wurgler, 2004a, pp. 1125–1165; Eije & Megginson, 2008, pp. 347–374; Gajdka, 2013, pp. 141–156; Kaźmierska-Jóźwiak, 2015, pp. 59–68).

Model 2, used to study whether the presence of managers in the ownership structure influences the catering effect, suggests that a positive effect from investor sentiment on the dividend payout ratio may weaken ($\gamma_1+\lambda_1$=0.592) if there is at least one manager in the ownership structure. However, the coefficient at *Cater-Manag* (λ_1=-0.035) is not statistically significant at accepted levels of significance. Thus, hypothesis H2 is not supported.

Regarding the estimation results of model 3, which investigates the catering effect when the manager is the first shareholder, the coefficient at

Cater-First is negative and significant at 5% (φ_1=-0.247), which indicates that the catering effect weakens when the manager holds the largest number of shares in the company ($\gamma_1+\varphi_1$=0.432; statistically different from 0, χ^2(1)=24.309; p<0.001). Thus, hypothesis H3 is supported. Investor demand for dividend translates into relatively higher dividend payout in the companies in which manager is not the largest shareholders, whereas companies with insiders holding the largest number of shares seem to cater less to investors preferences. This suggests that the catering effect is stronger when managers don't have the greater ability to expropriate earnings for their private benefits. This finding is similar to the results presented by Neves (2014, p. 46). She proved that companies with low levels of managerial ownership cater to investor sentiment for dividends, whereas companies with high levels of insiders do not seem to cater to investor preferences. Moreover, our findings suggest an entrenchment effect (Aluchna *et al.*, 2019, p. 230), i.e., if the manager holds many shares, they extract private benefits from control at the expense of other shareholders, which results in lower dividend payouts (Jensen *et al.*, 1992, p. 247).

The estimation results of model 4, used to study the interaction between the catering effect and the share of managers in the ownership structure, indicate that a coefficient at *Cater-Share* is positive but not statistically significant at the given significance levels (ξ_1=0.006). Therefore, hypothesis H4 is not supported. Thus, we cannot conclude that the presence of a manager who holds at least 20% of the company's shares has an impact on the amount of dividend paid out to cater to investor sentiment.

In addition, the coefficients at the return on investment, current ratio, and age are positive and statistically significant in each of the four models (which is consistent with the expectations), while the coefficient at debt ratio is negative and significant at 10% only in model 3.

Conclusions

The article presents the results of pioneering research on the evaluation of the impact of managerial ownership on the disposition of companies to adjust their dividend payouts to investor sentiment.

Four research hypotheses were formulated, but only two of them are satisfied (H1 and H3). Therefore, there are two main research findings. First, an increase in dividend premium results in a higher payout in order to cater to investor sentiment. This means that the catering effect is observed in the analyzed companies, and their managers adjust the dividend payout to the needs and expectations of stock market investors. Second, if the manager

holds the greatest number of shares, the catering effect weakens. This finding indicates that in these companies in which managerial ownership is highly concentrated, managers realize private benefits of control, so there is no alignment of interest.

The findings should not be generalized due to some limitations. First of all, the survey was conducted only among Polish companies listed on the WSE, and it applies to the electromechanical industry sector. Moreover, the regression models used in the article take into account only one of many market-based or firm-based determination methods of dividend premium. Therefore, further research on this issue is recommended. The study should be considered preliminary, so it ought to be extended to companies from other sectors and even other countries. In addition, it is recommended to examine the impact of other shareholders, in particular, large shareholders, institutional investors, and the State Treasury, on the disposition of companies to adjust dividend payouts to investor sentiment.

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Annex

Table 1. Descriptive statistics of the dependent and control variables

Specification	Mean	Std. Dev.	Min.	Median	Max.
Panel A: all observations (N=270)					
DivPay	0.267	0.343	0.000	0.000	1.000
Profit	0.059	0.060	-0.003	0.047	0.220
Liquid	1.926	1.144	0.209	1.488	4.200
Debt	0.362	0.181	0.000	0.361	0.846
Age	10.022	3.982	1.000	10.000	17.000
Panel B: dividend payouts (N=122)					
DivPay	0.592	0.261	0.080	0.555	1.000
Profit	0.087	0.059	0.000	0.075	0.220
Liquid	2.472	1.223	0.693	2.093	4.200
Debt	0.291	0.158	0.000	0.273	0.602
Age	11.041	3.218	3.000	11.000	17.000
Panel C: no dividend payouts (N=148)					
DivPay	0.000	0.000	0.000	0.000	0.000
Profit	0.036	0.051	-0.003	0.016	0.220
Liquid	1.476	0.845	0.209	1.202	4.200
Debt	0.421	0.178	0.040	0.431	0.846
Age	9.182	4.350	1.000	9.000	17.000

Table 2. Pearson correlation matrix

Spec.	DivPay	Cater	Cater-Manag	Cater-First	Cater-Share	Profit	Liquid	Debt	Age
DivPay	1.000								
Cater	0.696***	1.000							
Cater-Manag	-0.046*	0.624***	1.000						
Cater-First	-0.219**	0.511***	0.811***	1.000					
Cater-Share	0.019	-0.035	0.253***	0.268***	1.000				
Profit	0.368***	0.344***	0.396***	0.308***	-0.039	1.000			
Liquid	0.421***	0.403***	0.475***	0.499***	0.141**	0.363***	1.000		
Debt	-0.301***	-0.329***	-0.457***	-0.437***	-0.204***	-0.384***	-0.647***	1.000	
Age	0.257***	0.248***	0.092	0.065	0.003	0.040	-0.037	0.125**	1.000

Note: *, **, *** represent statistical significance at the 10%, 5%, and 1% levels.

Table 3. Estimation results of the moderating role of managerial ownership on dividend catering

Specification	Model 1	Model 2	Model 3	Model 4
Intercept	-0.083	-0.079	-0.083	-0.095
Cater	0.615***	0.627***	0.679***	0.623***
Cater-Manag		-0.035		
Cater-First			-0.247**	
Cater-Share				0.006
Profit	0.671***	0.685**	0.685**	0.669**
Liquid	0.044**	0.044**	0.051***	0.046**
Debt	0.009	0.000	-0.031*	0.017
Age	0.009**	0.009**	0.009**	0.009**
Akaike criterion	-2.792	-0.941	-7.778	-1.605
Schwarz criterion	18.798	24.247	17.411	23.583
Hannan-Quinn	5.877	9.173	2.337	8.510
F test	2.749	2.723	2.661	2.792
p-value	0.000	0.000	0.000	0.000
Breusch-Pagan; $\chi^2(1)$	9.159	8.898	8.669	8.372
p-value	0.002	0.003	0.003	0.004
Hausman; $\chi^2(K)$	4.451	2.804	4.246	9.547
p-value	0.616	0.833	0.643	0.145

Note: *, **, *** represent statistical significance at the 10%, 5%, and 1% levels.