

Corporate ESG Performance and Stock Liquidity

1. Introduction

In recent years, with growing environmental awareness, ESG is receiving more attention and being built into strategic planning by more and more companies. ESG is composed of three factors: environment, society and governance. This means considering the impact of business and investment activities on the environment and society, as well as the strength of corporate governance – factors that represent the non-financial performance of a company (Atan, Alam, Said, & Zamri, 2018). According to 2018 data, global ESG assets under management reached \$30.7 trillion, accounting for 30% of total global assets under management. The proportion keeps rising steadily.

Regarding ESG information disclosure, at present, there are relevant guidelines proposed by international organizations, such as the UN Principles for Responsible Investment (UNPRI) for the ESG information disclosure of companies, and ESG information disclosure of listed companies issued by the United Nations Sustainable Stock Exchange (UN SSE) in 2015 for voluntary adoption by exchanges. In addition, there are also measures for mandatory information disclosure issued by exchanges, such as the ESG Report Guidelines issued by the Hong Kong Stock Exchange in December 2015.

Corporate incentives to disclose ESG information are greatly affected by disclosure criteria (Lokuwaduge & Heenetigala, 2017). Therefore, developing mandatory ESG disclosure guidelines is crucial in promoting ESG and sustainable development.

With great international interest in ESG investment, a large number of empirical and theoretical studies have been carried out on ESG. In particular, the relationship between corporate ESG performance and financial performance has been widely studied, but the findings remain mixed (Atan et al., 2018; Barnett & Salomon, 2012; Brammer, Brooks, & Pavelin, 2006; Branco & Rodrigues, 2008; Duque-Grisales & Aguilera-Caracuel, 2019; Friede, Busch, & Bassen, 2015; D. D. Lee, Faff, & Langfield-Smith, 2009; K.-H. Lee, Cin, & Lee, 2016; Lo & Sheu, 2007; McWilliams & Siegel, 2000; Nollet, Filis, & Mitrocostas, 2016; Qiu, Shaukat, & Tharyan, 2016). Some studies have found that there is a negative correlation between corporate ESG performance and financial performance. For example: Brammer et al. (2006) find that there is a negative correlation between a company's comprehensive social performance indicator score and share returns. D. D. Lee et al. (2009) find that

there is a negative correlation between corporate social responsibility performance and market performance. Duque-Grisales and Aguilera-Caracuel (2019) use a sample of 104 transnational companies in Latin America and use panel data to study the relationship between corporate ESG score and financial performance. The study finds that there is a significant negative correlation between two variables. However, more studies have found that there is a positive correlation between corporate ESG performance and financial performance. Friede et al. (2015) compile data of more than 2200 studies on the correlation between ESG performance and financial performance since the 1970s, and find that 90% of studies find a non-negative relationship between ESG performance and financial performance. Based on indicators such as return on assets and rate of capital return, Nollet et al. (2016) study the relationship between corporate social performance (CSP) and corporate financial performance (CFP) by using a nonlinear model and find that there is a U-shaped relationship among corporate social performance, return on assets and rate of capital return, implying that excellent corporate social responsibility performance can improve financial performance in the long term.

K.-H. Lee et al. (2016) use a sample of South Korean companies from 2011 to 2012 and use the least square method and two stage least square method to study the relationship between corporate environmental responsibility performance and financial performance. It is found that there is a significant positive correlation between corporate environmental responsibility performance, return on stockholder's equity and return on assets. Similarly, Barnett and Salomon (2012) also find that companies that have excellent corporate social responsibility performance usually perform better financially.

When making investment decisions, socially responsible investors weigh social or moral objectives more compared to economic benefits (Renneboog, Ter Horst, & Zhang, 2008). However, ESG investment is not merely "emotional" investment. Companies with excellent ESG performance usually have high financial performance (Barnett & Salomon, 2012), good credit quality (Chang, Yan, & Chou, 2013), and strong risk resistance capacity (Lins, Servaes, & Tamayo, 2017).

A review of the literature finds that excellent ESG performance can enhance corporate value. Cheng, Ioannou, and Serafeim (2014) find that the better corporate social responsibility performance, the lower the capital constraint, thus promoting growth capability and enhancing value by increasing research inputs and other effective measures. Liu and Zhang (2017) take a sample of heavy-polluting listed Chinese companies and study the relationship between corporate governance, social responsibility information disclosure and corporate value. It is found that higher levels of corporate governance promote corporate social responsibility information disclosure, while

social responsibility information disclosure is beneficial to the long-term value enhancement of an enterprise. Crifo, Forget, and Teyssier (2015) use field experiments to quantify the impact of corporate ESG practice disclosure on the value of non-listed companies. They find that excellent ESG practice enhances corporate value, while negative ESG performance reduces corporate value and investors' willingness to invest. Barko, Cremers, and Renneboog (2018) come to a similar conclusion, namely that investors such as hedge funds and pension funds prefer to invest in companies with better ESG performance. Nollet et al. (2016) find that enterprises which build social responsibility into strategy can increase consumers' willingness to buy and investors' willingness to invest, thus creating extra value for its products.

ESG performance can also increase a company's market value. Masulis, Wang, and Xie (2007) find that companies with poor environmental performance and poor corporate governance are more likely to make poor decisions in acquisitions, thus reducing their market value. Qiu et al. (2016) find that the higher the degree of CSR information disclosure, the higher the market value of a company, with the positive correlation driven by a higher expected cash flow growth rate. Miralles-Quirós, Miralles-Quirós, and Gonçalves (2018) study environmental, social and corporate governance factors and find that strong ESG performance can increase enterprise market value. Specifically, the market will have a positive and significant response to positive environmental events disclosed by enterprises in non-environmentally sensitive sectors, and have a positive and significant response to social responsibility and corporate governance-related events disclosed by enterprises in environmentally-sensitive sectors.

Lo and Sheu (2007) study large non-financial enterprises in the United States from 1999 to 2002, exploring whether corporate sustainability impacts market value. They find that a significant positive correlation between these two variables, indicating that companies with clear sustainable development strategies are likely to obtain higher valuations by investors in financial markets.

The third benefit of good ESG performance is to increase enterprise economic benefits. Ferrero-Ferrero, Fernández-Izquierdo, and Muñoz-Torres (2016) take 15 listed companies in Europe from 2002 to 2011 as their sample, finding that excellent ESG performance is an intangible asset that can boost economic benefits to a company. Similarly, Sila and Cek (2017) also find that excellent CSR performance can help improve a firm's economic efficiency.

While many studies examine the relationship between corporate ESG performance and financial performance, there are few studies on the relationship between a company's ESG performance and its stock liquidity. Stock liquidity, which indicates the ability to turn assets into cash quickly, is crucial

in the market (Schwartz, 1988) (Amihud & Mendelson, 1988). Therefore, this paper aims to fill this gap and provide an empirical study on the relationship between ESG performance of listed companies in China and their stock liquidity.

2 Theory and Research Hypothesis

2.1 Theory

According to the literature review, we find that good ESG performance helps to enhance enterprise value (Barko et al., 2018; Cheng et al., 2014; Crifo et al., 2015; Liu & Zhang, 2017; Nollet et al., 2016), market value (Lo & Sheu, 2007; Masulis et al., 2007; Miralles-Quirós et al., 2018; Qiu et al., 2016), and economic benefits (Ferrero-Ferrero et al., 2016; Sila & Cek, 2017). Further, we will explore and analyze the two potential transmission mechanisms – “corporate value” and “investor attention”. To be specific, through the “corporate value” channel, good ESG performance can enhance the intrinsic value of a company and build trust between the enterprise and investors. In particular, when risks emerge, companies with good ESG performance are better able to withstand risks and survive in the long run. Therefore, investors, especially socially-responsible investors, are more willing to hold their shares for a long time to reduce investment risks and increase investment value.

Another linkage is the “investor attention” channel. When a company discloses information covering aspects such as issuing green bonds, poverty alleviation, and employee training, it will increase media exposure, leading to an increase in company visibility and investor attention, thereby attracting (socially responsible) investors to buy the company’s shares.

2.2 Research Hypothesis

Good ESG performance is associated with higher financial performance (Barnett & Salomon, 2012), better credit level (Chang et al., 2013), and stronger risk resistance capacity (Lins et al., 2017). In addition, strong ESG performance indicates a company is committed to sustainable development and capable of long-term survival (Tang & Zhang, 2018). According to the “corporate value” channel, investors should hold the stock of companies with better ESG performance for longer, reducing stock liquidity. Therefore, we raise the hypothesis I (a): There is a negative correlation between a company’s ESG performance and stock liquidity.

In contrast, according to “investor attention” channel, good corporate ESG performance (e.g. issuing green bonds) will improve corporate transparency, attract investors’ attention and broaden the investor base (Tang & Zhang, 2018), thereby increasing stock liquidity. Therefore, we raise the hypothesis I (b): There is a positive correlation between a company’s ESG performance and stock liquidity.

3. Sample and Data

This paper studies companies listed on the CSI 300 index from January 2016 to June 2019. Non-equilibrium panel data was created every six months for the time duration, giving 2,100 observations in total. Among these, the ESG score of listed companies comes from the IIGF ESG Database. Market data (including share returns, closing price, market value, industry, ownership, etc.) came from the CSMAR database.

3.1 Corporate ESG Performance

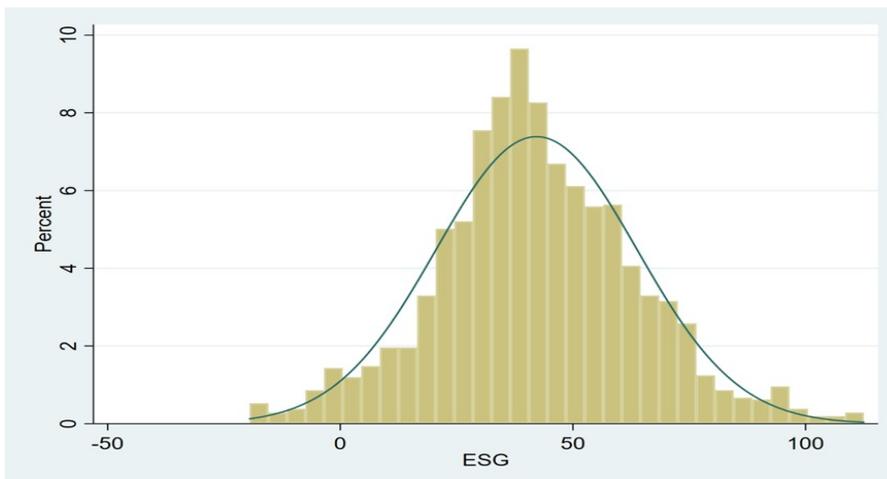
In this paper, the ESG score represents corporate ESG performance. The higher the score, the better the ESG performance.

Table 1: ESG scores of companies in CSI 300 index from January 2016 to June 2019

Variable	(1) No.	(2) Mean	(3) Std	(4) Min	(5) P25	(6) Median	(7) P75	(8) Max
ESG	2093	42.1832	21.6002	-19.4826	29.3431	40.7454	55.7950	111.6184
2016.0106	298	42.0590	21.5247	-18.8250	29.4252	41.0581	56.6898	103.6703
2016.07~12	299	43.7960	20.8354	-19.0190	30.8473	42.5267	57.9101	103.8095
2017.01~06	299	42.9098	20.2398	-17.2894	31.5720	40.9215	54.2455	111.6184
2017.07~12	299	42.0325	21.1406	-17.1167	30.1509	40.7628	54.4261	111.1586
2018.01~06	298	41.1102	22.1468	-19.4826	26.6326	40.6859	55.0711	109.0526
2018.07~12	300	41.3337	21.6041	-18.1991	27.5075	40.7505	54.6192	109.4582
2019.01~06	300	42.0405	23.6399	-17.4647	25.8789	38.2736	56.7545	109.0572

From the table above, we can see that the ESG score of listed companies varies little over time, but the ESG performance level of different companies varies considerably: The highest ESG score recorded is 111.62 points, which is 69.44 points higher than the average. Due to various negative behaviors and risks, the lowest ESG score recorded is -19.48 points, which is 61.67 points lower than the average score.

Figure 1: histogram of ESG scores of companies in CSI 300 index from 2016.01 to 2019.06



In addition, as can be seen from the above figure, CSI300 listed companies scoring from 38 to 42 points account for the largest proportion (nearly 10%), followed by listed companies scoring between 34 and 38 points and between 42 and 44 points, both of which account for more than 8%. Nearly 70% of listed companies scored between 20 and 60 points.

3.2 Stock Liquidity

This paper adopts the Amihud (2002) method, which is widely used, to calculate stock liquidity. Amihud is the illiquidity indicator, that is, the higher the calculated value, the lower the stock liquidity. The specific formula is as follows:

$$ILLIQ_{iy} = 10^8 * 1/D_{iy} \sum_{t=1}^{D_{iy}} |R_{iyd}|/VOLD_{iyd}$$

Where D_{iy} represents the effective transaction days of stock i in the period y . R_{iyd} represents the daily return rate of cash dividend reinvestment of stock i considered on day d in period y . $VOLD_{iyd}$ represents the daily transaction volume of the

Table 2: stock liquidity of companies in CSI 300 index from January 2016 to June 2019

Variable	(1) No.	(2) Mean	(3) Std	(4) Min	(5) P25	(6) Median	(7) P75	(8) Max
Amihud	2093	0.0106	0.0573	0.0003	0.0030	0.0052	0.0092	1.8177
2016.01~06	298	0.0091	0.0074	0.0006	0.0043	0.0070	0.0119	0.0666
2016.07~12	299	0.0045	0.0031	0.0004	0.0025	0.0040	0.0059	0.0295
2017.01~06	299	0.0167	0.1243	0.0003	0.0026	0.0041	0.0067	1.8177
2017.07~12	299	0.0081	0.0480	0.0003	0.0023	0.0040	0.0071	0.8309
2018.01~06	298	0.0132	0.0579	0.0003	0.0029	0.0060	0.0096	0.8832
2018.07~12	300	0.0141	0.0359	0.0004	0.0046	0.0094	0.0158	0.5977
2019.01~06	300	0.0085	0.0227	0.0003	0.0031	0.0053	0.0091	0.3760

stock i on the day d in the period y (Unit: RMB millions).

It can be seen from Table 2 that the stock liquidity of CSI300 constituent stocks exhibits great differences in different time periods. From the perspective of mean value, stock liquidity is low in the first half of 2017 and in 2018, and high in the second half of 2016. Regarding the degree of dispersion, there is a greater dispersion of stock liquidity among listed companies in the first half of 2017, and a smaller dispersion in 2016.

4. Correlation between ESG and Stock Liquidity

The "corporate value" channel means that investors should hold corporate stocks with better ESG performance for longer, thus reducing their liquidity.

Therefore, a negative correlation would be expected between a company's ESG performance and stock liquidity. The "investor attention" channel predicts that companies with excellent ESG performance will attract investors' attention, thus increasing their stock liquidity. Therefore, a positive correlation would be expected between ESG performance and stock liquidity.

Next, using the sample of CSI index companies from January 2016 to June 2019, we explore the empirical relationship between a company's ESG score and its stock liquidity to identify which channel has a more prominent market effect in China.

4.1 Variables and Models

(1) Variables

Dependent variable: This paper adopts stock liquidity as calculated by the Amihud method as the dependent variable. Amihud is an illiquidity index, which is highly skewed. Therefore, we take the negative logarithm value of the index in order to reflect the stock liquidity more intuitively.

Independent variable: The ESG score of each listed company is taken as the independent variable. Because the ESG score is obtained qualitatively and quantitatively from the three dimensions of environmental protection, social responsibility and corporate governance, the ESG development level of enterprises can be comprehensively measured.

Control variable: We also select stock price, stock price volatility etc. as control variables. See Table 3 below for details:

Table 3: Variable Summary

Variable	Definition	Symbol	Explanation
Dependent Variable	Stock liquidity of listed companies	<i>Liquidity</i>	$-\log [10^8 * 1/D_{iy} \sum_{t=1}^{D_{iy}} R_{iyt} /VOLD_{iyt}]$
Independent Variable	ESG scores of listed companies	<i>ESG</i>	
Control Variables	Stock price	<i>Price</i>	$1/D_{iy} \sum_{t=1}^{D_{iy}} price_{iyt}$
	Stock price volatility	<i>Volatility</i>	$\sqrt{1/D_{iy} \sum_{t=1}^{D_{iy}} (return_{iyt} - \overline{return}_i)^2}$

(2) Regression Model

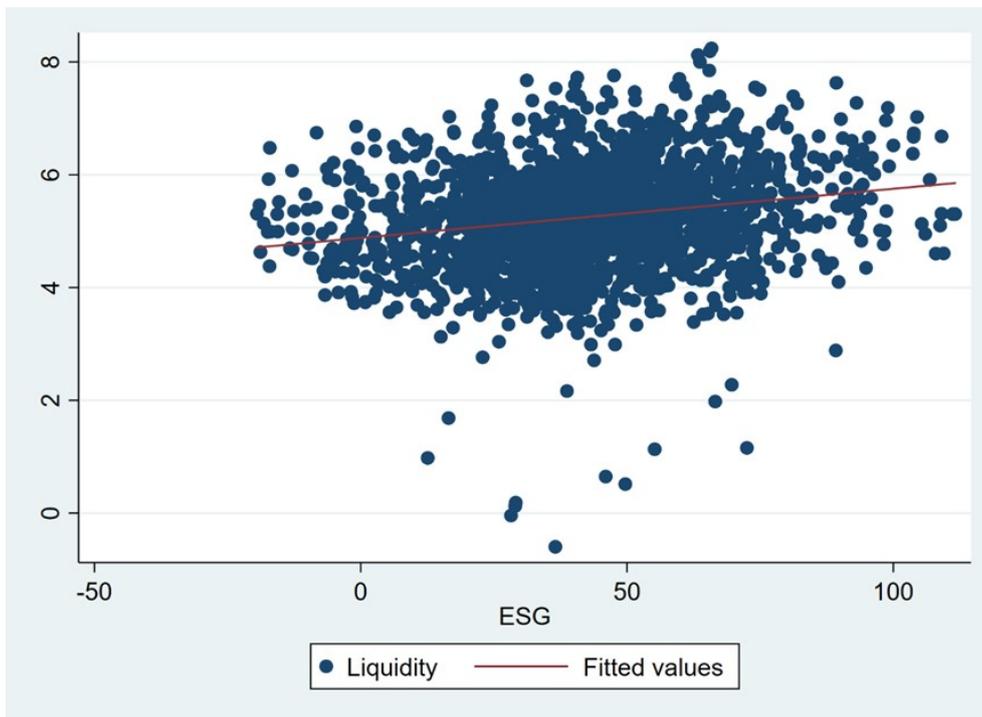
In order to study the influence of ESG level on stock liquidity, this paper takes every half year as the time dimension and establishes a fixed effect panel data model. The specific expression is as follows:

$$Liquidity_{it} = \alpha + \beta ESG_{it} + \gamma Price_{it} + \delta Volatility_{it} + FE + \varepsilon_{it}$$

4.2 Empirical Result Analysis of ESG and Stock Liquidity

First of all, the scatter diagram (Figure 2) indicates there is indeed a quantitative correlation between ESG and stock liquidity. As the ESG score of a company increases, its stock liquidity also tends to increase, showing a positive correlation. This seems to show that the "investor attention" channel plays a dominant role regarding market reaction to a company fulfilling its social responsibilities.

Figure 2: Scatter diagram of ESG and stock liquidity



In addition, it can also be seen from the following correlation coefficient matrix (Table 4) that there is a positive correlation between the ESG level of a company and its stock liquidity under the circumstance of no influence from other factors, and that there is no high correlation between the independent variables. This indicates that there are no serious multicollinearity problems in this regression model.

Table 4: correlation coefficient matrix

	Liquidity	ESG	Price	Volatility
Liquidity	1			
ESG	0.206***	1		
Price	0.152***	0.00500	1	
Volatility	-0.218***	-0.053**	0.064***	1

. Regression analysis is carried out using the fixed effect panel data model, as shown in Table 5 below. Column (1) only controls the individual fixed ef-

fect and does not add control variables. On the basis of column (1), column (2) considers the heteroscedasticity and serial correlation, and calculates the standard error of clustering adjustment at the enterprise level. On the basis of column (1) and column (2), column (3) and column (4) add the time fixed effect, respectively. Column (5) and column (6) both add the control variables and take into account heteroscedasticity and serial correlation. The difference is that column (5) only controls the individual fixed effect, whereas column (6) controls both the individual and time fixed effect.

From the regression result, we can see that there is a significant positive correlation between ESG performance and stock liquidity. When only controlling the individual fixed effect, an ESG increase of one point will increase stock liquidity by 0.3%. When both individual fixed effect and time fixed effect are controlled simultaneously, an ESG increase of one point will increase stock liquidity by 0.2%. This indicates that the "investor attention" channel plays a dominant role in how the market reacts to a company fulfilling its social responsibilities, that is, a company's excellent ESG performance will attract the attention of investors, thereby expanding the investor base and increasing stock liquidity.

Table 5: baseline results

	Individual fix effect		Two-way fix effect		Individual fix effect	Two-way fix effect
	(1)	(2)	(3)	(4)	(5)	(6)
ESG	0.003***	0.003**	0.002***	0.002**	0.003**	0.002**
	(2.78)	(2.45)	(2.62)	(2.49)	(2.41)	(2.29)
Price					0.007*	0.006**
					(1.82)	(2.09)
Volatility					-11.287*	-2.590
					(-1.67)	(-0.86)
_cons	5.118***	5.118***	4.863***	4.863***	5.227***	4.834***
	(106.27)	(96.71)	(98.30)	(95.09)	(29.62)	(40.47)
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	YES	YES	NO	YES
N	2093	2093	2093	2093	2092	2092
R2	0.005	0.005	0.295	0.295	0.085	0.321

* p<0.1, ** p<0.05, *** p<0.01

4.3 Relation Analysis of ESG and Stock Liquidity in Companies with Different Ownership Attributes

We sought to explore whether the effect of the "investor attention" channel varies among companies with different forms of ownership. In particular, is it

primarily state-owned enterprises or non-state-owned enterprises driving the positive impact of corporate ESG performance on stock liquidity? To do this, we introduce an interaction term for company ownership to carry out the regression analysis. The specific expression is as follows:

$$Liquidity_{it} = \alpha + \beta ESG_{it} + \gamma ESG_{it} * SOE_i + \delta control\ variables_{it} + FE + \varepsilon_{it}$$

Where "SOE" is the dummy variable, that is: if it is a state-owned enterprise, then SOE=1. If it is a non-state-owned enterprise, then SOE=0.

Table 6: Results of the relationship between ESG and stock liquidity among companies with different ownership

	(1)	(2)	(3)	(4)
ESG	0.000 (-0.09)	0.000 (-0.08)	-0.002 (-1.03)	-0.002 (-1.00)
ESG*SOE	0.005** (2.30)	0.005** (2.03)	0.005*** (2.74)	0.005*** (2.63)
Size			1.436*** (25.08)	1.436*** (18.74)
Price			-0.002** (-2.11)	-0.002* (-1.75)
_cons	5.131*** (105.97)	5.131*** (96.65)	-10.418*** (-16.90)	-10.418*** (-12.62)
Firm FE	YES	YES	YES	YES
N	2093	2093	2093	2093
R2	0.008	0.008	0.304	0.304

* p<0.1, ** p<0.05, *** p<0.01

In Table 6, column (1) is the regression result of the fixed effect model. Column (2) is the regression result of the fixed effect model that considers heteroscedasticity and serial correlation, and columns (3) and (4) add control variables on the basis of column (1) and (2). From the regression result, it can be seen that for non-state-owned enterprises, corporate ESG performance has no significant impact on stock liquidity. But for state-owned enterprises, there is a significant positive correlation between corporate ESG performance and stock liquidity, with stock liquidity increasing by 0.5% for an ESG increase of one point. Therefore, the "investor attention" channel is mainly reflected through state-owned enterprises, that is, the significant positive impact of ESG performance on stock liquidity is mainly caused by state-owned enterprises.

4.4 Relation Analysis of ESG and Stock Liquidity in different industries

Next, this paper introduces an interaction item for industry attribute to further explore whether the impact of the "investor attention" channel varies

between industrial and non-industrial companies. The specific expression is as follows:

$$Liquidity_{it} = \alpha + \beta ESG_{it} + \gamma ESG_{it} * Industry_i + \delta control\ variables_{it} + FE + \varepsilon_{it}$$

Where industry is the dummy variable, that is: if the company is an industrial enterprise, the value is 1. If not, the value is 0.

Table 7: Results of relationship between ESG and stock liquidity in different industries

	(1)	(2)	(3)	(4)
ESG	0.006*** (3.52)	0.006*** (2.85)	0.005*** (3.55)	0.005*** (2.80)
ESG*Industry	-0.005** (-2.20)	-0.005* (-1.92)	-0.005** (-2.29)	-0.005* (-1.96)
Price			0.007*** (8.16)	0.007* (1.85)
Volatility			-11.263*** (-9.27)	-11.263* (-1.69)
_cons	5.099*** (104.20)	5.099*** (91.72)	5.207*** (93.07)	5.207*** (29.46)
Firm FE	YES	YES	YES	YES
N	2093	2093	2092	2092
R2	0.008	0.008	0.087	0.087

* p<0.1, ** p<0.05, *** p<0.01

In Table 7, column (1) is the regression result of the fixed effect model. Column (2) is the regression result of fixed effect model that considers heteroscedasticity and serial correlation, and column (3) and (4) add the control variables on the basis of column (1) and (2). From the regression result, it can be seen that compared to non-industrial companies, the ESG performance of an industrial company has a weak influence on its stock liquidity.

As industrial enterprises are mostly enterprises in environmentally-sensitive sectors, a high ESG score means that the company is committed to sustainable development, which highlights their superior risk resistance capability (Lins et al., 2017) and long-term survival ability (Tang & Zhang, 2018). Therefore, more investors will choose to hold stocks in such companies and the "corporate value" channel offsets some of the "investor attention" channel, which weakens the effect of industrial ESG performance on stock liquidity.

4.5 Robustness Test

In order to eliminate the result bias caused by the selection of the stock liquidity index, we replace the Amihud liquidity index to the Turnover rate

and Roll liquidity index to carry out the regression analysis again. The turnover rate refers to the transaction frequency of stock turnover in the market within a certain period of time. The greater the turnover rate, the higher the stock liquidity. This paper calculates the turnover rate index using two methods: The first is turnover rate=trading volume/total issued stocks and the other is turnover rate=trading volume/total outstanding stocks. Due to highly skewed nature of the liquidity index value, we take the logarithm of the index value to conduct the regression analysis.

The Roll liquidity index is proposed by Roll (1984), with the bid-ask spread calculated by the series correlation coefficient of stock price change. The larger the Roll liquidity index, the greater the bid-ask spread and the lower the stock liquidity. Based on the daily return rate considering cash dividend reinvestment in the CSMAR database, this paper calculates the semi-annual Roll index of the individual stock, with the formula as follows:

$$\text{Roll} = \begin{cases} 2\sqrt{-\text{cov}(\Delta P_t, \Delta P_{t-1})} & \text{cov}(\Delta P_t, \Delta P_{t-1}) < 0 \\ 0 & \text{cov}(\Delta P_t, \Delta P_{t-1}) \gg 0 \end{cases}$$

P_t refers the daily return of a stock considering cash dividend reinvestment in the t period. $\text{cov}(\Delta P_t, \Delta P_{t-1})$ is the covariance of its first difference sequence. Those with effective transaction days less than four days within half a year are not included in the calculation. In the same way, because the index value is highly skewed and it is an illiquidity index, in order to reflect the stock liquidity more intuitively in the regression analysis, we take the negative logarithm value of the index.

Table 8: Results of the relationship between ESG and turnover rate/Roll liquidity index

	turnover rate (trading volume/total outstanding stocks) (1)	turnover rate (trading volume/ total issued stocks) (2)	Roll liquidity index (3)
ESG	0.002** (2.01)	0.002** (1.98)	0.001** (2.33)
Price	0.003 (1.52)	0.002* (1.85)	-0.001* (-1.93)
Volatility	17.531** (2.05)	17.412** (2.06)	-20.919** (-2.11)
_cons	-0.774*** (-3.86)	-1.051*** (-5.40)	3.628*** (16.35)
Firm FE	YES	YES	YES
N	2092	2092	2092
R2	0.164	0.185	0.404

* p<0.1, ** p<0.05, *** p<0.01

Columns (1), (2) and (3) of Table 8 shows the regression results of the fixed effect model by using turnover rate and Roll liquidity index as stock liquidity index under the circumstance of considering heteroscedasticity and serial correlation, respectively. We find that after replacing the Amihud index to the turnover rate and Roll index, the result remains consistent, that is, there is a significant positive correlation between corporate ESG performance and stock liquidity, which supports the "investor attention" channel hypothesis.

5 Conclusion

Through the empirical research and analysis above, we find that there is a significant positive correlation between corporate ESG performance and stock liquidity, indicating that the "investor attention" channel plays a dominant role in market reaction to a company fulfilling its social responsibilities. That is, a company's excellent ESG performance will attract the attention of investors, expand the investor base and increase stock liquidity. Moreover, the "investor attention" channel is mainly reflected by state-owned enterprises. In addition, we also find that the ESG performance has a weaker impact on stock liquidity for industrial enterprises compared with non-industrial enterprises.

6. References

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