

The impact of ESG on financial performance: Evidence from China

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Abstract: Nowadays, as China's economic development has entered a new stage, greater attention has been paid to sustainability issues. As a typical pronoun of green economy, ESG (Environment, social responsibility, and corporate governance) investment has been emphasized in many western developed countries, while China did not raise the related research until recent years. This article aims to explore the relationship between ESG and financial performance, to enrich the study of ESG under the Chinese background. Through analyzing a sample of 495 observations (data of 116 firms for the period 2015–2019), the results of the correlation and regression show that the correlation between ESG and financial performance is not significant in the short term. This paper also discusses the reasons for this result. On the one hand, the development of China's capital market started late. Compared with ESG, the formation of a standardized market system and the creation of wealth are of higher priority. On the other hand, even an investment in ESG may not be immediately effective, which may be a long-term investment.

1. Introduction

1.1. Background

As one of the most emerging and important parts of socially responsible investment and green investment, environmental, social, and governance investment (ESG) is a new indicator for measuring business performance. It does not focus on the financial performance of the corporate, instead, ESG pays more attention to non-financial analysis. It can reveal the potential risks in investment and sustainable development of corporates from three aspects of the environment, social responsibility, and corporate governance, and provide a prominent basis for investment decisions.

The first appearance of the ESG concept can be traced back to 2004 when the United Nations Environment Program defined it as environmental, social, and corporate governance. It no longer takes the traditional financial performance as the evaluation standard, and gradually plays the role of an important investment concept, becoming an important standard to measure the fulfillment degree of social responsibility of listed corporates. Today, due to the improvement of the markets, corporates have increasingly pursued the maximum short-term profits but began to take care of long-term sustainable development. ESG has become an important source of corporate risks, which may affect the corporate's financial performance and profitability.

However, for some corporates, the investments in ESG may also have some bad implications. For example, it may cost some resources that should be used for business activities, which will reduce the profitability of corporates. After all, the pursuit of profit maximization is the ultimate goal of corporates. The reason is that these corporates are currently only to fulfill their social responsibilities, and have not fundamentally recognized the importance of ESG investment, and cannot improve operational efficiency by enhancing the green value of corporates and thus shaping a public image of enthusiastic public welfare undertakings as experienced developed countries do. Therefore, in the field of ESG investment, the concept of each country is not the same, and there is still a big gap.

1.2. Related research

Since the ESG principle was formally put forward, it has been actively practiced in developed countries such as Europe and America and has gradually been widely tested in practice. At present, scholars in various countries are constantly updating their research on this theory.

Scholars generally believe that excellent ESG performance helps to improve the financial performance of corporates. Ahmad et al. estimated the impact of total ESG on corporate financial performance and further tested the effects of three individual dimensions on performance, then conclude that ESG can not only positively affect the market value of the corporate but also earnings per share, which is very significant [1]. Li et al. emphasized the significance of ESG disclosure level, as transparency and accountability can be improved and also enhanced stakeholder trust [2]. Wang and Sarkis also got similar results that how corporates treat CSR governance will ultimately be reflected in corporate financial performance, but attitude alone is not enough. Only by ensuring that the implemented plan achieves the targeted CSR performance results can finally reach the “win-win” outcomes [3]. Some scholars disentangled the ESG Disclosure score into its three sub-components: environmental, social, and governance, and discuss their influence separately. Nollet et al. used linear model and non-linear models to examine the relationship between Corporate Social Performance (CSP) and Corporate Financial Performance (CFP) and concluded that governance is the key driver affecting the CSP-CFP relationship and only long-run planning and considerable resources are dedicated at this direction can CSR pays off [4]. Others interpreted corporate financial performance from two aspects. One is profitability and the other is financial risk. Kim and Li found that a positive effect of ESG factors, especially corporate governance, shows in corporate profitability, especially large-scale corporates, where this impact will be more obvious. In terms of credit risk, environmental score and social factors both have very significant effects on credit rating, especially the environmental score, which shows an amazing negative impact [5].

Another explanation that ESG can promote the financial performance of corporates takes into account the influence of capital constraints. Cheng et al. It is found that corporates with better corporate social responsibility performance will consequently get lower capital constraints. The reason is that better corporate social responsibility performance is often due to higher participation and more comprehensive policies of corporate stakeholders. Moreover, corporates with better corporate social responsibility performance are more likely to be willing to show their actions to the market and publicly disclose their information because of excellent data, thus becoming more transparent and responsible. Therefore, market participants are more willing to allocate scarce capital resources to corporates with better corporate social responsibility at a lower cost [6]. Wong et al. focused on ESG certification and found that such certification can significantly reduce the corporate's cost of capital and significantly increase Tobin's Q. This means pursuing the SRI or ESG agenda is a good thing for corporate stakeholders [7]. Eliwa et al. found that the extent of these impacts of ESG practice varies from country to country, especially for those countries that are stakeholder-oriented. This is because each country's market will have limitations when exploring the free market system, and civil society and the state have extraordinary roles in this process [8].

This view has also been recognized in the behavior of investors. Amel-Zadeh and Serafeim aimed to find out why and how investors use the reported ESG information. They believed that using ESG information to predict investment performance is the most common motivation, and secondly, investors also hope to find information related to customer needs and product strategies. In addition, although the importance of ESG information to investment performance is widely recognized, different countries, industries, and even corporate strategies may require different information in specific applications [9]. Broadstock et al. selected a unique situation, COVID-19 global pandemic, to explore whether investors use the ESG performance of corporates as a signal to predict future stock performance and/or a sign of risk mitigation. Through experiments, they found that ESG performance was positively correlated with short-term cumulative returns. Therefore, ESG, as an indicator of corporates, can be used by investors to judge the stock expectation and avoid the negative risks brought by the market at an appropriate time [10].

1.3. Objective

The purpose of this paper is to explore the impact of ESG on financial performance and provide insights into the essence and significance of ESG. Based on the multiple regression model, I analyzed the data of some corporates in China's A-share market CSI 300 Index for 15-19 years. The results revealed the influence of ESG score and other factors on financial performance and found some shortcomings in the A-share market. Due to the late start of ESG investment research in China, the ESG investment system still needs to be improved. This research provides reference experience for Chinese listed corporates to develop in this era of rapid burgeon and urges them to realize how essential the ESG investment is for those corporates aimed at promoting the long-term value growth, to encourage the better change of corporates in a green and sustainable direction.

The remainder of the paper is structured as follows. Section 2 explains data sources, the standard of sample selection, and model construction. Section 3 shows the results, which are discussed in Section 4. And conclusions and suggestions for the A-share market are illustrated in Section 5.

2. Research Methods

2.1. Data and sample

To test the relationship between ESG and corporate financial performance among China's A-share market, the initial sample comprised all corporates in the constituent list of CSI 300 Index from 2015 to 2019. The data is obtained from CSMAR, which provides information about corporates; and SynTao Green Finance, which scores these corporates according to their ESG performance. To be able to perform the analysis, these firms should have data available for ESG score, Tobin's Q, firm size, listing age, leverage ratio, independent director ratio, and the shareholding ratio of the largest shareholder. Those sample corporates with incomplete financial data or ESG data and those with abnormal data should be removed. In addition, to avoid results being affected and disturbed by the data not being mature enough, those sample corporates whose ESG information is less than three years are excluded. As they have just invested in this area for a short period, they may still need to adjust their ESG investment strategy due to lack of experience. The final sample contains 495 firm-year observations representing 116 individual firms between 2015 and 2019.

2.2. Regression variables

2.2.1. Dependent variable

The dependent variable of this study is represented by Tobin's Q, which is taken from CSMAR China listed corporate financial index analysis database. Tobin's Q is the ratio of the stock market value of a corporate to the total replacement assets of the corporate. The calculation of stock value is: A shares * current closing price of A shares+ domestic listed foreign shares B shares * current closing price, and the total replacement assets are equal to total assets here. This ratio reflects the investors' expectation of the future profit of the corporate by estimating the comprehensive capabilities in the future, such as operation and profitability, and is a measure of the market value of the corporate.

2.2.2. Independent variable

The independent variable of this study is represented by the ESG score(ESG) developed by SynTao Green Finance with the actual situation of the A-share market. Their ESG scoring system consists of three levels of indicators. The first-level indicators are three dimensions: environment, society, and corporate governance. The secondary indicators are 13 classified issues under these three dimensions, such as environmental targets, environmental management, environmental disclosure. The third-level indicators will cover specific ESG indicators, with more than 200 third-level indicators from more than 1,000 data points. In the ESG scoring system, each index will be given different weights according to different industries according to the importance and influence degree of different indexes to corporates. The system will finally calculate the overall ESG performance score of a corporate by weighting. And this score is the independent variable here.

2.2.2. Control variables

To increase the goodness of the regression model, a set of control variables is introduced to limit the factors capable of significantly influencing financial performance. Based on previous theoretical and empirical studies, the following control variables are included: firm size (SIZE), listing age (AGE), leverage ratio (LEV), independent director ratio (DIR), and largest shareholder ratio (LSR). All variables are retrieved from the CSMAR database.

Concerning the first control variable, to reduce the impact of the deviation of corporates with extreme sizes, firm size (SIZE) is used as the natural logarithm of the total assets. Generally speaking, the larger an enterprise is, the more assets it can use for daily operations, investment, and other activities, and the stronger ESG investment awareness it often has. Increasing ESG investment will help these corporates to further enhance their popularity in the industry and beautify their image in the public mind. The attitude conveyed by such behavior of corporates may further steadily improve their economic benefits.

The second control variable is listing age (AGE). Corporates pay different attention to indicators in different life cycle stages. Therefore, taking the corporate's age as the control variable is beneficial to adjust the impact of ESG investment on the financial performance of corporates at different stages.

Following the common practices, leverage ratio (LEV) is another control variable, which divides assets by liabilities. Previous studies indicate that a higher leverage ratio might lead to higher financial risk, and then result in worse financial performance. On the contrary, those corporates with a low leverage ratio may have more funds to invest in ESG, which may further have a positive impact on the financial performance of corporates.

Moreover, this paper includes the independent director ratio (DIR), calculated as the ratio between the number of independent directors and board size. Independent directors are not influenced by shareholders and other members of the corporate, which helps to promote the fairness and objectivity of the board's business decisions, and can better supervise and restrain the daily behavior of the corporate's management, fundamentally promote the corporate's decision-making level when facing problems, and ultimately achieve the improvement of corporate performance.

The largest shareholder ratio (LSR) is the last control variable, which indicates the share of the largest shareholder in the total share capital. Higher largest shareholder ratio can make major shareholders have enough motivation to increase supervision and restraint on the management of the corporate, reduce agency costs and information asymmetry, and thus contribute to the improvement of corporate performance.

2.3. Model specification

The article tests the following regression model, between corporate financial performance and the ESG score and a set of control variables:

$$\text{Tobin's } Q_{i,t} = \beta_0 + \beta_1 \text{ESG}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{AGE}_{i,t} + \beta_4 \text{LEV}_{i,t} + \beta_5 \text{DIR}_{i,t} + \beta_6 \text{LSR}_{i,t} + \varepsilon_{i,t} \quad (1)$$

3. Results

3.1. Correlation analysis

Table 1 reports the correlation matrix among the primary variables. Although the highest value is equal to 0.6297 (reported between SIZE and LEV), it is still below the harmful levels of multicollinearity, so all variables are appropriate. The table indicates that there is no significant correlation between Tobin's Q and ESG score, instead, Tobin's Q is negatively correlated with both SIZE and LEV. It is also negatively correlated with other variables, but not as significant as the two variables mentioned earlier.

3.2. Multivariate analysis

Table 2 summarizes the results of the regression between ESG score and Tobin's Q. R-squared is 35.34% and adjusted R-squared is 34.55%, so the result has a good degree of explanation. And F-statistic of this model is 44.37 and its corresponding p-value is far less than 0.05. This means that the regression equation meets the analysis conditions, and the linear regression analysis model can be used to explain the relationship between ESG and financial performance.

According to Table 2, the p-values of SIZE and LEV are both 0.0000 and less than 0.05. Therefore, the control variables SIZE and LEV passed the significance test, which is similar to the result discovered in the correlation analysis. The regression coefficients of corporate SIZE, leverage ratio LEV, and financial performance Tobin's Q are respectively -0.6688 and -2.3822, both of which are less than zero. It is concluded that corporate size, leverage ratio, and financial performance are negatively correlated.

About the independent variable ESG, the p-value of which is 0.3051, this means that ESG failed the significance test and cannot be regarded as a factor affecting Tobin's Q.

Table 1. Pearson correlations between Tobin's Q, ESG score, and control variables

	Tobin's Q	ESG	SIZE	AGE	LEV	DIR	LSR
Tobin's Q	1.0000						
ESG	-0.1515	1.0000					
SIZE	-0.5632	0.2355	1.0000				
AGE	-0.1033	0.0807	0.0179	1.0000			
LEV	-0.4771	0.0439	0.6297	0.0646	1.0000		
DIR	-0.0788	0.0969	0.2530	-0.1425	0.1685	1.0000	
LSR	-0.1797	0.1260	0.4136	-0.2503	0.0784	0.1722	1.0000

Table 2. Regression analysis

Variable	Coefficient	Std. Error	t-Statistic	p-value
Constant	20.4223	1.7735	11.515	0.0000
ESG	-0.0142	0.0138	-1.027	0.3051
SIZE	-0.6688	0.0851	-7.855	0.0000
AGE	-0.0265	0.0142	-1.871	0.0619
LEV	-2.3822	0.5661	-4.208	0.0000
DIR	1.8314	1.1504	1.592	0.1120
LSR	-0.0009	0.0056	-0.165	0.8691
R-squared	0.3534	F-statistic	44.37	
Adjusted R-squared	0.3455	Prob(F-statistic)	0.00	

4. Discussions

4.1. Independent variable

To date, study at the worldwide scale on the relationship between ESG and financial performance has attracted considerable interest and explored numerous conclusions. Originally, the research on ESG was mainly concentrated in western developed countries. In recent years, with the Chinese government's constant focus on the environment and the encouragement of relevant policies, scholars gradually began to pay more attention to ESG development under the background of China. This article also provides insights into the impact of ESG, but the empirical results did not indicate that ESG scores can have an impact on corporate financial performance, which is quite different from the research conclusion of western countries. This finding could occur because of several reasons.

The most likely reason for differing from those reported in the related research is the different stages of development of the capital market. Most of the previous studies were carried out under the background of developed countries, whose capital markets have been developed for two centuries or

even longer, and have formed a relatively complete system. The purpose of these markets is not only to create wealth, but they can also pay more attention to things outside the economy, such as the environment, society, and corporate governance. They can dedicate their efforts to ESG, which makes them more charming and attract the attention of people who think social responsibility and green economy are very important, leading to lower cost of capital or other benefits. But this cannot be generalized to the Chinese capital market deal to the different stages of ESG maturity. Chinese capital market has been developing for a short time since the 1990s, and still needs further improvement in the aspects of supervision system and government intervention. In addition to economic development, the government is gradually paying more attention to environmental issues, but it has not yet formed a wide-ranging influence among all corporates. Managers and investors do not admit and value such social issues and their understanding of ESG is not perfect enough. They view ESG as an expense that takes up corporate resources, rather than an investment that contributes to future development.

Another possible reason is that the impact of ESG investment cannot be immediately converted into revenue, instead, it is lagging behind that of financial performance, which usually takes effect in the following years. Although this article selects corporates whose ESG data has been disclosed for more than three years, this period may still be too short for ESG investment to be reflected in financial performance. When making high investments in ESG, to a certain extent, corporate may sacrifice their cash flow and the operating cost may be increased in the current year, while the investment in ESG is a long-term return process, which may not immediately improve the current economic performance or may even reduce the performance due to occupying funds and resources. Therefore, corporate' investment in ESG should be determined according to their current operating conditions and let ESG promote the gradual growth of financial performance.

4.2. Control variables

According to the empirical results, only firm size and leverage ratio can influence Tobin's Q negatively. As Tobin's Q is the ratio of the corporate's market value to its asset replacement cost, those with smaller size may have better room for growth and then have better output under the unit input. For large-scale corporates, it may be necessary for firm-year capital to maintain existing assets, thus increasing operating costs and leading to a decline in performance. As for leverage ratio, corporates with a low leverage ratio may be more flexible in asset allocation and use, which will further improve Tobin's Q. Moreover, corporates with a low leverage ratio may have advantages in other aspects, such as lower financing costs, which will also positively affect Tobin's Q.

5. Conclusion And Suggestion

This study explores how the investment in ESG impacts the financial performance of corporate in the context of China through a regression model. The findings obtained show that there is no obvious relationship between them, which is distinct from previous research focused on western developed countries. The interpretation of the results may be the different development stages of the capital market and lag of ESG influence, and this suggests a development direction to the Chinese market. As this article analyses the latest data of the Chinese market, it, therefore, contributes to the creation of new knowledge in the literature strand on the relationship between ESG and financial performance. The results obtained provide a basis for the state to take measures to better mobilize corporates' attention and actions for the environment. The responsibility of corporates for the environment is far from enough now for corporates to take on more ESG responsibilities better, certain measures must be taken to arouse the enthusiasm of corporates so that corporates can benefit from their social image and their vital interests and be willing to take on their responsibilities. However, when implementing the active environmental protection policy, we should timely measure the marginal cost and marginal benefit of environmental protection investment, so as not to affect the normal business activities of corporates.

The results obtained also have important managerial implications. Managers and CEOs should recognize financial performance as not only the core objectives of corporate management but also the

contributions to be made to social issues. By deploying more efforts and devoting relevant resources towards long-lasting ESG investments, corporates can address the expectations of internal and external stakeholders and gain public trust. Thus their competitive power can be enhanced and it consequently promotes their long-term financial performance.

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