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Original Research

Performance Pressure of Listed Companies and Environmental Information Disclosure: An Empirical Research on Chinese Enterprise Groups

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Abstract

As a non-productive activity, environmental information disclosure is not only a prerequisite for environmental governance and sustainable development of listed companies, but also an effective means for executives to relieve pressure on business performance. Taking Shanghai and Shenzhen A-share listed companies as research samples, the authors have carried out an empirical study to test the relationship between subsidiary performance pressure and environmental information disclosure in enterprise groups, and examines the moderating effect of the parent company's shareholding on the main effect, as well as the differentiation of the moderating effect between high and low degree of executives' synergy allocation level in parent-subsidiary corporations. The results show that: firstly, the performance pressure of listed companies has a positive impact on environmental information disclosure; secondly, the parent company's shareholding will weaken the positive impact of listed company's performance pressure on environmental information disclosure. The higher the parent company's shareholding ratio, the weaker the positive impact of subsidiary company's performance pressure on environmental information disclosure. Thirdly, when the degree of executives' synergy allocation level in parent-subsidiary corporations is low, the negative moderating effect of parent's shareholding ratio is stronger.

Keywords: sustainable development, performance pressure, environmental information disclosure, Chinese context

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Introduction

Ecological and environmental issues have always been one of the hotspots in China's economic development. From the 18th National Congress of the Communist Party of China (CPC) to the 19th National Congress of the Communist Party of China (CPC), ecological civilization has been proposed as a millennium plan for the sustainable development of the Chinese nation. The public's understanding of environmental protection concept is deepening day by day, and their expectation of environmental governance of enterprises is also increasing [1-2].

Many studies have shown that, as a non-productive method, environmental information disclosure can convey to the outside world the information that companies have the courage to assume social responsibilities, increase investor favorability [3], shape a good corporate image [4] and enhance corporate value [5-6] In this context, full disclosure of environmental information has become a prerequisite and an important way for listed companies' environmental governance.

In recent years, academic research on corporate environmental information disclosure has been increasing, and fruitful results have also been achieved. The analysis on the influencing factors of environmental information disclosure mainly focuses on the company value [7-8], environmental performance [9-10], profitability [11-12], etc. Clarkson et al. (2013) believe that there is a positive correlation between the quality of environmental information disclosure and the overall value of the company [13]; Meng et al. (2014) found that companies with better and poorer environmental performance tend to disclose more environmental information, the difference is that companies with good environmental performance disclose more substantive information [14]; Nor et al. (2016) argue that corporate profitability is positively related to environmental information disclosure. The stronger the corporate profitability, the higher the level of environmental information disclosure [15].

In short, the existing literature mainly expands and deepens the exploration of the relationship between different factors and environmental information disclosure from the perspectives of legality theory, stakeholder theory, and voluntary information disclosure theory, which enriches the research system of pre-dependent variables of environmental information disclosure. Based on the existing research, the authors analyze the relationship between the performance pressure and disclosure of environmental information of listed companies within the framework of the group, and examines the moderating effect of parent company's shareholding, as well as the difference of the moderating effect in the situation of high and low degree of executives' synergy allocation of parent and subsidiary corporations.

The research contributions of this paper are as follows: First, in recent years, the trend of Chinese enterprises to implement group management has become increasingly obvious, and has gradually become the dominant force in the development of the national economy. This study investigates the regularity of environmental information disclosure when the subsidiary company's operating performance is poor, which can further clarify the governance decision-making tendency and behavior logic of the subsidiary company in the governance framework of the parent subsidiary company, and provide reference for the optimization of the governance structure and system design of the parent subsidiary company in practice. Secondly, this study further enriches the research on the antecedent variables of environmental information disclosure of listed companies, tries to explore the motivation and rationality of environmental information disclosure from the perspective of how to alleviate the performance pressure of the senior management of subsidiary companies, and has a deeper understanding of the coping means of the senior management when facing the performance pressure, which can provide reference and support for relevant theories.

Theoretical Analysis and Hypothesis Development

The impact mechanism of performance pressure of listed companies on environmental information disclosure.

According to the theory of pressure, within the enterprise, the management will face the performance pressure brought by the growth speed of the enterprise. When the growth pressure faced by the management is small, the management will have more power to make the operation decision of the enterprise. When the performance pressure faced by the management is large, the power of their efforts will be reduced, and they may choose to achieve the goal of rapid growth of the enterprise in a non-productive way [16]. The principal-agent theory holds that there is information asymmetry and interest inconsistency between the principal and the agent of an enterprise. In such a situation, the executives of listed companies as agents may make decisions that are beneficial to their own interests based on their own information advantages [17]. Performance pressure reflects how difficult it is for listed companies to achieve performance goals [18]. The principal-agent theory believes that executives of listed companies as agents will make decisions that are beneficial to their own interests based on their own information advantages. Therefore, when the operating status of a listed company is highly related to the personal economic benefits and job stability of the executives, performance pressure will affect the idea and the behavior of the executives. That is, the executives of listed companies will first perceive and evaluate whether the performance goals can be achieved, and will take a series of more

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effective and beneficial actions after weighing the pros and cons [19].

If the performance pressure of a listed company is small, that is, the realization of the expected goal is relatively simple for the executives, and even if the performance pressure is not enough to affect the daily operation of the company, the executives can achieve the expected goal without too much effort. The executives of the listed company will tend to improve operating efficiency by improving internal governance mechanisms and reducing short-term expenditures under the expectations of all parties to achieve the expected goals of executives. However, if the executives of listed companies perceive that it is very difficult to achieve the expected goal, the expected goal is far from the current expected goal, and they cannot improve the performance through the daily management of business in the short term to achieve the goal and relieve the pressure, they will pay less attention to the daily operation and management behavior, that is, they will not pay too much effort for it, but will be more inclined to choose Non-productive activities to transfer the pressure of assessment and evaluation caused by poor performance [20].

In view of the importance of environmental protection and governance in the current corporate development, and the executives have greater discretion and decision-making power on environmental information disclosure [21], they can control the amount, details, and intensity of environmental information disclosure. Therefore, environmental information disclosure provides an opportunity for listed company executives to alleviate the pressure of performance. Executives of listed companies may regard environmental information disclosure as an export of the company's operating performance. Under the circumstances of greater performance pressure, in order to prevent the company from Environmental information disclosure for decline in value and loss of reputation. Based on this, we suggest the following hypothesis:

Hypothesis 1. The performance pressure of listed companies has a positive impact on the level of environmental information disclosure.

The moderating effect of parent company shareholding on the relationship between listed companies' performance pressure and environmental information disclosure.

In the framework of the group, as the controlling shareholder of the listed company, the parent company has the means and motivation to supervise the listed company's business activities [22-23]. When the parent company's shareholding ratio is relatively high, the effect of converging interests with the listed company becomes more obvious, and the awareness and motivation of the supervision of the listed company are also stronger, and compared to other small and medium shareholders' "voting with their feet" and "free-riding" psychology [24-25], the parent company has a deeper understanding of the operating conditions of the listed company, and pays more attention to the long-term interests of the listed company [26]. It also has a stronger ability to identify and control the strategic decisions of listed company executives. The degree of information asymmetry between parent and subsidiary companies is weakened. The operation decisions and implementation goals of listed company are easier to identify and known by the parent company [27]. At this time, the effect of non-productive transfer of pressure by executives of listed companies will be reduced, and the difficulty in achieving the expected effect will lead to the weakening of the motivation of executives to transfer pressure, instead, they will focus more on how to use productive activities to relieve performance pressure. Therefore, based on the above discussion, we propose the following hypothesis:

Hypothesis 2. There is a moderating effect of parent company shareholding on the relationship between listed companies' performance pressure and environmental information disclosure. The specific performance is: the higher the parent company shareholding ratio, the weaker the positive impact of listed company performance pressure on environmental information disclosure.

The influence of executives' synergy allocation level in parent-subsidiary corporations on the parent company shareholding.

Executives' synergy allocation level in parent-subsidiary corporations is a governance mechanism for the parent company to coordinate and centrally configure the listed company executives through concurrent senior management, and it is also an effective way for the parent company to control and interfere with the management decisions of listed companies [28]. The low level of the executives' synergy allocation level means that there are fewer concurrent executives from the parent company in listed companies. Due to the limitation of dual duties, it is difficult to identify and supervise the operating conditions of listed companies in a timely and effective manner [29-30], and it is even more difficult to accurately identify the motivation of the transfer of pressure by the executives of listed companies and the information asymmetry between parent and listed companies is relatively high [31]. At this time, if the shareholding ratio of the parent company is high, the parent company will improve the supervision consciousness and motivation of listed companies in view of the concern about ownership income, especially when the parent company knows that it has a small number of concurrent executives in listed companies, it will also improve the recognition ability of executives' decision-making of listed companies for the sake of stabilizing its own control rights and improving the earnings value of listed companies. Correspondingly, the executives of listed companies have been intensified under the supervision of the parent company, and the effect of transferring performance pressure through the non-productive

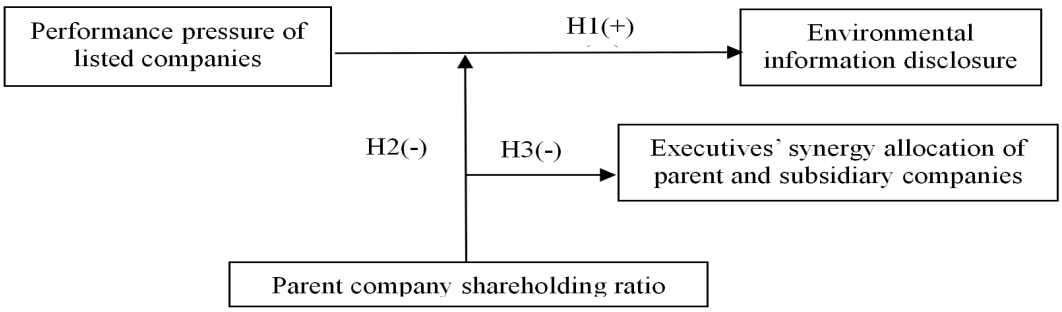

Fig. 1. Hypothesized model.

activity of environmental information disclosure is not good. On the contrary, it will improve the standardization of decision-making behavior and tend to relieve performance pressure through formal productive behavior. Based on the above analysis, the following hypothesis is put forward:

Hypothesis 3. Executives' synergy allocation level in parent-subsidiary corporations will influence the moderating effect of parent company's shareholding, specifically as follows: under the situation of low level of executives' synergy of parent and subsidiary companies, the stronger the weakening effect of parent company's shareholding on the positive correlation between performance pressure of listed companies and environmental information disclosure. The overall study model is shown in Fig. 1.

Methodology and Variable Definitions

Methodology

In this paper, the quantitative regression analysis method is adopted, and the data are analyzed by using stata15.1 software. This paper takes the listed manufacturing companies in Shanghai and Shenzhen stock markets as the initial sample, and further selects them through the following steps: First, they belong to enterprise groups; Second, during the sample observation period, "2014-2017" did not have major restructuring phenomena such as changes in controlling shareholders; Third, the sample enterprises with serious lack of ST (Special Treatment) and data are eliminated. Finally, 3092 groups of samples were obtained, includes data of 773 listed manufacturing companies in China from 2014 to 2017, and other relevant data used in the empirical analysis of this paper mainly came from the CSMAR database. (CSMAR database is an economic and financial database developed from the needs of academic research).

Variable Definitions

(1) Environmental Information Disclosure (EDI). This paper draws on the research of Wiseman (1982) and assigns values to environmental information disclosure indicators [32]. The value is evaluated according to three aspects: "whether the environmental information is disclosed in accordance with the GRI Sustainability Reporting Guidelines", "whether to disclose environmental and sustainable development information", and "whether to disclose social responsibility system construction and improvement measures", which meets one condition Recorded as "1", otherwise as "0".

(2) Performance pressure (PP). This article refers to the method of Gomes (1998) and uses the reverse index and uses the following method to calculate [33]:

$$PP = P_i - \alpha HA_i - (1 - \alpha)\, SA_i$$

...where P_i is the return on total assets (ROA) of the i company this year, HA_i is the historical performance of the i company, and SA_i is the average performance of the industry in which the i company belongs this year, and α is the weight. Based on the previous research [34], it is assigned a value of 0.5. The smaller the value, the more serious performance pressure the company are facing.

(3) The parent company shareholding ratio (EC). The parent company's shareholding ratio refers to the previous research [35] and is measured by the largest shareholder's shareholding ratio.

(4) Executives' synergy allocation of parent and subsidiary corporations. Executives' synergy allocation of parent and subsidiary corporations reflects the governance mechanism adopted by the corporate group operation to achieve unified coordination and centralized configuration of the senior management within the group. Based on the previous research [36] and the operation environment of China, this paper uses the ratio of the number of subsidiary executives concurrently serving as executives in parent company to the total number of subsidiary executives to measure and divides them into two groups according to the median of the calculated ratio. The group above the median is considered as a high degree of synergy allocation, while the group below the median is considered as a low degree of synergy allocation.

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Table 1. Definition and measurement of variables.

Variables	Code	Index
Environmental information disclosure	EDI	Whether to disclose environmental information according to GRI Guidelines for Sustainable Development Report, whether to disclose environmental and sustainable development information, and whether to disclose the construction and improvement measures of social responsibility system. If meets one condition, it is recorded as 1, otherwise it is recorded as 0, and finally forms 0-3 discrete data.
Performance pressure	PP	The performance of the listed company this year is subtracted from the average performance and historical performance of the industry after assignment.
Shareholding ratio of parent company	EC	The number of shares held by the parent company accounts for the proportion of the total equity of the listed company.
Executives' synergy allocation of parent and subsidiary corporations	Synergy	Measured by the ratio of the number of subsidiary executives concurrently serving as executives in parent company to the total number of subsidiary executives, and divides them into two groups according to the median of the calculated ratio.
Company size	Size	The natural logarithm of the total assets of a listed company at the end of the year.
Board leadership structure	BLS	Measured as follows: Part-time situation of chairman and CEO. When two positions were held by one person, this indicator was marked as "1", otherwise this indicator was marked as "0".
Environmental protection investment in the province	Province	Measured according to the amount of environmental protection expenditure of each province.
Board independence	IND	The number of shares held by the parent company accounts for the proportion of the total equity of the listed company.
Audit fee	Audit	The audit fee divided by the total assets at the end of the period.
Board shareholding ratio	BS	The number of shares held by the board of directors' accounts for the proportion of the total share capital of the listed company.
Remuneration levels of directors, supervisors, and executives	Payment	The total remuneration of the board of directors, the board of supervisors and the senior management is divided by the operating cost of the listed company that year.
Year (2015)	Y1	Observation year belongs to this year, recorded as 1, not 0.
Year (2016)	Y2	Observation year belongs to this year, recorded as 1, not 0.
Year (2017)	Y3	Observation year belongs to this year, recorded as 1, not 0.

(5) Control variables. Combined with the existing research, this paper also selects the following factors that reflect the characteristics of listed companies as control variables: company size, leadership structure of board of directors (because of the difference of data magnitude, we take logarithm of the original data of the indicator in empirical analysis. Board leadership structure is measured as follows: Part-time situation of chairman and CEO. When two positions were held by one person, this indicator was marked as "1", otherwise this indicator was marked as "0".), environmental protection investment in the province, audit fees, shareholding ratio of board of directors, and high salary level of directors [37-38]. Definition and measurement of variables are shown in Table 1.

Models

To investigate the hypothesis of this paper, the following multiple regression model is designed:

$$EDI = c + \sum_{j=1}^{10} b_j Control + PP + \varepsilon \quad (1)$$

$$EDI = c + \sum_{j=1}^{10} b_j Control + PP + EC + PP \times EC + \varepsilon \quad (2)$$

$$EDI = c + \sum_{j=1}^{10} b_j Control + PP + EC + PP \times EC + \varepsilon \quad \text{(Synergy>Median)} \quad (3)$$

$$EDI = c + \sum_{j=1}^{10} b_j Control + PP + EC + PP \times EC + \varepsilon \quad \text{(Synergy<Median)} \quad (4)$$

Control is the control variable group, c is the intercept term, ε represents the random disturbance

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Table 2. Descriptive statistics of variables (means, standard deviations, and correlation coefficients of major variables).

Index	EDI	PP	EC	Size	BLS	Audit	Province	BS	Payment
Variable	3092	3092	3092	3092	3092	3092	3092	3092	3092
Mean	0.402	0.001	0.363	22.49	0.196	0.001	4.780	0.027	0.002
Standard Deviation	0.681	0.062	0.138	1.207	0.397	0.000	3.179	0.077	0.005
Median	0	-0.004	0.348	22.35	0	0	4	0.001	0.008
Minimum	0	-0.679	0.050	19.23	0	0	1	0	0
Maximum	3	1.850	0.900	27.31	1	0.003	21	0.744	0.183

term, j is the number of each control variable, and b_j represents the regression coefficient of each control variable. Model 1 is a regression model of the performance pressure of listed companies on environmental information disclosure, which can test hypothesis H1; On the basis of model 1, model 2 adds the interactive terms of performance pressure and parent company's shareholding ratio, which is used to analyze the moderating effect of parent company's shareholding on the impact of listed company's performance pressure on environmental information disclosure, and can verify hypothesis H2; Model 3 and Model 4 respectively test the moderating effect of parent company's shareholding on the main effect in the context of high and low executives' synergy allocation of parent and subsidiary corporations, and compare the regression coefficients and significance of the interaction between parent company's shareholding ratio and performance pressure in the two models, so as to judge the influence of executives' synergy allocation of parent and subsidiary corporations on parent company's shareholding and verify hypothesis H3.

Data Analysis and Results Discussion

Descriptive Statistics

Table 2 reports the mean, median, standard deviation, minimum and maximum values of the main variables. The average value of environmental information disclosure is less than 0.5, the median is 0, and the standard deviation is large, it can be seen that that due to the lack of standardization and compulsory environmental information disclosure of listed companies, the level of information disclosure among samples varies, and the environmental information of some listed companies The level of information disclosure is low; there is a significant gap between the minimum and maximum performance pressure indicators, indicating that the performance pressures of different companies in the same industry are quite different; the average and median of the parent company's shareholding ratio are both about 0.3 and the standard deviation It is also small, reflecting that the gap in the shareholding ratio of the parent company is relatively small; the mean value of the dummy variable of the chairman and general manager concurrently is small, and the standard deviation is large, which shows that there are relatively few cases of combining two positions in the sample companies; The large input standard deviation indicates that there is a clear gap in the level of local environmental protection expenditures between provinces.

Multiple Regression Results

According to the model designed above, use stata14.0 software to perform regression analysis. The specific calculation results are shown in Table 3. The regression analysis result of model M1 shows that after controlling for various factors that may affect environmental information disclosure, the regression coefficient of listed company performance pressure is negative ($\beta = -0.094$), which is significant at the 10% level. Due to performance pressure adopts reverse indicators, it shows that the performance pressure of listed companies has a positive impact on the level of environmental information disclosure. That is, the greater the performance pressure of listed companies, the more likely it is to disclose environmental information at a higher level. Thus, H1 is verified. The analysis result of the model M2 shows that the regression coefficient of the parent company's shareholding ratio and the performance pressure interaction term of the listed company is positive ($\beta = 0.137$), and it is significant at the basic level of 5%, this shows that the parent company's shareholding has a significant moderating role in the relationship between the performance pressure of listed companies and environmental information disclosure. Combined with the coincidence of main effect and interactive term coefficient, it can be judged that the higher the parent company's shareholding ratio, the weaker the positive impact of listed companies' performance pressure on environmental information disclosure. Hypothesis H2 is verified. From the analysis results of models M3 and M4, it can be seen that in the case of a low degree of executives' synergy allocation of parent and subsidiary corporations, the regression coefficient of the parent company's shareholding ratio

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Table 3. Regression results analysis.

Variables	EDI			
	M1	M2	M3 (Synergy>Median)	M4 (Synergy<Median)
Control variables				
Size	1.258*** (8.83)	1.261*** (8.78)	1.290*** (7.34)	1.505*** (6.84)
BLS	-0.173 (-0.61)	-0.176 (-0.62)	0.118 (0.26)	-0.405 (-1.12)
Province	-0.079 (-0.64)	-0.082 (-0.66)	-0.022 (-0.13)	-0.049 (-0.30)
IND	-0.077 (-0.73)	-0.081 (-0.77)	0.011 (0.08)	-0.247* (-1.74)
Audit	-0.083 (-0.74)	-0.084 (-0.75)	-0.071 (-0.48)	-0.088 (-0.57)
BS	-0.301* (-1.90)	-0.300* (-1.91)	-0.150 (-0.64)	-0.503** (-2.05)
Payment	-0.878*** (-3.52)	-0.892*** (-3.58)	-0.315 (-0.72)	-0.751** (-2.08)
Year (2015)	Control	Control	Control	Control
Year (2016)	Control	Control	Control	Control
Year (2017)	Control	Control	Control	Control
Independent variable				
PP	-0.094* (-1.85)	-0.101** (-1.96)	-0.059 (-0.86)	-0.153* (-1.65)
Moderator				
EC	0.502*** (3.85)	0.522*** (3.94)	0.408** (2.34)	0.379** (2.11)
Product term				
EC*PP		0.137** (2.19)	0.001 (0.01)	0.343*** (3.46)
AIC	3510.07	3509.25	1980.63	1703.73
N	3092	3092	1538	1554

Note: Because the environmental information of the explained variable is disclosed as a discrete data variable, the ologit regression analysis method is adopted; ***, **, * indicate the significance level of 1%, 5%, and 10%, respectively, and the z-values in parentheses. As the panel ologit model cannot display R square, Akaike Information Criterion (AIC) is adopted to evaluate the fitting degree of this model. The AIC of model M1 is 3510.07, the AIC of M2 is 3509.25, the AIC of M3 is 1980.63, and the AIC of M4 is 1703.73. The numerical values have all decreased with respect to M1, indicating that the fitting degree of the model in this paper has been improved.

and the performance pressure interaction term of the listed company is positive ($\beta = 0.343$), and it is at 1% the level is significant, indicating that in the context of a lower degree of executives' synergy allocation of parent and subsidiary corporations, the parent company's shareholding ratio has a stronger weakening effect on the main effect. Hypothesis H3 has been verified; In the case of a high degree of executives' synergy allocation of parent and subsidiary corporations, although the regression coefficient of the interaction term between the parent company's shareholding ratio and the listed company's performance pressure is positive ($\beta = 0.001$), the significance test is not passed. The reason for the analysis may be: At this time, concurrently serving as executives has a strong role in decision-making and supervision of listed company's executives, and can serve as an information communication role to timely feedback the operating status of the listed company to the parent company, so the parent company does not need to pay more attention to it to handle the affairs of listed companies.

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Table 4. Random sample test.

Variables	EDI			
	M1	M2	M3 (Synergy>Median)	M4 (Synergy<Median)
Control variables				
Size	1.337*** (9.28)	1.343*** (9.24)	1.163*** (6.43)	1.738*** (7.67)
BLS	-0.155 (-0.54)	-0.156 (-0.54)	0.220 (0.48)	-0.328 (-0.82)
Province	-0.013 (-0.10)	-0.016 (-0.11)	0.102 (0.56)	-0.103 (-0.56)
IND	-0.133 (-1.27)	-0.135 (-1.29)	-0.005 (-0.04)	-0.249 (-1.61)
Audit	-0.091 (-0.71)	-0.092 (-0.71)	-0.162 (-0.85)	-0.011 (-0.08)
BS	-0.426** (-2.25)	-0.425** (-2.23)	-0.144 (-0.60)	-0.798*** (-3.17)
Payment	-0.731*** (-2.58)	-0.748*** (-2.66)	-0.261 (-0.64)	-0.698* (-1.80)
Year (2015)	control	control	control	control
Year (2016)	control	control	control	control
Year(2017)	control	control	control	control
Independent variable				
PP	-0.100* (-1.76)	-0.115* (-1.85)	-0.082 (-0.94)	-0.151 (-1.39)
Moderator				
EC	0.458*** (3.32)	0.467*** (3.36)	0.431** (2.38)	0.320* (1.65)
Product term				
EC*PP		0.166* (1.90)	0.035 (0.24)	0.316** (2.56)
AIC	2930.80	2930.07	1675.94	1412.70
N	2474	2474	1227	1247

Note: Because the environmental information of the explained variable is disclosed as a discrete data variable, the ologit regression analysis method is adopted; ***, **, * indicate the significance level of 1%, 5%, and 10%, respectively, and the z-values in parentheses.

Robustness

Random Sample

Considering that the sample size may affect the research results, this paper randomly selects 80% of the samples for testing. The testing results are shown in Table 4. In Model 1, the regression coefficient between performance pressure and environmental information disclosure is -0.100, which is significantly negative based on 10%, proving Hypothesis 1. The results of model 2 show that the regression coefficient of the interaction term between parent's shareholding ratio and performance pressure is 0.166, which is significantly positive based on 10%. hypothesis 2 is verified. The results of model 3 and model 4 show that in the context of a lower degree of executives' synergy allocation of parent and subsidiary corporations, the regression coefficient of the interaction between parent's shareholding ratio and performance pressure is 0.316, which is significantly positive based on 5%, and hypothesis 3 is verified. The empirical results are consistent with the above regression conclusions, indicating that the research results are robust after selecting random samples.

Add Control Variables

In addition, considering that the asset-liability ratio (Lev) that reflects the financial status of the enterprise and the property rights (State-owned) of the listed companies may affect the robustness of the experimental

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Table 5. Add Control Variable.

Variables	EDI			
	M1	M2	M3 (Synergy>Median)	M4 (Synergy<Median)
Control variables				
Size	1.171*** (7.24)	1.167*** (7.17)	1.229*** (6.33)	1.424*** (5.89)
BLS	0.007 (0.03)	0.005 (0.02)	0.308 (0.67)	-0.162 (-0.44)
Province	-0.140 (-1.09)	-0.142 (-1.11)	-0.097 (-0.56)	-0.095 (-0.58)
IND	-0.067 (-0.63)	-0.070 (-0.66)	0.016 (0.12)	-0.229 (-1.62)
Audit	-0.104 (-0.88)	-0.108 (-0.92)	-0.098 (-0.63)	-0.118 (-0.73)
BS	-0.143 (-1.07)	-0.140 (-1.06)	0.111 (0.52)	-0.347* (-1.75)
Payment	-0.737*** (-2.99)	-0.743*** (-3.02)	-0.134 (-0.31)	-0.580* (-1.72)
Lev	-0.562 (-0.66)	-0.478 (-0.56)	-0.871 (-0.92)	-0.857 (-0.66)
State-owned	1.806*** (6.10)	1.811*** (6.11)	1.765*** (4.50)	1.877*** (4.56)
Year (2015)	control	control	control	control
Year (2016)	control	control	control	control
Year (2017)	control	control	control	control
Independent variable				
PP	-0.099* (-1.78)	-0.104* (-1.82)	-0.067 (-0.93)	-0.167 (-1.60)
Moderator				
EC	0.487*** (3.68)	0.504*** (3.76)	0.373** (2.13)	0.391** (2.12)
Product term				
EC*PP		0.133** (2.13)	-0.010 (-0.11)	0.348*** (3.52)
AIC	3489.65	3488.98	1968.88	1691.31
N	3092	3092	1538	1554

Note: Because the environmental information of the explained variable is disclosed as a discrete data variable, the ologit regression analysis method is adopted; ***, **, * indicate the significance level of 1%, 5%, and 10%, respectively, and the z-values in parentheses.

results, this paper adds two control variables, asset-liability ratio, and property rights of the enterprise, to test the robustness of the conclusions. As can be seen from Table 5, in Model 1, the regression coefficient between performance pressure and environmental information disclosure is -0.099, and is significantly negative based on 10%, which proves Hypothesis 1. The results of model 2 show that the regression coefficient of the interaction term between parent's shareholding ratio and performance pressure is 0.133, and is significantly positive based on 5%. Hypothesis 2 is verified. The results of model 3 and model 4 show that in the context of a lower degree of executives' synergy allocation of parent and subsidiary corporations, the regression coefficient of the interaction term between parent company's shareholding ratio and performance pressure is 0.348, and is significantly positive based on 1%. Hypothesis 3 is also verified. This shows that the conclusion of this paper is still robust after considering the financial status and property rights of the enterprise.

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Research Conclusions and Enlightenment

Research Conclusions

Based on the background that Chinese society is paying more and more attention to environmental protection, this article explores the attitudes of the executives of listed companies to environmental information disclosure when facing performance pressures within the framework of enterprise groups. The empirical results show:

Firstly, the performance pressure of listed companies has a positive impact on environmental information disclosure. That is, the greater the performance pressure of listed companies, the stronger the motivation of executives to disclose environmental information in order to prevent the decline in performance from threatening personal income and job stability, and to meet the current public's demands for environmental protection and governance.

Secondly, there is a moderating effect of parent company ownership on the relationship between performance pressure and environmental information disclosure, the specific performance is: the higher the shareholding ratio of the parent company, the weaker the positive impact of performance pressure on environmental information disclosure. That is to say, the higher the shareholding ratio of the parent company, the stronger the supervision consciousness and motivation to the listed companies, and the more obvious the convergence effect of interests, which strengthens the supervision motivation and ability to the executives of the listed companies, promotes the listed companies to face the pressure of performance, and weakens the tendency to engage in non-productive activities.

Thirdly, group the executives' synergy allocation of parent and subsidiary corporations according to the degree of synergy to test the differentiation of the parent company's shareholding adjustment effect. The results show that the executives' synergy allocation of parent and subsidiary corporations will affect the moderating effect of the parent company' s shareholding. The specific manifestation is: in the context of a lower degree of executives' synergy allocation of parent and subsidiary corporations, the parent company's shareholding has a stronger effect on weakening the positive correlation between listed companies' performance pressure and environmental information disclosure.

Theoretical Contribution

First, this study is like most literature in the definition and measurement of performance pressure, but it is different from the performance dilemma that the existing literature focuses on factors such as R&D tendency, investment level, workplace deception, and organizational unethical behavior. The research explains the response of listed companies in the performance dilemma through a pressure perspective, and analyzes the decision-making tendency of listed company executives based on the demand of shifting pressure, which is a supplement to the pressure theory and behavioral agency theory.

Secondly, this research has a more in-depth analysis and understanding of the motivations of listed companies for environmental information disclosure. The research proves that listed companies use environmental information disclosure to relieve pressure when facing performance pressure, and proves environmental information from the side. Disclosure is a non-productive method. From the perspective of listed company executives, strengthening environmental information disclosure also meets the current public and other core stakeholders' concerns and demands on the environmental governance of listed companies.

Finally, based on the enterprise group, which is an intermediate organization between market and enterprise, this study further discusses the role of parent company's shareholding in identifying and supervising the motivation of transferring pressure of listed company executives, and introduces the special governance element of executives' synergy allocation of parent and subsidiary corporations, which not only clarifies the internal logic of listed company executives' performance pressure and environmental information disclosure, but also enriches the relevant literature in the field of enterprise group governance.

Managerial Implications

Firstly, the study clarified that the executives of listed companies will have the motivation to engage in unproductive actions when facing performance pressure, and executives may use this to relieve performance pressure. In other words, if a listed company cannot achieve its expected performance goals in the short term, and its operating performance will affect its personal income and job stability, under pressure, it will choose to transfer the pressure of evaluation through environmental information disclosure, this kind of decision-making with a tendency to avoid is bound to be detrimental to the long-term development of the enterprise. In fact, no matter whether the pressure comes from the company itself or external uncontrollable factors, the executives of listed companies should continuously improve their own management and management capabilities and quality, and find ways to relieve them in the face of performance pressure. For example, managers can make changes to the enterprise to improve the current situation [39], and use non-productive activities to transfer assessment goals and relieve pressure that does not meet the requirements of sustainable development [40]. At the same time, parent companies and external investors should moderately slow down their pursuit of short-term interests, and the assessment of listed companies and executives should shift to long-term and non-economic goals. Executives

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of listed companies should be encouraged to take a long-term perspective of corporate development and it can reduce the worries caused by the performance pressure, and have more confidence and courage to make suggestions for the long-term development of the company [41].

Secondly, it can be concluded from the conclusion that the parent company's shareholding and executives' synergy allocation of parent and subsidiary corporations within the framework of enterprise groups can supervise the decision-making of listed companies, and enable listed company executives to weigh the effects of shifting performance pressure, thereby affecting the tendency to implement environmental information disclosure. As a special governance mechanism for corporate groups, executives' synergy allocation of parent and subsidiary corporations can supervise the executives of the listed company to a certain extent, concurrent executives can report the actual operating conditions of the listed company to the parent company. The existence of this kind of information channel will restrict the motives of listed company executives to implement non-productive behaviors, prompting listed company executives to face up to the status quo of business operations and use their own management capabilities to use productive methods to alleviate their difficulties. This also further shows that the special arrangement of the executives' synergy allocation of parent and subsidiary corporations has a certain driving effect on improving the corporate governance efficiency and promoting the healthy development of the corporate group. It is necessary for the corporate group to appropriately promote this governance mechanism.

Research Limitations and Future Prospects

First, this paper only uses the data of listed companies in China's manufacturing industry for analysis, and classifies them according to the disclosure content of CSMAR. In the future, more comprehensive classification methods can be explored, and a more scientific and richer index system can be constructed to provide more reliable data support for future research. Secondly, due to the time lag in the release of corporate environmental information disclosure data in CSMAR database, this paper uses the data from 2014 to 2017 for analysis. Future research can further improve the timeliness of environmental information disclosure data. Finally, this paper uses parent-subsidiary corporate executive collaboration as a moderating variable. Given the availability of relevant data, this paper only takes 773 companies to conduct research. Future research can further improve the sample size and make a more scientific measurement of the data of executive collaboration.

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Conflict of Interest

The authors declare no conflict of interest.

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