



Study on the Impact of ESG Performance on Corporate Value of Listed Agricultural Enterprises

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Abstract. This paper empirically investigates the relationship between the previous year's ESG performance and the enterprise value of agricultural listed companies by using a two-way fixed-effects model with agricultural listed companies in Shanghai and Shenzhen A-shares from 2014 to 2023 as the research object. It is found that enhancing the previous year's ESG performance can significantly increase the enterprise value of listed agricultural companies, and this effect is more prominent in state-owned enterprises and those with higher digitisation levels.

Keywords: Agricultural enterprises; ESG performance; enterprise value; nature of property rights

1 Introduction

ESG, as an emerging investment concept and corporate evaluation standard, was first proposed by the United Nations Global Compact (UN Global Compact) in 2004, which incorporates the environment, social responsibility and corporate governance of enterprises into the consideration of investment decisions. As a basic industry of the national economy, agriculture is generally faced with problems such as high resource consumption, environmental pollution and insufficient fulfilment of social responsibility. In the current context of ESG concepts being increasingly emphasised by investors, good ESG performance not only reflects the commitment of enterprises to sustainable development but also positively affects their long-term profitability by reducing environmental risks, improving operational efficiency, and enhancing brand value. Because of this, an in-depth exploration of the intrinsic correlation between the ESG performance of listed agricultural companies in the previous year and their corporate value is of great significance in promoting agricultural companies to realise value growth by improving their ESG performance.

2 Literature Review

Considering corporate environmental performance, social responsibility fulfilment, and corporate governance (ESG) together to explore the mechanism of their impact on firm value, the findings of existing studies show a diverse pattern. Wang Bo and Yang Maojia (2022) found that ESG performance significantly increased firm value by reducing financing costs and increasing market attention^[1]. Wang Linlin et al. (2022) found that good ESG performance significantly enhances firm value by alleviating financing constraints, improving operational efficiency and reducing financial risks^[2]. Zhao, Hongjian and Jiang, Yuming (2025) found that good ESG performance significantly increases firm value by promoting firms' innovation investment. Although ESG performance is often assumed to enhance firm value, different studies reveal the complexity of this relationship^[3]. Sassen et al. (2016) find that firms that excel in ESG performance instead have lower firm value^[4]. In addition, Atan et al. (2018) found that there is no significant correlation between ESG performance and firm value through an empirical analysis of Malaysian listed companies^[5].

3 Theoretical analysis and research hypothesis

3.1 Impact of ESG performance on firm value

Resource Dependence theory suggests that the survival and development of an enterprise is highly dependent on various types of key resources drawn from the external environment, especially agribusinesses are highly dependent on external natural resources and policy support, and good ESG performance can help an enterprise to obtain more high-quality resources. Stakeholder theory emphasizes that corporate ESG practices can convey trustworthiness and commitment to sustainable development to stakeholders. For example, through ESG practices, agribusinesses can build trusting relationships with farmers, governments, and consumers, which can significantly reduce transaction costs and improve the efficiency of cooperation. It is worth noting that the impact of corporate ESG performance on corporate value has a significant lag effect, which is particularly prominent in agricultural enterprises, where it often takes 1-2 years for ESG investments to have an impact due to the long production cycle and slow technological transformation^[6]. Based on the above analysis, hypothesis H1 is proposed.

H1: The ESG performance of listed agricultural companies in the previous year has a positive effect on their enterprise value.

3.2 The impact of the nature of ownership on the relationship between ESG performance and firm value

Existing research shows that there are systematic differences between state-owned and non-state-owned enterprises in terms of social responsibility fulfilment and internal governance. Among China's listed agricultural companies, state-owned agricultural

enterprises account for as much as 40%, and the inherent weakness of agricultural enterprises makes their development highly dependent on government support, coupled with the fact that most of China's listed agricultural companies are restructured from township and village enterprises, and their cognition and practice level in the field of ESG is relatively limited. In this context, state-owned agricultural enterprises, with their stable policy support and resource advantages, are more likely to utilize ESG performance to obtain long-term benefits. Based on the above analysis, hypothesis H2 is proposed.

H2: There is an advantage for state-owned agribusinesses in terms of their ESG performance in the previous year compared to non-state-owned agribusinesses, which is more favorable to their enterprise value.

3.3 Impact of the degree of digital transformation on the relationship between ESG performance and firm value

At present, the digital transformation of China's agricultural enterprises still faces significant challenges. From the upstream of the industrial chain, the main production areas of agricultural products are mostly located in rural areas, and the production methods are still highly dependent on natural conditions, and the application of digital technology is obviously lagging behind. However, digital transformation for agricultural enterprises can promote the scale, standardization and intelligent transformation of their production methods, and enhance the efficiency of resource utilization and operational efficiency. Based on the above analysis, hypothesis H3 is proposed.

H3: Agribusinesses with a high degree of digital transformation have an advantage in terms of ESG performance in the previous year compared to agribusinesses with a low degree of digital transformation, which is more conducive to the enhancement of their enterprise value.

4 Research Design

4.1 Sample selection and data sources

This paper takes the agricultural listed companies in Shanghai and Shenzhen A-shares from 2014-2023 as the research object, and finally obtains a total of 1,577 observations from 237 agricultural listed companies by eliminating the samples with incomplete financial data, eliminating the samples of ST and *ST enterprises with problems in operation and management, and applying 1% bidirectional tailing to each continuous variable to reduce the influence of extreme values. Among them, the ESG rating data comes from CSI ESG rating in WIND database, the rest of the data comes from CSMAR database, and the empirical analysis is processed by Stata software and Excel.

4.2 Variable Setting and Indicator Selection

4.2.1 Explanatory variables.

The explanatory variables are selected from the CSI ESG rating data in the Wind Financial Database. In order to facilitate quantitative analysis and systematically examine the comprehensive performance of listed agricultural companies in the three dimensions of environmental performance, social responsibility fulfillment and corporate governance, this study adopts the linear assignment method to assign the nine grades from AAA to C of the ESG ratings of listed agricultural companies from 2013 to 2022 to nine points to one point in order to Constructing Continuous ESG(-1) Scoring System.

4.2.2 Explained Variables.

The explanatory variable is the firm value TobinQ, which is taken from the CSMAR database for analyzing financial indicators of Chinese listed companies. TobinQ is the ratio of the stock market value of the firm to the total replacement assets of the firm, and TobinQ is positively correlated with the relative value of the firm, and the higher the value of Q is, the firm is more favored by the investor, which can attract a large amount of investment capital more easily.

4.2.3 Control variables.

As for the control variables, it is considered that factors such as company size and nature of the enterprise will have an impact on the value of the enterprise. This paper introduces firm size (Size), return on assets (ROE), firm growth capacity (Growth), equity concentration (Top1), number of years the firm has been listed (Age), tangible assets ratio (TAR), cash flow ratio (CF), management expense ratio (Mfee), board size (Board), and institutional investor shareholding ratio (Inst) as the control variables. To further control for industry-level factors that do not change over time, industry-fixed effects and year-fixed effects are added to the model. The definitions and explanations of the specific variables are shown in Table 1.

Table 1. Definition and Interpretation of Main Variables.

Variable type	variable name	variable symbol	Variable Definition
explanatory variable	enterprise value	TobinQ	(Market value of outstanding shares at the end of the period + Market value of non-outstanding shares at the end of the period + Market value of net liabilities at the end of the period) / Total assets at the end of the period
explanatory variable	Prior year ESG performance	ESG (-1)	CSI ESG ratings, quantifying "AAA ~ C" as "9 to 1" in descending order.
control	Company size	Size	Natural logarithm of total corporate assets

variable	return on net assets	ROE	Return on net assets = Net income / Average shareholders' equity × 100%
	Ability to grow the company	Growth	Increase in net profit for the current year / Net profit for the previous year
	shareholding concentration	Top1	Shareholding ratio of the largest shareholder
	Number of years the company has been listed	Age	Natural logarithm of the number of years listed up to the current period
	Ratio of tangible assets	TAR	Net tangible assets / Total assets at the end of the year
	Cash flow ratio	CF	Net cash flows from operating activities / Total assets at the end of the year
	Management expense ratio	Mfee	Administrative Expenses / Operating Income
	Institutional investors' shareholding	Inst	Total number of shares held by institutional investors/total share capital of the company
	Board size	Board	Number of executive directors + number of non-executive directors + number of independent directors

4.3 Model construction

In order to study the impact of ESG performance on enterprise value of agricultural listed companies in the sample data in the previous year, this paper constructs an econometric model as shown in equation (1).

$$\text{TobinQ} = \beta_0 + \beta_1 \text{ESG}(-1) + \beta_2 \text{Size} + \beta_3 \text{ROE} + \beta_4 \text{Growth} + \beta_5 \text{Top1} + \beta_6 \text{Age} + \beta_7 \text{TAR} + \beta_8 \text{CF} + \beta_9 \text{Mfee} + \beta_{10} \text{Inst} + \beta_{11} \text{Board} + \mu$$

where β_0 is the model constant term, β_1 to β_{11} are the coefficients of the explanatory and control variables, and μ is the random error term.

5 Empirical results and analysis

5.1 Descriptive statistics

To exclude outliers from interfering with the estimation results, this paper shrinks the variables other than ESG at 1% and 99% of their distribution. Table 2 presents the descriptive statistics of the main variables: the mean of the explanatory variable TobinQ

is 2.529, which is greater than the median of 1.988, indicating that the overall level of enterprise value is high; the maximum of which is 11.040, the minimum of which is 0.965, and the standard deviation of which is 1.716, which shows that the value of enterprises of different natures varies considerably. The median explanatory variable ESG rating is 4.000, indicating that more than half of the enterprises have poor ESG performance; the mean value is 4, the maximum value is 7, the minimum value is 1, and the standard deviation is 1.059, implying that there is also a difference in ESG performance among different enterprises.

Among the control variables, the average enterprise size is 22.225, the maximum value is 26.332, and the minimum value is 19.288, and there is little difference in the size of the sample enterprises. The mean value of the proportion of shares held by the first largest shareholder is 35.2%, which means that the large shareholders of the sample firms occupy an important position in the firms, and the firms have a high degree of equity concentration. The mean value of firm age is 2.354, the maximum value is 3.466, and the minimum value is 0.693, and there are also significant differences in firm age. In terms of corporate financial capability, the median value of return on net assets is 0.065, and the minimum value of -45.551 is far from the maximum value of 20.746, which indicates that the sample firms have a lower overall level of profitability. The mean value of the tangible assets ratio is 93.4%, the median is 95.3%, the maximum value is 100%, and the minimum value is 33.7%, indicating that most of the sample enterprises have a relatively high proportion of tangible assets and a relatively stable asset structure. The mean value of the cash flow ratio is 7.0%, the maximum value is 65.2%, and the minimum value is -70.4%. The distribution of the cash flow ratio is relatively decentralized, indicating that the cash flow status of different sample enterprises varies greatly. The mean value of the management expense ratio is 8.3%, the maximum value is 314.9%, and the minimum value is 0.9%, indicating that there are significant differences in the management efficiency of different sample enterprises.

Table 2. Results of descriptive statistics.

variant	sample size	average value	(statistics) standard deviation	minimum value	upper quartile	maximum values
TobinQ	1577	2.529	1.716	0.965	1.988	11.040
ESG (-1)	1577	4.000	1.059	1.000	4.000	7.000
Size	1577	22.225	1.144	19.288	22.086	26.332
ROE	1577	0.006	1.692	-45.551	0.065	20.746
Growth	1577	0.416	1.492	-0.719	0.085	10.843
Top1	1577	0.352	0.147	0.039	0.340	0.900
Age	1577	2.354	0.761	0.693	2.485	3.466
TAR	1577	0.934	0.070	0.337	0.953	1.000
CF	1577	0.070	0.093	-0.704	0.067	0.652
Mfee	1577	0.083	0.132	0.009	0.059	3.149
Inst	1577	0.478	0.235	0.000	0.494	0.956
Board	1577	2.100	0.199	1.609	2.197	2.833

5.2 Correlation analysis and multicollinearity analysis

To test the scientific and rationality of variable selection, the correlation between the explanatory variables, key explanatory variables and control variables is first tested, and the results are shown in Table 3. The correlation coefficient between ESG performance and TobinQ of listed agricultural companies is 0.048, which is significantly correlated at the 10% level. The results of this analysis indicate that there is a positive association between ESG performance and enterprise value, but the correlation coefficient is relatively small, indicating that the relationship may be moderated by other factors. Considering that the simple correlation coefficient cannot control the influence of other variables and the value creation process of agricultural enterprises has multi-dimensional characteristics, to further accurately identify the influence of the previous year's ESG performance on enterprise value, the following section will conduct a regression analysis of the previous year's ESG performance and enterprise value to further explore the relationship between the two.

Table 3. Variable correlation results.

	TobinQ	ESG (-1)	Size	ROE	Growth	Top1
TobinQ	1.000					
ESG (-1)	0.048*	1.000				
Size	-0.066***	0.290***	1.000			
ROE	0.006	0.066***	0.040	1.000		
Growth	0.055**	-0.086***	-0.111***	0.006	1.000	
Top1	0.083***	0.175***	0.137***	0.051**	-0.082***	1.000
Age	0.124***	-0.104***	0.239***	-0.0350	0.090***	-0.189***
TAR	0.065**	0.119***	0.036	0.0210	-0.058**	0.123***
CF	0.229***	0.152***	0.241***	0.069***	-0.088***	0.234***
Mfee	0.191***	-0.178***	-0.214***	-0.0370	0.184***	-0.045*
Inst	0.168***	0.153***	0.318***	0.047*	-0.0340	0.495***
Board	0.052**	0.050**	0.204***	-0.009	0.117***	0.0340
	Age	TAR	CF	Mfee	Inst	Board
Age	1.000					
TAR	0.111***	1.000				
CF	0.095***	0.061**	1.000			
Mfee	0.051**	-0.003	-0.152***	1.000		
Inst	0.137***	0.008	0.186***	-0.021	1.000	
Board	0.081***	-0.009	0.095***	-0.020	0.241***	1.000

Note: *, **, *** indicate significant at the 10%, 5%, and 1% levels, respectively, with t-values in parentheses.

5.3 Regression analysis

Table 4 shows the results of the sample linear regression analysis, from the results of the full sample regression analysis in column 1: the correlation coefficient between ESG performance and enterprise value in the previous year is 0.0871, which passes the 5% significance test, indicating that the better the ESG performance of the enterprise in the previous year, the higher the enterprise value, and the experimental results are in line with the conjecture of hypothesis H1, which is proved. In addition, in terms of

control variables, firm size and enterprise value are significant at the 1% level with a correlation coefficient of -0.2935, indicating that the smaller the firm size, the larger the enterprise value instead. Firm age is significant with firm value at the 1% level with a regression coefficient of 0.3318, indicating that firms that have been on the market for a longer period are more popular with investors. The relationship between the tangible asset ratio and firm value is significant at the 1% level with a regression coefficient of 1.6435, indicating that firms with a higher percentage of tangible assets usually have a higher firm value. Cash flow ratio is positively related to firm value at the 1% level of significance with a regression coefficient of 5.1529, indicating that firms with abundant cash flow usually have higher firm value. Management expense ratio is significantly associated with firm value at the 1% level of significance, with a regression coefficient of 2.1001, indicating that firms with a higher management expense ratio usually have higher firm value. Institutional investors' shareholding ratio is significantly related to enterprise value at the 1% level, and the regression coefficient is 0.9004, indicating that enterprises with a higher institutional investors' shareholding ratio usually have higher enterprise value.

In order to test whether in the sample of state-owned enterprises, the effect of ESG performance in the previous year on the enhancement of enterprise value of agricultural listed companies is more significant, this paper divides the sample into state-owned enterprise group and non-state-owned enterprise group according to the nature of property rights, and substitutes them into the model to conduct regression respectively. The results are shown in columns 2 and 3 of Table 4, the coefficient of ESG performance of state-owned enterprise group is 0.3322, which is significant at 1% level; while the non-state-owned enterprise group fails to pass the significance test, which indicates that when the agricultural listed companies are state-owned enterprises, the enhancement of the previous year's ESG performance can significantly improve the enterprise value, and the hypothesis H2 is proved.

In this paper, we refer to the established literature, sum up the five dimensions of the CSMAR database publicly available on digitalization keywords to get the total word frequency, logarithmize it to get the degree of digital transformation of agribusinesses, and finally divide the high and low groups based on the median degree of digital transformation to perform group regression. The results are shown in columns 4 and 5 in Table 4, where the regression coefficient of ESG performance in the previous year in the sample with a high digital transformation level is 0.059, which is significant at the 10% level, while the sample with a low digital transformation level fails the significance test. This shows that the level of digital transformation has a significant moderating effect on the value creation effect of ESG - ESG performance can be effectively transformed into corporate value enhancement only when listed agricultural firms have a high level of digitalization foundation, and Hypothesis H3 is confirmed.

Table 4. Results of the baseline regression analysis.

	full sample	nationalized business	non-state enterprise	High degree of digital transformation	Low degree of digital transformation
	1	2	3	4	5
ESG (-1)	0.0871** (2.19)	0.3322*** (4.57)	0.0202 (0.40)	0.0590* (1.89)	0.0414 (1.64)
Size	-0.2935*** (-7.22)	-0.3546*** (-4.55)	-0.3848*** (-7.17)	-0.2417*** (-8.02)	-0.3039*** (-10.81)
ROE	-0.0069 (-0.31)	0.0063 (0.18)	-0.0215 (-0.76)	1.0240*** (4.85)	1.1223*** (5.69)
Growth	0.0375 (1.26)	-0.0023 (-0.06)	0.0346 (0.81)	0.2045** (2.05)	0.0753 (0.95)
Top1	-0.2413 (-0.76)	-1.7770*** (-2.98)	0.6269 (1.59)	-0.4387 (-1.49)	0.3063 (1.25)
Age	0.3318*** (5.76)	0.5639*** (3.93)	0.4760*** (6.54)	0.2739*** (5.88)	0.3391*** (9.50)
TAR	1.6435*** (2.93)	4.1921*** (3.90)	1.3838** (2.04)	2.1256*** (4.74)	0.6935* (1.95)
CF	5.1529*** (11.60)	6.8084*** (8.23)	4.4297*** (8.34)	1.8758*** (5.57)	1.5927*** (4.79)
Mfee	2.1001*** (6.88)	1.4037 (1.34)	1.9526*** (6.09)	0.5474** (2.39)	0.6037*** (3.49)
Inst	0.9004*** (4.35)	2.6684*** (4.02)	0.8527*** (3.81)	0.4519*** (2.67)	0.4615*** (3.57)
Board	-0.2722 (-1.30)	-0.1324 (-0.36)	0.1657 (0.62)	0.0528 (0.34)	-0.3467*** (-2.72)
Constant	6.0657*** (5.94)	2.4977 (1.24)	7.2485*** (5.51)	4.5201*** (5.76)	7.3736*** (10.70)
N	1,577	590	962	689	886
r ²	0.261	0.295	0.319	0.350	0.366

Note: *, **, *** indicate significant at the 10%, 5%, and 1% levels, respectively, with t-values in parentheses.

5.4 Robustness Tests

5.4.1 Incorporation of control variables.

To enhance the robustness of the findings, the paper further incorporates control variables such as employee size (Employee), management shareholding (Mshare), and the percentage of independent directors (Indep) into the baseline regression model. The regression results, as shown in column 1 in Table 5, the regression coefficient of the previous year's ESG performance is 0.0933 and is significant at the 5% level, indicating that even after controlling for more potential influencing factors, firms with superior ESG performance in the previous year still obtain a higher market value assessment, a finding that is consistent with Hypothesis H1. From columns 2 and 3 in Table 5, the ESG coefficient of state-owned agricultural firms is 0.294, which is significantly and positively related to firm value at the 1% level, while the ESG performance of non-state-owned agricultural firms does not have a significant relationship with firm value, indicating that the improved ESG performance of state-owned agricultural firms in the previous year is more pronounced in improving the value of their firms, and this finding

is consistent with Hypothesis H2. As shown in columns 4 and 5 of Table 5, the ESG coefficient of the sample with low degree of digital transformation is 0.0778, which does not pass the significance test, while the ESG coefficient of the sample with high degree of digital transformation is 0.1181, which is significantly positively correlated with the enterprise value at the 10% level, indicating that the improvement of the previous year's ESG performance in the listed agricultural enterprises with high degree of digital transformation contributes to the enhancement of enterprise value, which is consistent with hypothesis H3. enhancement and this result is consistent with hypothesis H3.

Table 5. Robustness test results.

	full sample	nationalized business	non-state enterprise	High degree of digital transformation	Low degree of digital transformation
	1	2	3	4	5
ESG (-1)	0.0933** (2.36)	0.2940*** (4.16)	0.0275 (0.54)	0.1181* (1.84)	0.0778 (1.61)
Size	-0.2477*** (-3.73)	-0.2884** (-2.42)	-0.4001*** (-4.57)	-0.0674 (-0.66)	-0.4737*** (-5.52)
ROE	0.0320 (1.08)	0.0013 (0.04)	0.0506 (0.84)	0.0253 (0.80)	0.3221** (1.98)
Growth	0.0087 (0.29)	-0.0622 (-1.45)	0.0233 (0.54)	0.0289 (0.46)	0.0254 (0.76)
Top1	-0.6597** (-2.03)	-1.8601*** (-3.11)	0.3078 (0.74)	-0.0827 (-0.16)	-0.7319* (-1.81)
Age	0.4899*** (7.35)	0.5470*** (3.66)	0.5693*** (6.90)	0.4066*** (3.73)	0.5803*** (7.14)
TAR	1.6231*** (2.92)	3.8340*** (3.66)	1.4903** (2.16)	4.5218*** (5.03)	-0.2578 (-0.38)
CF	4.9327*** (11.09)	6.0419*** (7.61)	4.3909*** (7.96)	5.6130*** (8.45)	4.0757*** (6.62)
Mfee	1.8436*** (6.14)	0.1685 (0.16)	2.0443*** (6.25)	2.8349*** (4.77)	1.4301*** (4.28)
Inst	1.9872*** (7.02)	3.4794*** (5.38)	1.5402*** (4.73)	1.7294*** (3.66)	2.1262*** (6.17)
Board	0.1699 (0.70)	0.9741** (2.45)	0.5942* (1.72)	0.6949* (1.87)	-0.4456 (-1.42)
Employee	-0.1864*** (-3.19)	-0.3806*** (-3.62)	-0.0094 (-0.12)	-0.3141*** (-3.49)	-0.0715 (-0.95)
Mshare	1.8480*** (5.28)	1.1353 (0.35)	1.1407*** (2.97)	1.5732*** (2.72)	1.9883*** (4.68)
Indep	1.0656 (1.50)	1.7551* (1.84)	1.9632* (1.67)	0.2737 (0.27)	1.4200 (1.43)
Constant	4.2598*** (3.35)	1.2019 (0.54)	5.3265*** (2.90)	-2.1543 (-1.10)	11.0039*** (6.67)
N	1,527	555	947	677	848
r ²	0.283	0.338	0.328	0.337	0.329

Note: *, **, *** denote significant at the 10%, 5%, and 1% levels, respectively, with t-values in parentheses.

5.4.2 Changing fixed effects.

In order to further control for the influence of individual presence at the firm level, this paper re-runs the regression after changing the basis of controlling for time characteristics and industry characteristics to controlling for time characteristics and individual characteristics, and the test results are shown in column 1 of Table 6. After changing to individual fixed effects, the regression coefficient of ESG performance is 0.0769, which is significant at the 10% level and consistent with the previous findings. As shown in columns 2 and 3 in Table 6, the ESG coefficient of state-owned enterprises is 0.1978, which is significantly and positively related to firm value at the 1% level, while the ESG performance of non-state-owned enterprises does not have a significant relationship with firm value, suggesting that state-owned property rights attributes reinforce the positive impact of the previous year's ESG performance on firm value, and this result is consistent with hypothesis H2. As shown in columns 4 and 5 of Table 6, the ESG coefficient of the sample with high degree of digital transformation is 0.1787, which is significantly positively related to enterprise value at the 1% level, while the sample with low degree of digital transformation fails the significance test, suggesting that digital transformation plays a positive moderating role in the process of the impact of the previous year's ESG performance on the value of the enterprise, and this result is in line with Hypothesis H3.

Table 6. Robustness test results.

	full sample	nationalized business	non-state enterprise	High degree of digital transformation	Low degree of digital transformation
	1	2	3	4	5
ESG (-1)	0.0769* (1.95)	0.1978*** (2.93)	0.0212 (0.42)	0.1787*** (3.10)	-0.0534 (-1.01)
Size	-0.6017*** (-6.26)	-0.5397*** (-3.23)	-0.6308*** (-5.04)	-0.6646*** (-4.52)	-0.4975*** (-3.45)
ROE	-0.0250 (-1.45)	-0.0220 (-0.78)	-0.0229 (-1.06)	-0.0242 (-1.41)	0.1781 (1.40)
Growth	-0.0431 (-1.47)	-0.0887** (-2.13)	-0.0231 (-0.54)	0.0096 (0.14)	-0.0598* (-1.78)
Top1	-0.0653 (-0.09)	-2.8438** (-2.10)	0.0436 (0.05)	-0.0353 (-0.03)	0.0522 (0.05)
Age	0.8024*** (4.34)	0.2688 (0.62)	1.3462*** (6.06)	0.5119 (1.64)	0.6388** (2.46)
TAR	1.5675** (2.22)	4.0859*** (3.16)	0.9433 (1.09)	1.0585 (1.04)	0.2990 (0.28)
CF	2.5040*** (6.35)	2.4563*** (3.38)	2.3611*** (5.06)	2.4316*** (4.49)	1.7328*** (3.02)
Mfee	2.2030*** (7.69)	1.2427 (1.05)	2.2014*** (7.47)	2.9902*** (6.41)	1.9193*** (5.57)
Inst	3.5052*** (8.41)	4.6457*** (5.51)	3.3904*** (6.72)	4.2029*** (6.11)	4.0371*** (7.28)
Board	0.1488 (0.55)	0.0564 (0.13)	0.2689 (0.75)	0.1923 (0.46)	-0.7750** (-2.15)
Constant	9.9350*** (4.24)	7.2981* (1.75)	10.3478*** (3.40)	11.8441*** (3.17)	11.2446*** (3.32)
N	1,562	590	945	654	850
r ²	0.659	0.655	0.696	0.795	0.683

Note: *, **, *** denote significant at the 10%, 5%, and 1% levels, respectively, with t-values in parentheses.

6 Conclusions and recommendations

Based on the panel data of 237 listed companies in the A-share agriculture industry from 2014 to 2023, this study empirically analyzes the relationship between the previous year's ESG performance and enterprise value. The findings show that the previous year's ESG performance of listed agricultural companies is significantly positively correlated with their enterprise value. Meanwhile, it is also found that state-owned enterprises and enterprises with a high degree of digital transformation are more effective in enhancing their enterprise value by improving their previous year's ESG performance compared with non-state-owned enterprises and enterprises with a low degree of digital transformation. Based on the above findings, this paper makes the following policy recommendations:

At the environmental level, enterprises should reduce greenhouse gas emissions from agricultural production, improve soil quality, promote efficient fertilization techniques such as water-fertilizer integration, and develop sustainable models such as organic agriculture, ecological agriculture and recycled agriculture. At the social level, enterprises should implement the business model of "Company + Farmers", extend and expand the agricultural industry chain, and drive the employment of farmers to increase their income; they should devote themselves to public welfare, pay attention to the disadvantaged groups of society, and contribute to the fields of education, environmental protection, and disaster relief. At the level of corporate governance, enterprises need to build a perfect risk management system, regularly assess potential risks in the market, policy and technology, and formulate corresponding response strategies.

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