ESG Performance and Payout Policy

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Abstract

Sustainable development is an important issue of global concern, and ESG reflects the company's overall performance in terms of environment, society and governance. This study uses the data for Taiwanese listed and OTC-listed companies over the period 2015–2020 to explore the impact of companies' ESG performance on payout policy. The results show that an increase in ESG scores results in higher dividend payouts and lower share repurchases. Regarding the possible transmission channels, we also demonstrate that higher ESG scores improve the company's profitability and performance, thereby increasing dividends. This study further divides companies into groups to investigate whether different industries and degrees of internationalization affect the relationship between their ESG performance and payout policies. Among the individual effects of the environmental, social, and governance components, corporate governance is the most important influencing factor. Overall, ESG practices help companies navigate the challenges of different economic environments, maintain robust performance, and achieve profitability.

Keywords: Sustainable development; ESG performance; Payout policy; Cash dividend; Share repurchase

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1. Introduction

In recent years, human development has caused damage to the earth. Dramatic changes in the environment, such as global warming, extreme climates and ecocide, have taken a heavy toll. At the same time, there are also social issues such as oppression, discrimination, and the gap between the rich and the poor in society. For the life of the next generation and the continuation of human beings, the concept of sustainable development has gradually become popular, and many countries have begun to pay attention to the value of intangible assets and sustainable management. Corporate Social Responsibility (CSR) is a business philosophy jointly promoted by the world. It means that companies will have an influence on the public, the ecological environment and political decisions in the process of pursuing profits. Therefore, they must take certain responsibilities, provide corresponding social feedback, and contribute to the sustainable development of the environment. In the "Who Cares Wins" report released by the United Nations in 2004, it proposed to take into consideration three different aspects of "Environment", "Social" and "Governance", such as company carbon emissions, environmental pollution control, employee salaries and benefits, consumer rights, business ethics and information transparency. Under this framework, ESG becomes the practice of CSR principles, enabling companies to implement them more clearly and in a direction. When investors judge whether a company is worth investing in, they usually use the revenue, profit and other indicators in the financial statements, but a profitable company does not mean that it will fulfill its social responsibilities and maintain the ecological environment. ESG indicators can be used to observe whether a company takes social and environmental aspects into account in its operations, and also evaluate its sustainable management and risk response ability.

ESG is not only the goal of sustainable development (Park and Jang, 2021), but also

an important role that affect the competitiveness of companies. Incorporating environmental protection, green energy and energy conservation into management can shape the company's brand image and establish differences from competitors. Companies that value CSR are more likely to gain social recognition because of their good reputation (Cahan et al., 2015). Strengthening corporate governance capabilities can make companies' information and performance more transparent to investors, thereby improving the efficiency of management (Xie et al., 2019). These factors jointly promote the popularization and application of ESG investment concepts on a global scale.

Payout policy refers to a series of decisions and measures that companies decide how to distribute profits to shareholders. They can return cash to shareholders by means of share repurchases and cash dividends. Investors consider dividends not only the source of income but also a way to assess the value of companies (Masum, 2014). Dividend payouts reflect the company's profitability, provide the market with information about future prospects, and help mitigate the problem of information gap between managers and shareholders, ensuring that investors understand the company's operations (Farooq and Jabbouri, 2015; Mathur et al., 2013; Miller and Rock, 1985).

A stable payout policy is important for investors, managers, lenders and for other stakeholders. For investors, stable payouts can provide consistent returns, attracting them to invest more and have the motivation to support the company's growth. For managers, payout policies need to balance short-term and long-term interests, and companies should carefully consider the distribution of profits to ensure that they can provide sufficient funds for the company's future development. For lenders, stable payouts show the company's repayment ability and credit evaluation, thereby enhancing the lender's confidence in the company. Additionally, payout policies have influence on other stakeholders, such as suppliers, employees, and consumers. The financial stability of the

company is directly related to the interests of these stakeholders, and a stable payout policy can ensure that the company can fulfill its responsibilities and safeguard their rights and interests.

As companies pay more and more attention to ESG issues, they invest funds in sustainable development and social responsibility projects to demonstrate their commitment to the environment and society, while enhancing their image. The performance of companies in the ESG field is crucial to the value recognition of investors. Therefore, this paper will discuss whether the performance reflected by companies' investment in ESG activities affects their decision-making on payout policies. Through research, we can better understand the impact of ESG on corporate business strategies and shareholder returns, and provide valuable information for corporate and investor decision-making.

The remainder of this paper is organized as follows. Section 2 contains the literature review and hypotheses. Section 3 describes the sample data and introduces the research method, including empirical models and variables. Section 4 discusses the empirical results. Section 5 considers the endogenous problem. Finally, Section 6 presents the conclusion.

2. Literature review

2.1. The determinants of payout policy

Dividend policies vary from company to company, depending on factors such as its operating conditions, financial needs, growth strategy, and shareholder expectations. Fama and French (2001) find that changes in company characteristics will affect dividend payments, and summarize three factors: company size, profitability, and investment opportunities. The increase or decrease of dividends is related to the life cycle of the company (DeAngelo et al., 2006; Grullon et al., 2002). Newly-listed companies are smaller and fast-growing. With more investment opportunities, they tend to retain cash for future capital expenditures and are less willing to pay dividends. When entering the mature stage, companies are larger and more profitable. As a result of fewer investment opportunities and capital expenditures, companies have excess cash to pay dividends. In addition to studying the US companies, Denis and Osobov (2008) also analyze other developed financial markets (i.e., Canada, UK, Germany, France and Japan). The conclusion is also similar to Fama and French (2001). Besides size, profitability and growth opportunities, Michaely and Moin (2022) show that earnings volatility is the most influential variable on dividend payout policy. Companies with high earnings volatility may face greater risks and uncertainties. In order to cope with possible difficulties in the future, they tend not to pay dividends (Michaely et al., 2021).

In addition to paying dividends, share repurchases are another way for companies to distribute earnings to shareholders. Companies can increase the stock price by buying back the company's stock, and that will reward shareholders, so that they can obtain capital gains. Farre-Mensa et al. (2014) survey the research on payout policy in the last 20 years and find that share repurchases have replaced dividends as the company's main payout method. Because of the advantage of postponing tax payments, and the capital

gains tax is lower than the dividend income tax, share repurchases have the effect of saving tax (Grullon and Michaely, 2002). Moreover, share repurchases are conducive to the adjustment of capital structure, avoiding hostile mergers and acquisitions, and making the company's financial management and operation more flexible. Therefore, it can better respond to market changes and meet the needs of shareholders (Allen and Michaely, 2003).

The U.S. stock market imposes dividend tax on investors, which is extremely unfavorable to them. Therefore, U.S. companies often execute share repurchases, allowing investors to participate in the company's growth through shares and earn returns when they sell shares at a lower capital gains tax rate in the future. In contrast, Taiwan's stock market does not need to be heavily taxed, and returns to shareholders in the form of cash dividends. Share repurchases in Taiwan are mainly aimed at protecting stock prices, maintaining investor confidence, and keeping shareholders positive about the company's long-term value (Su and Lin, 2012; Wang, 2016; Yeh, 2021). The tax system and market environment lead to differences in the ways of rewarding shareholders and the incentives for share repurchases in the two markets. Which payout policy is better for the companies? There is no definite answer to this, but depends on the company's own operating conditions and goals.

2.2. The relationship between ESG and payout policy

Numerous studies confirm that committing to ESG activities has a positive impact on companies' financial performance (Cheung et al., 2013; Derwall et al., 2005; Wu and Shen, 2013). The practice of ESG promotes company innovation and value creation, and helps to improve operating efficiency and reduce risks (Fatemi et al., 2009). The disclosure of ESG information can also reduce information asymmetry and attract more

investors (Chauhan and Kumar, 2019). These practices can lay the foundation for the company's future development and results in steady cash flow and profit growth, which in turn provides shareholders with steady dividends. However, when ESG activities are for the company's self-interest, the expenditure becomes a cost rather than an investment (Lys et al., 2015). Under such circumstances, the company may reduce dividend payments to recoup funds.

Investors take sustainable practices into their investment considerations, which prompts companies to invest more resources in projects that are beneficial to society and the environment in order to achieve good ESG performance (Parmar et al., 2010). When companies have poor ESG performance, it can mean they have environmental, social or corporate governance issues. Under the pressure of investors and stakeholders, in order to increase shareholder value, companies may tend to conduct share repurchases to show the stability of their financial conditions. Managers who conduct repurchases under resource constraints may fund them by dismissing ESG investments which they perceive as less essential for shareholder wealth (Croom et al., 2018; Vaupel et al., 2023).

The empirical results of the literature on company's ESG and payout policy are inconsistent. Because of the different countries, industries, or research methods of the research objects, there are differences in the research results. Overall, ESG decisions have a significant impact on companies. Issues such as corporate governance, community, diversity, employee relations, and the environment are closely related to payout policy. Based on the above discussions, this study establishes the following hypotheses:

Hypothesis 1: Companies with better ESG performance will lead to higher dividend payouts.

Hypothesis 2: Companies with better ESG performance will lead to fewer share repurchases.

3. Data and Methodology

3.1. Data

The sample data are selected from Taiwan Economic Journal (TEJ), which collected listed and OTC-listed companies in Taiwan from 2015 to 2020. According to the industry classification by Sustainability Accounting Standards Board (SASB), after excluding the financial industry and missing data, the total is 1,530 companies. TESG sustainable development indicator is an exclusive ESG indicator for Taiwanese companies, which includes sustainability reports, annual reports of shareholder meeting, and other public information (e.g., patents, labor department benefits, negative CSR news). By collating multiple sources ESG data, complying with GRI Standards and SASB industry classification, the indicator is finally established with a quantitative analysis model. The variables measured by the TESG sustainable development indicator cover 16 topics, which are as follows:

1. Environment (E): Greenhouse Gas Emissions, Energy Management, Water Usages & Wastewater Management, Waste & Hazardous Materials Management, Ecological Impacts.

2. Social (S): Human Rights & Community Relations, Data Security, Product Quality & Safety, Employee Statistics, Employee Health & Safety, Employee Diversity.

3. Governance (G): Business model & Innovation, Management, Board Control & Composition, Fair Operations & Stakeholders Relationship, Information Transparency.

3.2. Methodology

3.2.1. Empirical model

The variables in this study are obtained according to hypothesis and previous literature. We estimate the following regression model:

$$DIV_{i,t}=\beta_0+\beta_1 ESG_{i,t}+\beta_2 Size_{i,t}+\beta_3 ROA_{i,t}+\beta_4 ROE_{i,t}+\beta_5 GTA_{i,t} +\beta_6 SG_{i,t}+\beta_7 MB_{i,t}+\beta_8 LEV_{i,t}+\beta_9 Cash_{i,t}+\beta_{10} RETA_{i,t}+\varepsilon_{i,t} \quad (1)$$

where i and t refer to the company and the time (fiscal year), respectively; DIV refers to the dividend payout ratio, which is defined as a dependent variable; ESG refers to the ESG score, which is defined as an independent variable. Considering other factors that may affect dividend payouts, we add control variables including $Size$, ROA, ROE, GTA, SG, MB, LEV, $Cash$ and $RETA$.

Besides dividends, companies often choose share repurchases as their payout policies. Therefore, we also take share repurchases as another dependent variable, and use the following regression model to analyze the impact of ESG performance on payout policy:

$$SR_{i,t}=\beta_0+\beta_1 ESG_{i,t}+\beta_2 Size_{i,t}+\beta_3 ROA_{i,t}+\beta_4 ROE_{i,t}+\beta_5 GTA_{i,t} +\beta_6 SG_{i,t}+\beta_7 MB_{i,t}+\beta_8 LEV_{i,t}+\beta_9 Cash_{i,t}+\beta_{10} RETA_{i,t}+\varepsilon_{i,t} \quad (2)$$

where SR refers to the ratio of share repurchases to total assets.

3.2.2. Measurement of variables

According to Benlemlih (2019), there are some potential problems with using earnings to calculate the dividend payout ratio. First, earnings may become inaccurate due to accounting manipulation. Second, when earnings are low, unstable payout ratios may skew the results. Third, the ratio becomes meaningless when earnings are negative. Removing these negative data would reduce the sample size. To guard against these potential problems, DIV is calculated as the ratio of cash dividends to total assets.

The main independent variables in this study are the quantitative ESG scores from

TEJ ESG dataset. It first derives companies' "Environment" scores, "Social" scores and "Governance" scores from issues and level of disclosure. After assigning different weights to different industries, the three scores are summed up. The news information available to the companies is also taken into account to obtain total ESG scores. Companies' ESG scores range from 0 to 100, with higher scores indicating better ESG performance of companies.

To enhance the validity of the study, we consider a set of control variables. *Size* represents the natural logarithm of the total assets. Larger companies have lower financing costs, so they are likely to pay more dividends. *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity. The better the company's profitability and the more abundant the use of funds, the higher the probability of paying dividends. *GTA* and *SG* represent the ratio change of total assets and sales, respectively. They are calculated by subtracting the previous year's value from the current year's value and then dividing by the previous year's value. *MB* is the ratio of the market value of equity to the book value of equity. Companies in the rapid growth stage tend to invest more and require more cash, resulting in lower dividend payouts. *LEV* is defined as the ratio of total debt to total assets. A higher debt ratio increases financial risk, and companies may reduce dividends to preserve funds, thereby stabilizing the financial structure (Easterbrook, 1984). *Cash* is defined as the ratio of cash to total assets. Companies usually take into account the amount of cash they have when paying cash dividends (Jensen, 1986). *RETA* is defined as retained earnings divided by total assets. Retained earnings can be used for investment or to distribute dividends; therefore, holding more retained earnings may has stronger ability to pay dividends.

4. Empirical results

4.1. Sample description

SASB's Sustainable Industry Classification System (SICS) classifies companies according to issues such as their business model, resource utilization, sustainable influence, and sustainable innovation. Table 1 depicts the sector distribution of the sample. Technology & Communications have the largest number of companies, accounting for 41.24% of the total. This is followed by Resource Transformation and Consumer Goods, accounting for 16.99% and 11.24%, respectively. Table 2 depicts the industry distribution of the sample. The three industries with the largest number of companies are Hardware, Semiconductors, and Electrical & Electronic Equipment, accounting for 20.59%, 14.71% and 8.43%, respectively. These show that Taiwan is highly dependent on high technology development.

Descriptive statistics of the variables are presented in Table 3. The mean value of dividend payout ratio and share repurchase ratio are 3.09% and 0.49%, respectively. The ESG score has a mean of 54.64. Comparing the three individual score of the ESG, Social score is the highest, while Governance score is the lowest.

Table 4 presents the correlation analysis among the main variables. We find that dividend payout ratio is positively correlated with ESG score and individual scores, while share repurchase ratio is negatively correlated with ESG score and individual scores.

4.2. Regression results

4.2.1. ESG and payout policy

We use equation (1) to test whether the dividend payouts increase with ESG performance. Table 5 reports the estimation results. Without any control factors, the coefficient of ESG in column 1 is 0.112%. After adding control variables that may affect

dividend payouts in column 2, the coefficient of *ESG* is 0.05%, which is significant at the 1% level. These results show a significant positive correlation between ESG score and a company's dividend payout ratio. Companies investing in environmental, social and governance activities lead to a significant increase in dividend payouts, which supports Hypothesis 1.

Next, we test whether share repurchases are influenced by ESG performance. Table 6 presents the results of this test. Column 1 shows a simple specification of equation (2), and column 2 includes the control factors. They lead to significant coefficients of -0.018% and -0.02% for the variable *ESG* at the 1% level. In the United States, companies often use share repurchases instead of dividends to reward shareholders to avoid taxation factors that are unfavorable to shareholders. However, listed companies in Taiwan prefer to pay cash dividends. Most of their share repurchases are motivated by fundamental headwinds in the company's operations, and they hope that repurchasing the company's stocks can support their stock price and increase investors' confidence. Therefore, we can infer that when the company's ESG is underperforming, there should be more opportunities for share repurchases to deal with company's poor fundamentals. Conversely, when the company has a good performance of ESG, the proportion of dividends will increase, while the proportion of share repurchases will decrease, thus corroborating Hypothesis 2.

4.2.2. Transmission channels

There are evidences that ESG practices bring better financial performance to companies. To investigate the impact of ESG performance and profitability on payout policy, we include the interaction term *ESG×ROA* based on equations (1) and (2), and create the following regression model:

$$DIV_{i,t}=\beta_0+\beta_1 ESG_{i,t}+\beta_2 ESG_{i,t}\times ROA_{i,t}+\beta_3 ROA_{i,t}+\beta_4 Size_{i,t}+\beta_5 ROE_{i,t} +\beta_6 GTA_{i,t}+\beta_7 SG_{i,t}+\beta_8 MB_{i,t}+\beta_9 LEV_{i,t}+\beta_{10} Cash_{i,t}+\beta_{11} RETA_{i,t}+\varepsilon_{i,t} \quad (3)$$

$$SR_{i,t}=\beta_0+\beta_1 ESG_{i,t}+\beta_2 ESG_{i,t}\times ROA_{i,t}+\beta_3 ROA_{i,t}+\beta_4 Size_{i,t}+\beta_5 ROE_{i,t} +\beta_6 GTA_{i,t}+\beta_7 SG_{i,t}+\beta_8 MB_{i,t}+\beta_9 LEV_{i,t}+\beta_{10} Cash_{i,t}+\beta_{11} RETA_{i,t}+\varepsilon_{i,t} \quad (4)$$

where i and t refer to the company and the time (fiscal year), respectively. Other variables retain their previously defined meanings.

As indicated in columns 1 of Table 7, the coefficient of the interaction term of ESG and ROA is positive and significant, indicating that when companies have high ESG scores and good profitability, they tend to pay more dividends. However, in column 2, the interaction term of ESG and ROA does not significantly affect share repurchases. This is consistent with our previous explanation. Most Taiwanese companies' share repurchases tend to support their stock price and increase investors' confidence, while western companies usually substitute repurchase for dividends in recent years.

4.2.3. ESG and payout policy in different industries

There may be differences in the degree and performance of ESG investment in different industries. First, industry characteristics will affect companies' attention to ESG. For example, the energy industry may focus on environmental protection and emission reduction, and the technology industry may focus on corporate governance and information privacy. Second, different regions attach different importance to ESG issues. Some regions may formulate strict regulations for specific industries. Such regulatory requirements can encourage companies to invest more in the ESG field. Third, certain industries may be more concerned by ESG investors. In order to meet investors'

expectations, companies will actively invest in ESG and improve performance.

We take Consumer Goods, Resource Transformation, and Technology & Communications in sector classification as examples to explore the effect of individual environmental, social, and governance performance in different industries on payout policy. In Table 8 and Table 9, columns 1 to 4 are the estimation results of Consumer Goods industry, columns 5 to 8 are the estimation results of Resource Transformation industry, and columns 9 to 12 are the estimation results of Technology & Communications industry.

Table 8 presents the influence of the three components of ESG on dividend payouts. The scores of all three dimensions in Consumer Goods industry have a positive influence on dividend payouts; the Environment score and Governance score in Resource Transformation industry have a positive impact on dividend payouts; the scores of all three dimensions in Technology & Communications industry are significantly positively related to dividend payouts at the 1% level, indicating that Technology & Communications industry attaches great importance to all aspects of ESG issues. For example, Taiwan Semiconductor Manufacturing Company Limited (TSMC), as an important supplier in the global hi-tech foundry services market, actively promotes green manufacturing, creates a diverse and inclusive workplace, establishes a responsible supply chain, cultivates talents, and cares for the disadvantaged. The increase in productivity and efficiency also improves the overall technology and competitiveness, expanding their potential for future growth. Through the reward system, they share the results of ESG practice with employees and shareholders. Additionally, we find that the Governance scores in all industries have a significant effect on dividend payouts at the 1% level. It seems that corporate governance is the key factor in the three components of ESG.

The influence of Environment, Social, and Governance scores on share repurchases is presented in Table 9. The Social score and Governance score in Consumer Goods industry have a negative influence on share repurchases; the scores of all three dimensions in Resource Transformation industry have a negative impact on share repurchases; the Governance score in Technology & Communications industry is negatively related to share repurchases. It is also worth noting that the Governance scores in all industries significantly affect share repurchases at the 1% level. This implies that poor corporate governance may reduce ESG performance; therefore, companies have more incentives to repurchase shares.

4.2.4. ESG and payout policy under different degrees of internationalization

The expansion of a company's business activities across borders is called internationalization. In seeking to grow, companies use their strengths in new markets to generate higher profits. Actively entering the international market through an internationalization strategy can maintain competitiveness. Some studies have shown that companies with a higher degree of internationalization usually have better ESG performance (Husted and Allen, 2006; Kolk and Van Tulder, 2010; Zhang et al., 2021). As companies face increasingly stringent regulations related to ESG, they must pay more attention to the environment, society and governance to comply with the regulations. When improving their ability to adapt products and services to local requirements, companies can obtain more local resources and manpower, thereby improving their performance.

We use the export ratio as an indicator of the degree of internationalization, which is defined as the ratio of foreign sales to total sales. Then, the sample is divided into high and low groups to examine whether the difference in the degree of internationalization of

companies has an effect on the relationship between ESG performance and payout policy. Due to missing data in the sample, the number of observations is reduced from 9,180 to 7,608 after deletion. We use different thresholds to define the degree of internationalization. In columns 1 and 2 of Table 10 and Table 11, high and low internationalization are demarcated by the median export ratio. In columns 3 and 4, high and low internationalization are defined as the top and bottom quartiles of export ratio in our sample, respectively.

The estimation results in Table 10 show that under two different thresholds, both highly and lowly internationalized companies' ESG performance have a significant and positive effect on dividend payouts, that is, when the ESG score increases, the company's dividend payouts will increase. In columns 1 and 2, the *ESG* coefficient of the high group is slightly larger than that of the low group, but the results in columns 3 and 4 are different. Because of the narrow margin of difference, we suppose that the degree of internationalization is not mush relevant to ESG performance for Taiwanese companies, especially when ESG concept is widely accepted by most companies in Taiwan.

Table 11 reveals that ESG performance negatively effects share repurchases for both highly and lowly internationalized companies, which means that company's share repurchases will decrease if ESG score increases. Moreover, we find that lowly internationalized companies' share repurchases are more likely to be affected by ESG performance than those of highly internationalized companies. As we explain previously, the performance of lowly internationalized companies may not be as good as highly ones, so they have to do more repurchases to support their stock price and increase investors' confidence.

Furthermore, we use the foreign investors' holding ratio as an indicator of the degree of internationalization, which is defined as the ratio of the number of shares held by

foreign investors to the number of issued shares. Analyzed with different variables, the results obtained are roughly the same.

5. Endogeneity

5.1. Company fixed effects

In the previous empirical analysis, we considered that the data varies with time trends and the characteristics of each industry are also different, so we add the fixed effects of time and industry to the model. However, only considering the characteristics of the industry may ignore other company factors. Instead, we add time and company fixed effects to the model to observe whether ESG performance has an effect on payout policy.

Column 1 of Table 12 (i.e., column 2 of Table 5) includes time and industry fixed effects, illustrating the effect of ESG performance on dividend payouts. The coefficient of *ESG* is 0.05%, that is to say, companies investing in ESG activities to produce good performance will increase dividend payouts. Column 2 includes time and company fixed effects. ESG score is positively related to dividend payouts, with a significant coefficient of 0.022%. Table 13 presents the effect of ESG performance on share repurchases. In column 1 (i.e., column 2 of Table 6), which includes time and industry fixed effects, the coefficient of *ESG* is -0.02%. The higher the ESG score, the less the execution of share repurchases. After including time and company fixed effects in Column 2, the significant coefficient of *ESG* is -0.011%. Adding time and company fixed effects increases the Adjusted R^2, indicating that the regression model has better interpretability and higher precision.

5.2. Winsorize outliers

Outliers are data points that differ significantly from other observations, which may affect the process of estimating statistics. To confirm that the empirical results in this paper are not affected by extreme values, we winsorize all variables at 1% and 99% levels.

Table 14 shows the results dealing with outliers. ESG score is positively related to dividend payouts at the 1% level, indicating that companies with better ESG performance pay more dividends. ESG score is negatively related to share repurchases at the 1% level, indicating that companies with better ESG performance have fewer repurchases. The results do not produce significant differences. Therefore, the empirical results are still robust.

5.3. Lagged variables

In order to control for endogeneity problem and obtain the robustness results, we include the company's lagged ESG score in the two equations, which are expressed as follows:

$$DIV_{i,t}=\beta_0+\beta_1 ESG_{i,t\text{-}1}+\beta_2 Size_{i,t\text{-}1}+\beta_3 ROA_{i,t\text{-}1}+\beta_4 ROE_{i,t\text{-}1}+\beta_5 GTA_{i,t\text{-}1} +\beta_6 SG_{i,t\text{-}1}+\beta_7 MB_{i,t\text{-}1}+\beta_8 LEV_{i,t\text{-}1}+\beta_9 Cash_{i,t\text{-}1}+\beta_{10} RETA_{i,t\text{-}1}+\varepsilon_{i,t} \quad (5)$$

$$SR_{i,t}=\beta_0+\beta_1 ESG_{i,t\text{-}1}+\beta_2 Size_{i,t\text{-}1}+\beta_3 ROA_{i,t\text{-}1}+\beta_4 ROE_{i,t\text{-}1}+\beta_5 GTA_{i,t\text{-}1} +\beta_6 SG_{i,t\text{-}1}+\beta_7 MB_{i,t\text{-}1}+\beta_8 LEV_{i,t\text{-}1}+\beta_9 Cash_{i,t\text{-}1}+\beta_{10} RETA_{i,t\text{-}1}+\varepsilon_{i,t} \quad (6)$$

where i and t refer to the company and the time (fiscal year), respectively. Other variables retain their previously defined meanings.

The results in Table 15 present a positive relationship between ESG score and dividend payouts, and a negative relationship with share repurchases, which means that the improvement of ESG performance leads to higher dividends and fewer repurchases. These results hold after accounting for endogeneity problem.

6. Conclusion

Our research includes data on 1,530 listed and OTC-listed companies in Taiwan from 2015 to 2020, and mainly examines the relationship between companies' ESG performance and payout policy. The findings reveal that ESG scores are positively and significantly correlated with the dividend payout ratio, that is to say, the more actively companies engage in ESG activities, the more dividends they pay. Considering the possible transmission channels, we also demonstrate that ESG practices help companies improve profitability and performance, and increase dividend payouts. In contrast, ESG scores are negatively correlated with share repurchases. Compared with Western countries, Taiwanese companies mostly use share repurchases to maintain stock prices, rather than using them as a way to reward shareholders. Therefore, when companies have better performance, the proportion of share repurchases will decrease.

Next, we compare the three industries of Consumer Goods, Resource Transformation, and Technology & Communications, and find that the coefficient of *ESG* and its components in Technology & Communications industry are significantly positively related to dividend payouts at the 1% level. Taiwan's semiconductor industry plays a pivotal role in the global semiconductor market. They are dedicated to sustainable development, such as formulating ESG strategies, promoting implementation, active governance and transparent disclosure. Through these actions, good rewards can be obtained, and at the same time, profit growth can be brought to shareholders. Additionally, corporate governance practices, reflected by the governance component of ESG, have a positive influence on dividend payouts and a negative impact on share repurchases in the three industries, which is significant at the 1% level. This can further explain that corporate governance is the key factor in the three dimensions of ESG.

Finally, we divide the sample into two groups with high and low internationalization,

and research whether differences in the degree of internationalization have an effect on the relationship between ESG performance and payout policy. Empirical analysis shows that ESG scores of both groups are positively correlated with dividend payouts. Although grouping samples by the two thresholds has different results, the difference between the *ESG* coefficients of the high and low groups is still not substantial. Our explanation for this result: global trend drives Taiwanese companies to pay some amount of attention to ESG issues. Therefore, the degree of internationalization may not be much relevant to ESG performance for Taiwanese companies. In contrast, ESG scores of highly and lowly internationalized companies negatively affect companies' share repurchases, and the ESG performance of lowly internationalized companies has a more significant negative effect on share repurchases. Since companies with a low degree of internationalization may have poor performance, they need more share repurchases to support stock prices and boost investors' confidence.

In conclusion, ESG has a positive impact on companies. The implementation of ESG improves competitiveness, attracts outstanding talents, and strengthens the interaction with stakeholders. Good performance drive profitable growth, thereby returning benefits to shareholders.

References

Allen, F., & Michaely, R. (2003). Payout Policy. Ch7 in *Handbook of the Economics of Finance*, *1*, 337–429.

Benlemlih, M. (2019). Corporate Social Responsibility and Dividend Policy. *International Business and Finance*, *47*, 114–138.

Cahan, S. F., Chen, C., Chen, L., & Nguyen, N. H. (2015). Corporate Social Responsibility and Media Coverage. *Journal of Banking and Finance*, *59*, 409–422.

Chauhan, Y., & Kumar S. B. (2019). The Value Relevance of Nonfinancial Disclosure: Evidence from Foreign Equity Investment. *Journal of Multinational Financial Management*, *52–53*.

Cheung, Y. L., Jiang, K., Mak, B. S. C., & Tan, W. (2013). Corporate Social Performance, Firm Valuation, and Industrial Difference: Evidence from Hong Kong. *Journal of Business Ethics*, *114*(4), 625–631.

Croom, S., Vidal, N., Spetic, W., Marshall, D., & McCarthy, L. (2018). Impact of Social Sustainability Orientation and Supply Chain Practices on Operational Performance. *International Journal of Operations & Production Management*, *38*(12), 2344–2366.

DeAngelo, H., DeAngelo, L., & Stulz R. M. (2006). Dividend Policy and the Earned/Contributed Capital Mix: A Test of the Life-Cycle Theory. *Journal of Financial Economics*, *81*(2), 227–254.

Denis, D. J., & Osobov, I. (2008). Why Do Firms Pay Dividends? International Evidence on the Determinants of Dividend Policy. *Journal of Financial Economics*, *89*(1), 62–82.

Derwall, J., Guenster, N., Bauer, R., & Koedijk, K. (2005). The Eco-Efficiency Premium Puzzle. *Financial Analysts Journal*, *61*(2), 51–63.

Easterbrook, F. H. (1984). Two Agency-Cost Explanations of Dividends. *American*

Economic Review, *74*(4), 650–659.

Fama, E. F., & French, K. R. (2001). Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay? *Journal of Financial Economics*, *60*(1), 3–43.

Farooq, O., & Jabbouri, I. (2015). Cost of Debt and Dividend Policy: Evidence from the MENA Region. *Journal of Applied Business Research*, *31*(5), 1637–1644.

Farre-Mensa, J., Michaely, R., & Schmalz, M. (2014). Payout Policy. *Annual Review of Financial Economics*, *6*(1), 75–134.

Fatemi, A., Fooladi, I. J., & Wheeler, D. (2009). The Relative Valuation of Socially Responsible Firms: An Exploratory Study. Ch8 in *Finance for a Better World*, 140–167.

Grullon, G., & Michaely, R. (2002). Dividends, Share Repurchases, and the Substitution Hypothesis. *The Journal of Finance*, *57*(4), 1649–1684.

Grullon, G., Michaely, R., & Swaminathan, B. (2002). Are Dividend Changes a Sign of Firm Maturity? *The Journal of Business*, *75*(3), 387–424.

Husted, B. W., & Allen, D. B. (2006). Corporate Social Responsibility in the Multinational Enterprise: Strategic and Institutional Approaches. *Journal of International Business Studies*, *37*(6), 838–849.

Jensen, M. C. (1986). Agency Cost of Free Cash Flow, Corporate Finance, and Takeovers. *American Economic Review*, *76*(2), 323–329.

Kolk, A., & van Tulder, R. (2010). International Business, Corporate Social Responsibility and Sustainable Development. *International Business Review*, *19*(2), 119–125.

Lys, T., Naughton, J. P., & Wang C. (2015). Signaling through Corporate Accountability Reporting. *Journal of Accounting and Economics*, *60*(1), 56–72.

Masum, A. (2014). Dividend Policy and Its Impact on Stock Price: A Study on Commercial Banks Listed in Dhaka Stock Exchange. *Global Disclosure of Economics and Business*, *3*(1), 7–16.

Mathur, I., Singh, M., Nejadmalayeri, A., & Jiraporn, P. (2013). How Do Bond Investors Perceive Dividend Payouts? *Research in International Business and Finance, 27*(1), 92–105.

Michaely, R., & Moin, A. (2022). Disappearing and Reappearing Dividends. *Journal of Financial Economics*, *143*(1), 207–226.

Michaely, R., Rossi, S., & Weber, M. (2021). Signaling Safety. *Journal of Financial Economics*, *139*(2), 405–427.

Miller, M. H., & Rock, K. (1985). Dividend Policy under Asymmetric Information. *The Journal of Financial*, *40*(4), 1031–1051.

Park, S. R., & Jang, J. Y. (2021). The Impact of ESG Management on Investment Decision: Institutional Investors' Perceptions of Country-Specific ESG Criteria. *International Journal of Financial Studies*, *9*(3), 48.

Parmar, B. L., Freeman, R. E., Harrison J. S., Wicks, A. C., Purnell, L., & De Colle, S. (2010). Stakeholder Theory: The State of the Art. *Academy of Management Annals*, *4*(1), 403–445.

Su, N. H., & Lin, C. J. (2012). The Impact of Open-Market Share Repurchases on Long-Term Stock Returns: Evidence from the Taiwanese Market. *Emerging Markets Finance & Trade*, *48*(2), 200–229.

Vaupel, M., Bendig, D., Fischer-Kreer, D., & Brettel, M. (2023). The Role of Share Repurchases for Firms' Social and Environmental Sustainability. *Journal of Business Ethics*, *183*(2), 401–428.

Wang, K. C. (2016). The Effect of Stock Repurchase on Stock Returns and Corporate

Performance. Master's thesis, National Sun Yat-sen University, Kaohsiung City, Taiwan.

Wu, M. W., & Shen, C. H. (2013). Corporate Social Responsibility in the Banking Industry: Motives and Financial Performance. *Journal of Banking and Finance*, *37*(9), 3529–3547.

Xie, J., Nozawa, W., Yagi, M., Fujii, H., & Managi, S. (2019). Do Environmental, Social, and Governance Activities Improve Corporate Financial Performance? *Business Strategy and the Environment*, *28*(2), 286–300.

Yeh, Y. C. (2021). The Study on Relation Between Open Market Repurchases and Corporate Performance in Taiwan Listed Firms. Master's thesis, National Cheng Kung University, Tainan City, Taiwan.

Zhang, G., Wang, L., Guo, F., & Yang, G. (2021). Does Corporate Internationalization Affect Corporate Social Responsibility? Evidence from China. *Emerging Markets Review*, *46*.

Table 1. Sample distribution by thematic sectors

SASB Thematic Sectors	Number of companies	Percentage
Consumer Goods	172	11.24%
Extractives & Minerals Processing	70	4.58%
Food & Beverage	44	2.88%
Health Care	90	5.88%
Infrastructure	117	7.65%
Renewable Resources & Alternative Energy	19	1.24%
Resource Transformation	260	16.99%
Services	49	3.20%
Technology & Communications	631	41.24%
Transportation	78	5.10%
Total	1530	100.00%

Table 2. Sample distribution by industries

SASB Industries	Number of companies	Percentage
Apparel, Accessories & Footwear	68	4.44%
Appliance Manufacturing	21	1.37%
Building Products &Furnishings	14	0.92%
Household & Personal Products	9	0.59%
Toys &Sporting Goods	19	1.24%
Multiline and Specialty Retailers & Distributors	37	2.42%
E-commerce	4	0.26%
Coal Operations	3	0.20%
Construction Materials	14	0.92%
Iron & Steel Producers	44	2.88%
Metals & Mining	5	0.33%
Oil & Gas - Refining & Marketing	4	0.26%
Agricultural Products	10	0.65%
Meat, Poultry & Dairy	3	0.20%
Processed Foods	8	0.52%
Non-Alcoholic Beverages	8	0.52%
Food Retailers & Distributors	2	0.13%
Restaurants	13	0.85%
Biotechnology & Pharmaceuticals	48	3.14%
Drug Retailers	3	0.20%
Health Care Delivery	4	0.26%
Health Care Distributors	5	0.33%
Medical Equipment & Supplies	30	1.96%
Gas Utilities & Distributors	6	0.39%
Water Utilities & Distributors	2	0.13%
Engineering & Construction Services	21	1.37%
Home Builders	8	0.52%
Real Estate	65	4.25%
Real Estate Services	4	0.26%
Waste Management	11	0.72%
Fuel Cells & Industrial Batteries	2	0.13%
Solar Technology & Project Developers	11	0.72%
Wind Technology & Project Developers	1	0.07%
Pulp & Paper Products	5	0.33%
Aerospace & Defense	4	0.26%
Containers & Packaging	12	0.78%
Electrical & Electronic Equipment	129	8.43%
Industrial Machinery & Goods	54	3.53%
Chemicals	61	3.99%
Media & Entertainment	11	0.72%
Casinos & Gaming	1	0.07%
Hotel & Lodging	15	0.98%
Leisure Facilities	4	0.26%
Education	3	0.20%

Professional & Commercial Services	15	0.98%
Electronic Manufacturing Services & Original Design Manufacturing	31	2.03%
Hardware	315	20.59%
Software & IT Services	45	2.94%
Internet Media & Services	6	0.39%
Semiconductors	225	14.71%
Telecommunication Services	9	0.59%
Airlines	2	0.13%
Air Freight & Logistics	4	0.26%
Automobiles	8	0.52%
Auto Parts	47	3.07%
Marine Transportation	11	0.72%
Rail Transportation	1	0.07%
Road Transportation	5	0.33%
Total	1530	100.00%

Table 3. Descriptive statistics of variables

Variables	Mean	Std. Dev.	P5	P25	Median	P75	P95
DIV	0.0309	0.0402	0.0000	0.0000	0.0195	0.0458	0.1038
SR	0.0049	0.0189	0.0000	0.0000	0.0000	0.0000	0.0275
ESG	54.6449	7.6230	42.9100	49.3100	54.0700	59.5700	68.4205
Environment	54.7857	10.7384	41.7695	45.9400	52.8100	62.0200	75.3500
Social	55.0299	10.1748	39.8595	47.4275	54.2350	61.7400	73.2805
Governance	54.2013	10.7794	36.0500	46.8200	54.7000	61.4825	71.9815
Size	22.2578	1.4744	20.2084	21.2498	22.0775	23.0541	24.9933
ROA	0.0366	0.0903	-0.1042	0.0076	0.0399	0.0778	0.1588
ROE	0.0479	0.2850	-0.2080	0.0072	0.0666	0.1346	0.2531
GTA	0.0572	0.2693	-0.1731	-0.0414	0.0234	0.1006	0.3559
SG	1.7992	102.6264	-0.3617	-0.1050	0.0050	0.1164	0.5052
MB	1.9292	2.5272	0.6100	0.9500	1.3900	2.1700	4.6700
LEV	0.4140	0.1824	0.1206	0.2753	0.4159	0.5439	0.7127
Cash	0.1895	0.1389	0.0243	0.0856	0.1609	0.2578	0.4591
RETA	0.0757	1.3409	-0.2974	0.0448	0.1389	0.2483	0.4226

Table 4. Correlation of main variables

***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

	DIV		*SR*		*ESG*		*Environment*		*Social*		*Governance*
DIV	1.00000										
SR	-0.01632		1.00000								
ESG	0.21392	***	-0.06681	***	1.00000						
Environment	0.11064	***	-0.02207	**	0.69917	***	1.00000				
Social	0.14147	***	-0.01897	*	0.75615	***	0.47478	***	1.00000		
Governance	0.19666	***	-0.10127	***	0.69680	***	0.19626	***	0.19583	***	1.00000

Table 5. The effect of ESG performance on dividend payouts

The dependent variable is the ratio of cash dividends to total assets. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. Among the control variables, *Size* is the natural logarithm of the total assets; *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity; *GTA* is the ratio change of total assets; *SG* is the ratio change of sales; *MB* is the ratio of the market value of equity to the book value of equity; *LEV* is the ratio of total debt to total assets; $Cash$ is the ratio of cash to total assets; *RETA* is retained earnings divided by total assets. All regressions include industry and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent Variables	*DIV*	
	(1)	(2)
Intercept	-0.02884 ***	0.02250 ***
	(0.00758)	(0.00758)
ESG	0.00112 ***	0.00050 ***
	(0.00005)	(0.00005)
Size		-0.00131 ***
		(0.00027)
ROA		0.25048 ***
		(0.00471)
ROE		0.00004
		(0.00140)
GTA		-0.00968 ***
		(0.00119)
SG		0.00000
		(0.00000)
MB		0.00394 ***
		(0.00015)
LEV		-0.02463 ***
		(0.00202)
Cash		0.02878 ***
		(0.00262)
RETA		0.00201 ***
		(0.00027)
Industry FE	Included	Included
Year FE	Included	Included
F-statistic	15.76507 ***	121.22440 ***
Adjusted R^2	0.09202	0.48534
Observations	9180	9180

Table 6. The effect of ESG performance on share repurchases

The dependent variable is the ratio of share repurchases to total assets. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. Among the control variables, *Size* is the natural logarithm of the total assets; *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity; *GTA* is the ratio change of total assets; *SG* is the ratio change of sales; *MB* is the ratio of the market value of equity to the book value of equity; *LEV* is the ratio of total debt to total assets; *Cash* is the ratio of cash to total assets; *RETA* is retained earnings divided by total assets. All regressions include industry and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent Variables	*SR*	
	(1)	(2)
Intercept	0.01062 ***	0.00497
	(0.00370)	(0.00490)
ESG	-0.00018 ***	-0.00020 ***
	(0.00003)	(0.00003)
Size		0.00043 **
		(0.00018)
ROA		-0.00452
		(0.00305)
ROE		0.00087
		(0.00090)
GTA		-0.00152 **
		(0.00077)
SG		0.00000
		(0.00000)
MB		0.00045 ***
		(0.00010)
LEV		-0.00537 ***
		(0.00131)
Cash		-0.00843 ***
		(0.00169)
RETA		0.00055 ***
		(0.00018)
Industry FE	Included	Included
Year FE	Included	Included
F-statistic	3.96263 ***	4.31353 ***
Adjusted R^2	0.01993	0.02533
Observations	9180	9180

Table 7. Transmission channels: Relationship between ESG performance, ROA and payout policy

The dependent variables are the ratio of cash dividends to total assets, and the ratio of share repurchases to total assets. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. *ESG×ROA* is an interaction term, which measures the role of ESG performance in the relationship between ROA and payout policy. *ROA* is the ratio of net income to total assets. *Size* is the natural logarithm of the total assets. *ROE* is the ratio of net income to shareholders' equity. *GTA* is the ratio change of total assets. *SG* is the ratio change of sales. *MB* is the ratio of the market value of equity to the book value of equity. *LEV* is the ratio of total debt to total assets. *Cash* is the ratio of cash to total assets. *RETA* is retained earnings divided by total assets. All regressions include industry and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent Variables	*DIV*	*SR*
	(1)	(2)
Intercept	0.04356 ***	0.00565
	(0.00745)	(0.00494)
ESG	0.00007	-0.00022 ***
	(0.00005)	(0.00003)
ESG×ROA	0.01013 ***	0.00033
	(0.00047)	(0.00031)
ROA	-0.27809 ***	-0.02157
	(0.02471)	(0.01639)
Size	-0.00128 ***	0.00043 **
	(0.00027)	(0.00018)
ROE	0.00052	0.00089
	(0.00136)	(0.00090)
GTA	-0.00886 ***	-0.00149 *
	(0.00116)	(0.00077)
SG	0.00000	0.00000
	(0.00000)	(0.00000)
MB	0.00326 ***	0.00043 ***
	(0.00015)	(0.00010)
LEV	-0.02379 ***	-0.00534 ***
	(0.00197)	(0.00131)
Cash	0.02846 ***	-0.00844 ***
	(0.00255)	(0.00169)
RETA	0.00196 ***	0.00055 ***
	(0.00027)	(0.00018)
Industry FE	Included	Included
Year FE	Included	Included
F-statistic	132.26030 ***	4.26985 ***
Adjusted R^2	0.51074	0.02535
Observations	9180	9180

Table 8. The effect of environmental, social, and governance performance in different industries on dividend payouts

The dependent variables are the ratios of cash dividends to total assets in Consumer Goods industry, Resource Transformation industry, and Technology & Communications industry. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. *Environment* is the Environment score. *Social* is the Social score. *Governance* is the Governance score. Among the control variables, *Size* is the natural logarithm of the total assets; *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity; *GTA* is the ratio change of total assets; *SG* is the ratio change of sales; *MB* is the ratio of the market value of equity to the book value of equity; *LEV* is the ratio of total debt to total assets; *Cash* is the ratio of cash to total assets; *RETA* is retained earnings divided by total assets. All regressions include industry and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent	Consumer Goods				Resource Transformation				Technology & Communications			
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Intercept	0.00448	0.01089	0.01008	0.00157	0.03851 ***	0.04303 ***	0.04208 ***	0.02998 ***	0.02612 **	0.02958 ***	0.03017 ***	0.01800
	(0.01358)	(0.01367)	(0.01359)	(0.01387)	(0.01136)	(0.01136)	(0.01140)	(0.01156)	(0.01112)	(0.01123)	(0.01121)	(0.01120)
ESG	0.00041 ***				0.00029 ***				0.00077 ***			
	(0.00010)				(0.00008)				(0.00009)			
Environment		0.00013 *				0.00010 *				0.00037 ***		
		(0.00007)				(0.00006)				(0.00006)		
Social			0.00022 ***				-0.00001				0.00051 ***	
			(0.00007)				(0.00007)				(0.00008)	
Governance				0.00018 ***				0.00026 ***				0.00028 ***
				(0.00007)				(0.00005)				(0.00006)
Size	-0.00106	-0.00065	-0.00085	-0.00026	-0.00178 ***	-0.00150 ***	-0.00120 **	-0.00131 ***	-0.00198 ***	-0.00109 **	-0.00175 ***	-0.00037
	(0.00064)	(0.00065)	(0.00064)	(0.00061)	(0.00052)	(0.00052)	(0.00054)	(0.00050)	(0.00050)	(0.00047)	(0.00051)	(0.00044)
ROA	0.34899 ***	0.34728 ***	0.34834 ***	0.34800 ***	0.34359 ***	0.34480 ***	0.34567 ***	0.34336 ***	0.33556 ***	0.33791 ***	0.33593 ***	0.33658 ***
	(0.01766)	(0.01776)	(0.01772)	(0.01774)	(0.01567)	(0.01572)	(0.01573)	(0.01561)	(0.01610)	(0.01617)	(0.01615)	(0.01619)
ROE	-0.07112 ***	-0.06931 ***	-0.07058 ***	-0.06967 ***	-0.00996	-0.00933	-0.00913	-0.01042	-0.05371 ***	-0.05190 ***	-0.05162 ***	-0.05258 ***
	(0.00778)	(0.00781)	(0.00780)	(0.00780)	(0.00698)	(0.00700)	(0.00700)	(0.00696)	(0.00830)	(0.00833)	(0.00832)	(0.00834)
GTA	-0.00451 **	-0.00436 **	-0.00432 **	-0.00457 **	-0.01374 ***	-0.01419 ***	-0.01437 ***	-0.01384 ***	-0.01356 ***	-0.01435 ***	-0.01421 ***	-0.01429 ***

	(0.00187)	(0.00188)	(0.00187)	(0.00188)	(0.00398)	(0.00399)	(0.00399)	(0.00396)	(0.00257)	(0.00258)	(0.00258)	(0.00258)
SG	0.00000	-0.00007	-0.00005	-0.00004	-0.00102 ***	-0.00102 ***	-0.00103 ***	-0.00100 ***	0.00280 **	0.00288 **	0.00284 **	0.00293 **
	(0.00041)	(0.00042)	(0.00042)	(0.00042)	(0.00033)	(0.00033)	(0.00033)	(0.00033)	(0.00115)	(0.00115)	(0.00115)	(0.00116)
MB	0.00906 ***	0.00915 ***	0.00938 ***	0.00900 ***	0.00322 ***	0.00325 ***	0.00326 ***	0.00317 ***	0.00350 ***	0.00365 ***	0.00354 ***	0.00368 ***
	(0.00048)	(0.00048)	(0.00048)	(0.00049)	(0.00027)	(0.00027)	(0.00027)	(0.00027)	(0.00031)	(0.00031)	(0.00031)	(0.00031)
LEV	-0.03548 ***	-0.03521 ***	-0.03570 ***	-0.03602 ***	-0.02681 ***	-0.02723 ***	-0.02668 ***	-0.02507 ***	-0.01989 ***	-0.02265 ***	-0.01784 ***	-0.02133 ***
	(0.00426)	(0.00430)	(0.00427)	(0.00427)	(0.00420)	(0.00423)	(0.00423)	(0.00420)	(0.00390)	(0.00391)	(0.00394)	(0.00391)
Cash	-0.00117	-0.00062	-0.00031	-0.00219	0.03238 ***	0.03264 ***	0.03294 ***	0.03195 ***	0.03146 ***	0.03239 ***	0.03369 ***	0.03289 ***
	(0.00561)	(0.00565)	(0.00563)	(0.00565)	(0.00575)	(0.00577)	(0.00577)	(0.00573)	(0.00455)	(0.00457)	(0.00455)	(0.00457)
RETA	0.01347 ***	0.01343 ***	0.01390 ***	0.01272 ***	0.00235	0.00277	0.00278	0.00188	0.00261 ***	0.00258 ***	0.00262 ***	0.00262 ***
	(0.00253)	(0.00255)	(0.00255)	(0.00254)	(0.00176)	(0.00176)	(0.00176)	(0.00176)	(0.00040)	(0.00040)	(0.00040)	(0.00040)
Industry FE	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Year FE	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
F-statistic	109.63520 ***	107.79000 ***	108.63620 ***	108.26490 ***	116.97630 ***	115.70150 ***	115.32940 ***	118.29730 ***	137.98590 ***	135.25030 ***	135.94310 ***	134.48460 ***
Adjusted R^2	0.68874	0.68506	0.68676	0.68601	0.58565	0.58297	0.58218	0.58840	0.41990	0.41499	0.41624	0.41361
Observations	1032	1032	1032	1032	1560	1560	1560	1560	3786	3786	3786	3786

Table 9. The effect of environmental, social, and governance performance in different industries on share repurchases

The dependent variables are the ratios of share repurchases to total assets in Consumer Goods industry, Resource Transformation industry, and Technology & Communications industry. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. *Environment* is the Environment score. *Social* is the Social score. *Governance* is the Governance score. Among the control variables, *Size* is the natural logarithm of the total assets; *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity; *GTA* is the ratio change of total assets; *SG* is the ratio change of sales; *MB* is the ratio of the market value of equity to the book value of equity; *LEV* is the ratio of total debt to total assets; *Cash* is the ratio of cash to total assets; *RETA* is retained earnings divided by total assets. All regressions include industry and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent Variables	Consumer Goods				Resource Transformation				Technology & Communications			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Intercept	0.00773	0.00224	0.00309	0.01139	0.01938 *	0.01305	0.01021	0.02277 **	0.02394 ***	0.02498 ***	0.02574 ***	0.02701 ***
	(0.01348)	(0.01355)	(0.01350)	(0.01374)	(0.01106)	(0.01108)	(0.01106)	(0.01133)	(0.00611)	(0.00615)	(0.00614)	(0.00610)
ESG	-0.00035 ***				-0.00040 ***				-0.00012 **			
	(0.00010)				(0.00008)				(0.00005)			
Environment		-0.00011				-0.00016 ***				0.00002		
		(0.00007)				(0.00006)				(0.00003)		
Social			-0.00016 **				-0.00030 ***				0.00008 *	
			(0.00007)				(0.00007)				(0.00004)	
Governance				-0.00018 ***				-0.00018 ***				-0.00016 ***
				(0.00007)				(0.00005)				(0.00003)
Size	0.00103	0.00066	0.00076	0.00036	0.00047	0.00017	0.00068	-0.00021	0.00023	-0.00015	-0.00036	0.00016
	(0.00064)	(0.00065)	(0.00064)	(0.00060)	(0.00051)	(0.00051)	(0.00053)	(0.00049)	(0.00027)	(0.00026)	(0.00028)	(0.00024)
ROA	-0.00522	-0.00374	-0.00449	-0.00450	-0.00797	-0.00935	-0.00973	-0.00917	-0.01712 *	-0.01746 **	-0.01775 **	-0.01676 *
	(0.01753)	(0.01761)	(0.01759)	(0.01757)	(0.01524)	(0.01532)	(0.01525)	(0.01531)	(0.00884)	(0.00885)	(0.00885)	(0.00882)
ROE	-0.00657	-0.00814	-0.00725	-0.00770	0.00119	0.00040	0.00022	0.00096	0.00557	0.00506	0.00500	0.00617
	(0.00772)	(0.00774)	(0.00775)	(0.00773)	(0.00679)	(0.00682)	(0.00679)	(0.00682)	(0.00456)	(0.00456)	(0.00455)	(0.00454)
GTA	0.00027	0.00014	0.00011	0.00035	-0.00343	-0.00287	-0.00344	-0.00296	-0.00268 *	-0.00243 *	-0.00235 *	-0.00284 **
	(0.00185)	(0.00186)	(0.00186)	(0.00186)	(0.00387)	(0.00389)	(0.00387)	(0.00388)	(0.00141)	(0.00141)	(0.00141)	(0.00141)

SG	-0.00011	-0.00005	-0.00006	-0.00008	-0.00016	-0.00015	-0.00012	-0.00016	-0.00056	-0.00060	-0.00061	-0.00056
	(0.00041)	(0.00041)	(0.00041)	(0.00041)	(0.00032)	(0.00033)	(0.00032)	(0.00033)	(0.00063)	(0.00063)	(0.00063)	(0.00063)
MB	0.00120 **	0.00113 **	0.00095 **	0.00130 ***	0.00038	0.00035	0.00030	0.00039	0.00106 ***	0.00101 ***	0.00098 ***	0.00106 ***
	(0.00047)	(0.00048)	(0.00048)	(0.00048)	(0.00026)	(0.00026)	(0.00026)	(0.00026)	(0.00017)	(0.00017)	(0.00017)	(0.00017)
LEV	-0.00258	-0.00280	-0.00236	-0.00209	-0.00892 **	-0.00821 **	-0.00767 *	-0.01017 **	-0.00466 **	-0.00449 **	-0.00386 *	-0.00449 **
	(0.00423)	(0.00426)	(0.00424)	(0.00423)	(0.00409)	(0.00412)	(0.00410)	(0.00412)	(0.00214)	(0.00214)	(0.00216)	(0.00213)
Cash	-0.02249 ***	-0.02296 ***	-0.02313 ***	-0.02144 ***	-0.02719 ***	-0.02744 ***	-0.02853 ***	-0.02728 ***	-0.00140	-0.00196	-0.00194	-0.00099
	(0.00557)	(0.00560)	(0.00559)	(0.00559)	(0.00560)	(0.00563)	(0.00560)	(0.00562)	(0.00250)	(0.00250)	(0.00249)	(0.00249)
RETA	0.00229	0.00233	0.00201	0.00301	0.00666 ***	0.00610 ***	0.00610 ***	0.00670 ***	0.00096 ***	0.00096 ***	0.00097 ***	0.00096 ***
	(0.00251)	(0.00252)	(0.00253)	(0.00252)	(0.00171)	(0.00172)	(0.00171)	(0.00172)	(0.00022)	(0.00022)	(0.00022)	(0.00022)
Industry FE	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Year FE	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
F-statistic	2.87322 ***	2.41651 ***	2.53041 ***	2.64566 ***	4.39584 ***	3.49503 ***	4.19628 ***	3.66048 ***	5.55832 ***	5.31738 ***	5.46495 ***	6.74121 ***
Adjusted R^2	0.03675	0.02804	0.03023	0.03243	0.03974	0.02951	0.03749	0.03141	0.02352	0.02230	0.02305	0.02944
Observations	1032	1032	1032	1032	1560	1560	1560	1560	3786	3786	3786	3786

Table 10. The effect of different degrees of internationalization on the relationship between ESG performance and dividend payouts

The dependent variable is the ratio of cash dividends to total assets. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. Among the control variables, *Size* is the natural logarithm of the total assets; *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity; *GTA* is the ratio change of total assets; *SG* is the ratio change of sales; *MB* is the ratio of the market value of equity to the book value of equity; *LEV* is the ratio of total debt to total assets; *Cash* is the ratio of cash to total assets; *RETA* is retained earnings divided by total assets. All regressions include industry and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent Variables	Median		Top/Bottom Quartile	
	High	Low	High	Low
	(1)	(2)	(3)	(4)
Intercept	0.02243 **	0.02971 *	0.04361 ***	0.05733 **
	(0.01116)	(0.01733)	(0.01358)	(0.02601)
ESG	0.00047 ***	0.00044 ***	0.00048 ***	0.00059 ***
	(0.00006)	(0.00009)	(0.00008)	(0.00009)
Size	-0.00138 ***	-0.00194 ***	-0.00252 ***	-0.00181 ***
	(0.00035)	(0.00050)	(0.00052)	(0.00058)
ROA	0.33717 ***	0.23305 ***	0.40389 ***	0.38713 ***
	(0.01049)	(0.00846)	(0.02046)	(0.01580)
ROE	-0.04962 ***	0.00163	-0.06679 ***	-0.08260 ***
	(0.00507)	(0.00192)	(0.01021)	(0.00826)
GTA	-0.00908 ***	-0.01016 ***	-0.00952 ***	-0.01000 ***
	(0.00145)	(0.00289)	(0.00185)	(0.00298)
SG	-0.00099 ***	-0.00072	-0.00174 ***	-0.00249 *
	(0.00026)	(0.00172)	(0.00031)	(0.00144)
MB	0.00664 ***	0.00396 ***	0.00589 ***	0.00335 ***
	(0.00027)	(0.00031)	(0.00037)	(0.00040)
LEV	-0.03040 ***	-0.02028 ***	-0.02457 ***	-0.02557 ***
	(0.00281)	(0.00367)	(0.00424)	(0.00373)
Cash	0.01134 ***	0.04777 ***	0.01735 ***	0.02761 ***
	(0.00332)	(0.00489)	(0.00451)	(0.00494)
RETA	0.01114 ***	0.00404 ***	0.00411	0.00510 ***
	(0.00135)	(0.00054)	(0.00371)	(0.00073)
Industry FE	Included	Included	Included	Included
Year FE	Included	Included	Included	Included
F-statistic	120.95240 ***	40.71651 ***	73.44578 ***	42.15391 ***
Adjusted R^2	0.63851	0.41526	0.66885	0.58828
Observations	3804	3804	1902	1902

Table 11. The effect of different degrees of internationalization on the relationship between ESG performance and share repurchases

The dependent variable is the ratio of share repurchases to total assets. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. Among the control variables, *Size* is the natural logarithm of the total assets; *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity; *GTA* is the ratio change of total assets; *SG* is the ratio change of sales; *MB* is the ratio of the market value of equity to the book value of equity; *LEV* is the ratio of total debt to total assets; *Cash* is the ratio of cash to total assets; *RETA* is retained earnings divided by total assets. All regressions include industry and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent Variables	Median		Top/Bottom Quartile	
	High	Low	High	Low
	(1)	(2)	(3)	(4)
Intercept	0.01522 **	-0.00840	0.01744	-0.02873
	(0.00750)	(0.00920)	(0.01073)	(0.02119)
ESG	-0.00010 ***	-0.00030 ***	-0.00014 **	-0.00050 ***
	(0.00004)	(0.00005)	(0.00006)	(0.00007)
Size	-0.00049 **	0.00119 ***	-0.00058	0.00265 ***
	(0.00023)	(0.00026)	(0.00041)	(0.00047)
ROA	0.00407	-0.00625	0.03367 **	-0.01279
	(0.00706)	(0.00449)	(0.01616)	(0.01287)
ROE	-0.00514	0.00163	-0.01535 *	0.00397
	(0.00341)	(0.00102)	(0.00806)	(0.00673)
GTA	0.00010	-0.00264 *	-0.00013	-0.00445 *
	(0.00097)	(0.00153)	(0.00146)	(0.00243)
SG	-0.00011	-0.00025	-0.00025	-0.00097
	(0.00018)	(0.00091)	(0.00025)	(0.00118)
MB	0.00015	0.00082 ***	0.00028	0.00057 *
	(0.00018)	(0.00017)	(0.00030)	(0.00032)
LEV	-0.00001	-0.00864 ***	0.00113	-0.00706 **
	(0.00189)	(0.00195)	(0.00335)	(0.00304)
Cash	0.00118	-0.00648 **	0.00331	-0.01041 ***
	(0.00223)	(0.00259)	(0.00356)	(0.00403)
RETA	0.00033	0.00098 ***	-0.00762 ***	0.00085
	(0.00091)	(0.00029)	(0.00293)	(0.00059)
Industry FE	Included	Included	Included	Included
Year FE	Included	Included	Included	Included
F-statistic	1.90295 ***	2.98360 ***	1.49889 **	3.00908 ***
Adjusted R^2	0.01312	0.03425	0.01372	0.06520
Observations	3804	3804	1902	1902

Table 12. The effect of ESG performance on dividend payouts after including company fixed effects

The dependent variable is the ratio of cash dividends to total assets. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. Among the control variables, *Size* is the natural logarithm of the total assets; *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity; *GTA* is the ratio change of total assets; *SG* is the ratio change of sales; *MB* is the ratio of the market value of equity to the book value of equity; *LEV* is the ratio of total debt to total assets; *Cash* is the ratio of cash to total assets; *RETA* is retained earnings divided by total assets. Columns 1 includes industry and year fixed effects. Columns 2 includes company and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent Variables	*DIV*	
	(1)	(2)
Intercept	0.02250 ***	0.04886 **
	(0.00758)	(0.02203)
ESG	0.00050 ***	0.00022 ***
	(0.00005)	(0.00006)
Size	-0.00131 ***	-0.00152
	(0.00027)	(0.00101)
ROA	0.25048 ***	0.14182 ***
	(0.00471)	(0.00383)
ROE	0.00004	-0.00102
	(0.00140)	(0.00097)
GTA	-0.00968 ***	-0.00323 ***
	(0.00119)	(0.00080)
SG	0.00000	0.00000
	(0.00000)	(0.00000)
MB	0.00394 ***	0.00159 ***
	(0.00015)	(0.00012)
LEV	-0.02463 ***	-0.01594 ***
	(0.00202)	(0.00291)
Cash	0.02878 ***	0.01339 ***
	(0.00262)	(0.00291)
RETA	0.00201 ***	0.00036
	(0.00027)	(0.00038)
Company FE		Included
Industry FE	Included	
Year FE	Included	Included
F-statistic	121.22440 ***	30.55638 ***
Adjusted R^2	0.48534	0.83254
Observations	9180	9180

Table 13. The effect of ESG performance on share repurchases after including company fixed effects

The dependent variable is the ratio of share repurchases to total assets. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. Among the control variables, *Size* is the natural logarithm of the total assets; *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity; *GTA* is the ratio change of total assets; *SG* is the ratio change of sales; *MB* is the ratio of the market value of equity to the book value of equity; *LEV* is the ratio of total debt to total assets; *Cash* is the ratio of cash to total assets; *RETA* is retained earnings divided by total assets. Columns 1 includes industry and year fixed effects. Columns 2 includes company and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent Variables	*SR*	
	(1)	(2)
Intercept	0.00497	0.02862 **
	(0.00490)	(0.01296)
ESG	-0.00020 ***	-0.00011 ***
	(0.00003)	(0.00004)
Size	0.00043 **	-0.00066
	(0.00018)	(0.00059)
ROA	-0.00452	-0.00394 *
	(0.00305)	(0.00225)
ROE	0.00087	-0.00022
	(0.00090)	(0.00057)
GTA	-0.00152 **	-0.00149 ***
	(0.00077)	(0.00047)
SG	0.00000	0.00000
	(0.00000)	(0.00000)
MB	0.00045 ***	-0.00003
	(0.00010)	(0.00007)
LEV	-0.00537 ***	-0.00381 **
	(0.00131)	(0.00171)
Cash	-0.00843 ***	-0.00549 ***
	(0.00169)	(0.00171)
RETA	0.00055 ***	0.00017
	(0.00018)	(0.00022)
Company FE		Included
Industry FE	Included	
Year FE	Included	Included
F-statistic	4.31353 ***	17.71435 ***
Adjusted R^2	0.02533	0.73764
Observations	9180	9180

Table 14. The effect of ESG performance on payout policy: Winsorize outliers

The dependent variables are the ratio of cash dividends to total assets, and the ratio of share repurchases to total assets. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. Among the control variables, *Size* is the natural logarithm of the total assets; *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity; *GTA* is the ratio change of total assets; *SG* is the ratio change of sales; *MB* is the ratio of the market value of equity to the book value of equity; *LEV* is the ratio of total debt to total assets; *Cash* is the ratio of cash to total assets; *RETA* is retained earnings divided by total assets. All regressions include company and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent Variables	*DIV*	*SR*
	(1)	(2)
Intercept	-0.00172	0.01562
	(0.02074)	(0.01060)
ESG	0.00021 ***	-0.00011 ***
	(0.00006)	(0.00003)
Size	0.00060	-0.00019
	(0.00095)	(0.00049)
ROA	0.26916 ***	-0.00279
	(0.00905)	(0.00462)
ROE	-0.06642 ***	-0.00160
	(0.00459)	(0.00235)
GTA	-0.00516 ***	-0.00267 ***
	(0.00115)	(0.00059)
SG	0.00113 **	-0.00033
	(0.00050)	(0.00026)
MB	0.00410 ***	0.00002
	(0.00023)	(0.00012)
LEV	-0.02406 ***	-0.00125
	(0.00276)	(0.00141)
Cash	0.01087 ***	-0.00421 ***
	(0.00265)	(0.00135)
RETA	0.00948 ***	0.00402 ***
	(0.00195)	(0.00100)
Company FE	Included	Included
Year FE	Included	Included
F-statistic	30.22031 ***	12.77075 ***
Adjusted R^2	0.83094	0.66443
Observations	9180	9180

Table 15. The effect of ESG performance on payout policy: Lagged variables

The dependent variables are the ratio of cash dividends to total assets, and the ratio of share repurchases to total assets. *ESG* is the total score after adding up the three aspects of environmental, social and governance, taking into account the level of disclosure, news information and the weight of industry. Among the control variables, *Size* is the natural logarithm of the total assets; *ROA* is the ratio of net income to total assets; *ROE* is the ratio of net income to shareholders' equity; *GTA* is the ratio change of total assets; *SG* is the ratio change of sales; *MB* is the ratio of the market value of equity to the book value of equity; *LEV* is the ratio of total debt to total assets; *Cash* is the ratio of cash to total assets; *RETA* is retained earnings divided by total assets. All regressions include company and year fixed effects. Standard errors are reported in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Independent Variables	*DIV*	*SR*
	(1)	(2)
Intercept	0.19230 ***	-0.03846 ***
	(0.02705)	(0.01302)
ESG	0.00016 **	-0.00010 ***
	(0.00008)	(0.00004)
Size	-0.00791 ***	0.00240 ***
	(0.00124)	(0.00060)
ROA	0.05598 ***	-0.00119
	(0.00471)	(0.00227)
ROE	0.00204 *	-0.00050
	(0.00119)	(0.00057)
GTA	0.00229 **	0.00002
	(0.00098)	(0.00047)
SG	0.00000	0.00000
	(0.00000)	(0.00000)
MB	0.00112 **	-0.00004
	(0.00015)	(0.00007)
LEV	0.00270	-0.01101 ***
	(0.00357)	(0.00172)
Cash	0.00332	0.00111
	(0.00357)	(0.00172)
RETA	0.00076 *	0.00007
	(0.00046)	(0.00022)
Company FE	Included	Included
Year FE	Included	Included
F-statistic	18.35324 ***	16.38408 ***
Adjusted R^2	0.74483	0.72127
Observations	9180	9180