

An Analysis of the Influence of ESG Rating Divergence on Investor Sentiment

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ABSTRACT

The global financial markets have experienced a significant development with the emergence of the notions of "sustainable development" and "green investing". This development involves the integration of Environmental, Social, and Governance (ESG) information into investment decisions. A significant advancement in the worldwide financial market is the integration of ESG (Environmental, Social, and Governance) data into investing choices. ESG ratings have emerged as a significant benchmark for investors in this scenario. However, there is now a considerable disparity in the rating outcomes provided by various rating agencies for particular companies. This disparity distorts the ratings and thus triggers exaggerated reactions from investors. This study investigates the influence of differences in ESG ratings on investor sentiment and its underlying mechanism using a sample of businesses listed on the A-share market in Shanghai and Shenzhen between 2015 and 2022. Research has shown that when there is a significant difference in ESG ratings, it has a detrimental effect on investor sentiment. This means that when there is a large divergence in ESG ratings, it negatively affects investor sentiment, leading to a decrease in their evaluation and confidence in the company. Empirical investigations demonstrate that the focus and consideration given by analysts and research reports play a crucial role in how differences in ESG ratings impact investor sentiment. Additional investigation reveals that the adoption of GRI standards and the verification of ESG reports by third-party entities can somewhat reduce the influence of divergence on the fluctuation of investor mood, as well as enhance investor acknowledgment of revealed information. The paper examines the influence of disagreement in ESG ratings on investor mood, contributes to existing research on ESG ratings dispute, and presents empirical evidence to support the development of China's ESG ratings system and the establishment of a "rational" investment market.

KEYWORDS

ESG rating divergence; Investor sentiment; Behavioral finance; Information asymmetry; Analyst focus

1. INTRODUCTION

ESG, which stands for Environmental, Social, Governance, is a comprehensive framework for evaluating Corporate Social Responsibility (CSR) by examining corporate performance in terms of environmental impact, social responsibility, and governance practices. Due to the rising importance of global environmental concerns, heightened recognition of corporate social responsibility (CSR), robust legislation and regulations, and evolving investor expectations, the notion of responsible investment with a focus on environmental, social, and governance (ESG) factors is increasingly gaining acceptance and being stressed. On a global basis, the number of institutions adopting the ESG concept is steadily growing, and the size of sustainable investment assets is continuously expanding. As of the end of 2022, there are 5,309 institutions from over 80 countries and regions that have

internationally signed PRIs. The entire scale of sustainable investment assets has also reached USD 30.3 trillion (GSIA-2022), accounting for 30.8% of the overall share. Consequently, countries have expedited the development of ESG evaluation systems in response to growing demand, and ESG ratings have emerged as a significant factor in investment decision-making.

Statistics indicate that there are already over 600 ESG rating firms worldwide, however China has only about 20, reflecting a very sluggish pace of development. Furthermore, there is still potential for improvement in the caliber of domestic ESG ratings. China's ESG ratings are now in the developmental phase, and there is no established, localized ESG evaluation system. As a result, the ratings of a company can vary among different ESG rating agencies. Nevertheless, this disparity is not an uncommon occurrence, but rather prevalent both domestically and internationally. Furthermore, rating outcomes can often vary dramatically between domestic and foreign assessments conducted simultaneously. Using the ESG ratings of Guizhou Maotai (SH600519) in the first quarter of 2024 as an example, we observe that foreign agencies MSCI and LUFT assigned ratings of B and C+ respectively, while domestic agencies CSI and Chidian assigned ratings of BBB and AAA respectively. This indicates a noticeable disparity between domestic and foreign ratings.

Fundamentally, this distinction arises from disparities in foundational data, choice of pivotal subjects, and the act of granting authority. The disparity in ESG ratings diminishes the informative significance of rating outcomes, and when a single company is assigned numerous sets of ESG ratings data, it can lead to decision-making anxiety for investors. Users who are directly affected by rating results are frequently more prone to making unreasonable judgments when there is a lack of information balance. This might negatively affect the volatility of sentiment. This study focuses on A-share listed businesses in Shanghai and Shenzhen from 2015 to 2022. The objective is to objectively examine the influence and trajectory of ESG rating divergence on investor sentiment.

2. LITERATURE REVIEW

2.1. Causes and Economic Consequences of ESG Rating Divergence

ESG, a framework used to examine corporate social responsibility and sustainability strategies, has garnered significant academic interest since its inception. The field of ESG research has primarily consisted of studies examining causation, with a particular emphasis on corporate finance and the impact of ESG factors on capital market returns and expenses. As ESG ratings are being used more by market participants, academic research has been conducted to examine the relationship between ESG ratings and various factors such as stock market performance, accounting performance, financial constraints, and governance characteristics (e.g., Cheng, Ioannou, and Serafeim 2014; Khan, Serafeim, and Yoon 2016; Hubbard, Christensen, and Graffin 2017). Nevertheless, several academics have raised concerns about the lack of consistency in ESG ratings, which can result in investors receiving unclear signals and perhaps making irrational choices. This is particularly problematic in a market when there is a widespread absence of agreement regarding the benefits of ESG performance.

ESG rating divergence is a topic that is gradually coming into researchers' view after 2020. Current research in this area focuses on the causes of divergence and its economic consequences. ESG ratings are assessments of a company's environmental, social and governance (ESG) performance, and there is often divergence in the ratings of different rating agencies. Such differences can be attributed to several factors. First, differences in the methodologies used by these agencies play an important role. These agencies may refer to different ESG categories, use different assessment methods, and assign different levels of importance to each category [1] (Torre et al., 2020). Second, the lack of transparency among these institutions about what constitutes ESG performance and how it is measured also contributes to the differences [2] (Abhayawansa & Tyagi, 2021). Practical reasons such as scope, weighting, aggregation, and measurement divergence, as well as the influence of raters, all contribute to differences in ESG data sources [3] (Eccles & Stroehle, 2018). Further, the extent

and standard of ESG disclosure by companies also affects differences in ESG ratings. More quantitative ESG disclosures, particularly environmental and social, are associated with increased ESG rating variance [4] (Liu, 2022). For example, a study by Christensen et al. (2021) suggests that enhanced ESG disclosure leads to greater variance in ESG rating outcomes [5]. In addition, Chatterji et al. (2016) argue that ESG ratings diverge because ESG raters differ in their understanding of environmental and social responsibility, which in turn leads to lower relevance of ESG reports across rating agencies [6].

Although there is not yet a unified view on the reasons for ESG rating divergence, it is certain that ESG rating divergence diminishes the value of ESG rating results as a reference for investor decision making [7]. Research suggests that greater ESG rating divergence is associated with higher return volatility, greater absolute price volatility, and a reduced likelihood of issuing external financing [5] (Christensen et al., 2021). This divergence in turn drives the formation of different ESG portfolios [8] (Billio et al., 2021), while creating challenges for investors to integrate ESG into their investment strategies, which may ultimately lead to inefficiencies in capital markets [4] (Liu, 2022). For example, ESG rating divergence can hinder the incorporation of value-relevant ESG news into stock prices, affecting market expectations and hindering the financial performance of ESG portfolios^[9, 10] (Serafeim and Yoon, 2022; Billio et al., 2020). Further, the impact of ESG rating divergence on firm value and performance has been demonstrated in studies showing a negative impact on firm value^[11] (Kim & Bonha, 2023), but politically and ideologically motivated ESG rating changes may improve financial performance [12] (Aboud & Diab, 2019). In addition, ESG rating disagreements have economic impacts beyond financial markets, and changes in their assessments affect society as a whole^[13] (Escrig-Olmedo et al., 2019). In summary, ESG rating divergence has far-reaching economic consequences that affect stock returns, company value, investment decisions, and the overall efficiency of capital markets, so mitigating the challenges posed by ESG rating divergence is critical for investors, companies, and policymakers to make informed decisions and promote sustainable investment practices.

2.2. Research on the Impact of Investor Sentiment

Investor sentiment refers to investors' perceptions of future cash flows and investment risks, which may not be justified by factual information and often such perceptions may be inconsistent with factual information [14] (Chen & Haga, 2021). It is an important area of research in the field of behavioral finance and plays a crucial role in influencing stock market dynamics, which means that when investor sentiment affects the demand of enough investors, the price of a security deviates from its fundamental value [15] (Mørck et al., 1990). This sentiment is highly correlated with future market returns and has predictive power [16] (Neves, 2018). In addition, it is considered a cognitive bias of investors that disturbs capital markets, similar to "noise" [17] (Yang, 2022). Furthermore, exploring the relationship between investor sentiment and stock returns can reveal how investor sentiment affects the functioning of stock markets [14] (Chen & Haga, 2021). For example, a shock to investor sentiment can have a significant impact on stock market returns, especially in bull markets [18] (Hu et al., 2021), as well as causing irrational exuberance and panic declines in financial bubbles and crises [19] (Yu, 2021). In addition, investor sentiment is contagious, affecting stock returns in international markets [20] (Hudson & Green, 2013).

In addition to financial markets, Baker & Wurgler (2007) were the first to explore investor sentiment from a macroeconomic perspective, emphasizing its exogenous origins and empirical effects [21]. For example, the impact of energy prices on investor sentiment in the United States [22] (Apergis et al., 2017) and the importance of investor sentiment in key events such as the COVID-19 pandemic, revealing its impact on investor behavior and market dynamics [23] (Song et al., 2021). In addition, it was found that investor sentiment affects trade to varying degrees under different market conditions, influencing returns and volatility [24] (Liu & An, 2018). It has been observed that investor sentiment

has a stronger impact on firms in strong market competition than firms in weak market competition [25] (Huang et al, 2019).

The literature on investor sentiment is growing, with scholars from several disciplines contributing to a more comprehensive knowledge of how sentiment impacts financial markets and investment choices.

2.3. Commentary

To summarize, the divergence in ESG ratings will make it harder for investors to accurately assess a company's true ESG information, leading to various negative consequences. Previous research has examined the factors that influence investor sentiment, but it is important to investigate whether this ESG rating divergence will also become a significant factor affecting investor sentiment. Recently, the majority of study on ESG ratings has been on the macroeconomic, meso-market, and individual firm levels, with less emphasis on micro-investor research. This paper examines the influence of ESG information on investors and its international effects by utilizing data from six domestic and international ESG rating agencies. It also contributes to the research on ESG ratings divergence and investor sentiment, providing insights for future development in this field. It offers valuable research insights and promotes innovation for future advancements in the realm of ESG rating divergence and investor sentiment.

3. THEORETICAL ANALYSIS AND RESEARCH HYPOTHESES

This study presents an analysis of the factual existence of investor sentiment based on the principles of behavioral finance. Behavioral finance is the examination of individuals' behavioral tendencies and psychological biases when making financial decisions and how these factors affect the efficiency of the market. The discipline integrates psychological, economic, and financial ideas and methodologies to comprehend and elucidate the actions of investors and market participants. The theory challenges the belief in the efficiency of market fundamentals by asserting that both markets and investors exhibit bounded rationality. This implies that investor decisions can be influenced by irrational influences, resulting in phenomena like market mispricing. Furthermore, the collective behavior of society and the phenomenon known as the "herding effect" will undermine the tendency for individual rational decision-making, resulting in market disarray. Behavioral finance theory primarily examines how restricted investor rationality affects financial investment. However, it is important to note that financial investment also influences investor attitude. During the property market bubble in Japan at the end of the last century, enterprises and financial institutions capitalized on the low-cost credit environment and relaxed regulatory policies. They borrowed large sums of money and used leverage to invest in the real estate market. This gradually drove up real estate prices, creating the illusion of prosperity for individuals and foreign investors. These actions conveyed irrational investment signals and significantly impacted the rationality of investor emotions. Hence, the influence of financial investment on investor sentiment yields the worth of theoretical examination.

And how does financial information (decision making) specifically affect investor sentiment? This paper explains this from two theories. First, the information asymmetry theory. Information asymmetry theory emphasizes the importance of information in economic transactions and the impact that information asymmetry may have on market efficiency and resource allocation. ESG disclosure and ratings are generally helpful in bridging the information asymmetry between firms and investors as well as in lowering agency costs, so that investors can better understand potential risks that are difficult to quantify. However, ESG rating discrepancies exacerbate information asymmetry because the confusion represented by the discrepancy itself is an unclear investment signal to investors. Understanding from the information transmission theory, the corporate information conveyed by differentiated rating scores is also ambiguous, and investors will therefore speculate and question the rating results, lowering their evaluation of and confidence in the company. Second, the catering theory,

which was first proposed by Baker in 2004. Catering theory refers to the decisive factor affecting corporate behavior is the degree of importance it receives from investors, and analyzes the motivation of corporate behavior from the perspective of investors. Yu et al. (2018&2020), Kamaludin (2022) believe that corporations have the motivation to cater to the needs of the public and investors through ESG disclosure and improving the ratings scores, and that the main purpose is not to satisfy the corporations themselves, but to meet the demands of the public and investors. Main purpose is not to satisfy the firm's own needs, but the behavior of catering to the institutional and public opinion environment [26-28]. The main purpose is not to fulfill the needs of the enterprise itself, but to cater to the institutional environment and public opinion environment. Given that companies proactively include ESG assessments to address investor sentiment, it is logical to infer that they perceive corporate ESG information as highly esteemed and influential on investor sentiment. When these evaluations are combined and determined to be considerably distinct, it inherently affects investor sentiment as well.

Based on the aforementioned analysis, this study presents the research hypothesis: The discrepancy in ESG ratings has a substantial adverse effect on investor sentiment.

4. RESEARCH DESIGN

4.1. Sample Selection and Data Sources

This paper takes the A-share listed companies in Shanghai and Shenzhen from 2015 to 2022 as the initial sample, and treats the data according to the actual needs of the study as follows: (1) Considering the special characteristics of ST and ST* companies, this paper excludes such companies; (2) Since the accounting treatment of listed companies in the financial industry is more different compared with other industries, this paper excludes such companies; (3) Since the explanatory variables in this paper are measured by standard deviation, the data that there are and only one agency giving ratings in one year are deleted; (4) the companies with missing relevant data are eliminated. After the screening process, this paper finally obtains 13,012 observation samples. In order to eliminate the influence of extreme values on the conclusions, this paper carries out extreme value adjustment (Winsorize) at the 1% and 99% levels for continuous variables. CSI ESG Ratings, WIND ESG Ratings, Allied Wave FIN-ESG Ratings, and FTSE Russell ESG Ratings are from the WIND database, Business Gateway Ronglv ESG Ratings are from the Business Gateway Ronglv ESG Ratings Data Platform, Bloomberg ESG Ratings are from Bloomberg Index Services, and control variables are from the CSMAR database.

4.2. Definition of Variables

4.2.1. Explained variables

The investor sentiment variable draws on the studies of Baker & Wurgler (2006) and Jin Guanghui (2015), and firstly uses the proxy variables reflecting the company's future growth prospects, risks, and information asymmetry, such as the growth rate of operating income, return on equity, return on equity, balance sheet ratio, and enterprise size, which reflect the company's future growth prospects, risks, and information asymmetry, to orthogonalize with the four investor sentiment subdimensions of the company's book-to-market ratio, stock return momentum, Tobin's Q, and The four investor sentiment sub-dimensions, namely book-to-market ratio, stock return momentum, Tobin's Q, and stock turnover rate, are orthogonalized to eliminate the influence of the company's fundamental factors, and then the residuals are analyzed as the investor sentiment proxies in principal component analysis, and the first two principal component factors with a combined explanatory strength of 85% are taken to synthesize the investor sentiment composite index, Sentiment(Sent) [29].

4.2.2. Explanatory variables

The explanatory variable ESGdif is the ESG rating divergence, drawing on Tai-Ming Ho's (2023) [7] 's method of assigning ratings to the six ESG rating agencies, and deflating the assignment percentages so that the resultant value domain is fitted to a range between 0-10 to facilitate reasonable comparative calculations. The explanatory variables in this paper are selected from six types of ways, namely, CSI ESG rating index, WIND ESG rating index, ShangDao RongGreen ESG rating index, Allied Wave FIN-ESG rating index, Bloomberg ESG rating scores and FTSE Russell ESG rating scores, and the results of the ratings are assigned and standard deviation is calculated to measure the divergence of the company's ESG ratings.

4.2.3. Control variables

Drawing on the literature, this paper includes a series of control variables that potentially affect investor sentiment, including firm size, gearing, ROA, growth, BM, PB, TobinQ, and firmAge, in order to improve the accuracy of the study. FirmAge), the definitions of the specific variables can be found in the table below. In addition, this study considers industry and year fixed effects.

Table 1. Definition of variables

Variable type	variable name	variable symbol	Variable Definition
explained variable	Investor Sentiment Composite Index	Sent	A higher Sent value means that investor sentiment is higher and more confident in the business
explanatory variable	ESG Rating Divergence	ESGdif	See variable definitions for details
control variable	Company size	Size	Natural logarithm of total assets for the year
	gearing	Lev	Total liabilities at year-end / Total assets at year-end
	Net profit margin on total assets	ROA	Net profit / average balance of total assets
	Revenue growth rate	Growth	Operating income for the current year / Operating income for the previous year - 1
	Book-to-market ratio	BM	Book value / Total market value
	market capitalization ratio	PB	Price per share / Net assets per share
	Tobin's Q	TobinQ	(Market value of outstanding shares + number of non-outstanding shares × net assets per share + book value of liabilities) / Total assets
	Years of Establishment	FirmAge	ln(current year - year of incorporation + 1)

4.3. Empirical Models

To verify the impact of ESG rating divergence on investor sentiment, we construct the following model to test it:

$$Sent_{i,t} = \beta_0 + \beta_1 ESGdif_{i,t} + \beta_j Controls_{i,t} + \sum Ind + \sum Year + \varepsilon_{i,t} \quad (1)$$

In model (1), Sent is investor sentiment and ESGdif is ESG rating divergence, this paper focuses on the coefficients of $ESGdif\beta_1$. Controls are control variables, year and Ind are year and industry dummy variables respectively. Where footnotes i and t denote firms and years, respectively.

5. ANALYSIS OF EMPIRICAL RESULTS

5.1. Descriptive Statistical Analysis

The table below presents the descriptive statistics of the primary variables for the entire sample. During the sample period, the investor mood in China's stock market was typically low, as indicated by the negative mean and median values. This suggests that the number of bears outweighed the number of bulls. The variability of investor mood is evident from the standard deviation, maximum, and minimum values. These findings align with the fact that China's stock market experiences considerable fluctuations and has a high turnover rate over the observed period. The average value of ESGdif is 1.182, suggesting that there is variation in ESG ratings among the companies included in this study. The sample is reasonably representative and reasonable. The ESGdif exhibits a significant deviation of 3.536, suggesting a substantial level of disagreement in the ESG ratings across the companies included in this study. Signifies that the ESG grading outcomes exhibit significant disparity. The statistical results of the other control variables are in line with previous studies and will not be replicated.

Table 2. Descriptive statistics

	(1)	(2)	(3)	(4)	(5)	(6)
variant	sample size	average value	variance statistics	upper quartile	minimum	maximum
Sent	13,012	-0.0225	0.511	-0.110	-1.089	3.077
ESGdif	13,012	1.182	0.581	1.211	0	3.536
Size	13,012	22.86	1.308	22.69	19.81	26.45
Lev	13,012	0.452	0.193	0.451	0.0515	0.902
ROA1	13,012	0.0337	0.0693	0.0333	-0.373	0.247
Growth	13,012	0.130	0.370	0.0838	-0.658	4.024
BM	13,012	0.684	0.270	0.683	0.0641	1.246
PB	13,012	2.786	2.633	2.033	0.413	38.39
TobinQ	13,012	1.855	1.236	1.464	0.802	15.61
FirmAge	13,012	3.066	0.258	3.091	2.079	3.611

5.2. Correlation Analysis

The table provided displays the correlation coefficients of the primary variables. The majority of correlation coefficient test results successfully meet the statistical test criteria at the 5% significance level. Additionally, the majority of correlation coefficients between the variables are below 0.01, suggesting a lack of covariance between the variables and indicating that the regression findings are more reliable. The primary variable, Sent, exhibits a strong negative correlation with ESGdif, providing first evidence that supports the concept of this research work.

Table 3. Correlation analysis

variant	Sentiment	ESGdif6	Size	Lev	ROA1	Growth	BM
Sentiment	1						
ESGdif	-0.026***	1					
Size	0	0.040***	1				
Lev	0.00300	0.00200	0.496***	1			
ROA1	0.108***	-0.027***	0.109***	-0.295***	1		
Growth	0.023***	-0.047***	0.084***	0.039***	0.273***	1	
BM	-0.571***	-0.085***	0.526***	0.392***	-0.196***	-0.067***	1
PB	0.554***	0.074***	-0.311***	-0.073***	0.101***	0.103***	-0.714***
TobinQ	0.568***	0.072***	-0.353***	-0.318***	0.230***	0.072***	-0.804***
FirmAge	-0.076***	0.021**	0.064***	0.104***	-0.054***	-0.066***	0.168***
	PB	TobinQ	FirmAge				
PB	1						
TobinQ	0.847***	1					
FirmAge	-0.123***	-0.116***	1				
Note: The values in the table are Pearson's correlation coefficients, ***, **, and * represent significant at the 1%, 5%, and 10% levels, respectively.							

5.3. Analysis of Benchmark Regression Results

The table presents the outcomes of the regression analysis that examines the relationship between the divergence in ESG ratings and investor sentiment. The regression findings in column (1) demonstrate that when controlling for year and industry, the coefficient of ESGdif is -0.04891. This coefficient is statistically significant at the 1% level, showing that an increase in ESG rating divergence has a negative impact on investor sentiment. In other words, it diminishes investor confidence. The regression findings in column (2) demonstrate that the coefficient of ESGdif is -0.07262 and is statistically significant at the 1% level. This finding suggests that there is a considerable reduction in investor sentiment due to ESG rating divergence, hence confirming the premise of this article.

Table 4. Regression results

variant	(1)	(2)
	Sentiment	Sentiment
ESGdif	-0.04891***	-0.07262***
	(-6.36)	(-11.41)
Size		0.22506***
		(17.93)
Lev		0.06858
		(1.42)
ROA1		-0.09578
		(-1.50)
Growth		-0.10798***
		(-12.24)
BM		-1.40798***
		(-42.49)
PB		0.02714***
		(8.59)
TobinQ		0.04423***
		(5.90)
FirmAge		0.13284
		(1.23)
_cons	0.74904***	-4.38244***
	(6.96)	(-10.63)
Year/Industry	YES	YES
N	13012	13012
adj. R2	0.2292	0.4743
p-values in parentheses		
* p < 0.1, ** p < 0.05, *** p < 0.01		

5.4. Robustness Tests

5.4.1. Replacement of explanatory variables: ESG rating extremes

In the robustness check, this study use the extreme variance approach to measure the extent of divergence in ESG ratings. It does so by calculating the extreme variance ESGrange of the six categories of ESG rating levels under consideration. Regression analysis is performed while controlling for industry and year fixed effects. The resulting findings are displayed in the table below. Column (1) displays the regression findings without the incorporation of control factors, while column (2) exhibits the regression results with the inclusion of control variables. The findings indicate that when utilizing ESG rating extremes (ESGrange) as an explanatory variable, there is a substantial negative correlation between ESG rating divergence and investor sentiment at the 1% level. This demonstrates that an increase in ESG rating divergence has a detrimental effect on investor sentiment.

Table 5. Substitution of explanatory variables

	(1)	(2)
	Sentiment	Sentiment
ESGrange	-0.01495***	-0.03550***
	(-3.57)	(-10.20)
Size		0.23152***
		(18.39)
Lev		0.05961
		(1.23)
ROA1		-0.10587*
		(-1.66)
Growth		-0.10883***
		(-12.31)
BM		-1.41175***
		(-42.51)
PB		0.02720***
		(8.60)
TobinQ		0.04475***
		(5.96)
FirmAge		0.13948
		(1.29)
_cons	0.70977***	-4.58053***
	(6.60)	(-11.09)
Year/Industry	YES	YES
N	13012	13012
adj. R2	0.2273	0.4731
p-values in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01		

5.4.2. Replacement of explanatory variables: SentA,SentB

This paper draws on references to Rhodes- Kropf (2005) [30] , Polk (2009) [31] and Qing Zhang (2014) [32] et al. and conducts basic regressions using SentA and SentB as proxy variables for investor sentiment (Sent). Both types of regressions control for industry and year fixed effects, as well as firm clustering, and the regression results are shown in Table 6, where Columns (1) and (3) are the regression results without the inclusion of control variables, and Columns (2) and (4) are the regression results with the inclusion of control variables. The results show that the coefficients of ESGdif are both significantly negatively correlated at the 1% level when using SentA and SentB as explanatory variables, indicating that increased ESG rating divergence promotes irrational investor behavior and negatively affects investor sentiment.

Table 6. Substitution of explained variables

variant	SentA		SentB	
	(1)	(2)	(3)	(4)
ESGdif	-0.043*** (-3.25)	-0.063*** (-8.92)	-0.181*** (-7.68)	-0.174*** (-7.40)
Controls	NO	YES	NO	YES
Year/Industry	YES	YES	YES	YES
N	12390	12390	12390	12390
Adj. R2	-0.1883	0.6819	-0.1924	-0.1774

5.5. Further Study

5.5.1. Mechanism of impact

From the results of the above analysis, it can be seen that ESG rating divergence significantly reduces investor sentiment, but the mechanism of its realization remains to be studied. For general investors, ESG ratings as a relatively high threshold of company information, there are objective difficulties in the process of obtaining and understanding, so they need to use the media to contact and understand ESG ratings faster, so as to adjust their investment behavior. Analysts, with their high level of professionalism, are able to understand the divergence of ESG ratings at an early stage and incorporate specific information into their reports for dissemination. Therefore, this paper argues that analysts' attention and research reports' attention may be the influential mechanism by which ESG rating divergence affects investor sentiment. This paper refers to Zhou, Kaiguo (2014) [33] method to calculate the analyst and research report attention data. The results are shown in the table below, the coefficients of ESG rating divergence are 0.061 and 0.074 respectively, both significant at 1% level, indicating that the larger the rating divergence is, the more it attracts analysts' attention and is more obvious in the research reports. The above results show that rating divergence negatively affects investor sentiment through analyst and research report channels.

Table 7. Mechanisms of influence

	(1)	(2)	(3)	(4)
	Analyst Focus	Analyst Focus	Research Report Attention	Research Report Attention
ESGdif	0.10757***	0.06147***	0.13162***	0.07432***
	(6.51)	(4.28)	(6.11)	(3.98)
Size		0.66935***		0.81763***
		(25.24)		(23.77)
Lev		-0.71863***		-0.91490***
		(-6.97)		(-6.84)
ROA1		1.37878***		2.03749***
		(9.22)		(10.50)
Growth		-0.00351		0.04460*
		(-0.19)		(1.88)
BM		-1.65276***		-2.24897***
		(-25.21)		(-26.44)
PB		0.05119***		0.06261***
		(7.44)		(7.01)
TobinQ		-0.05122***		-0.07936***
		(-3.37)		(-4.03)
FirmAge		-0.13092		-0.15770
		(-0.64)		(-0.60)
_cons	2.64477***	-11.41550***	3.75586***	-13.31017***
	(10.36)	(-13.68)	(11.30)	(-12.29)
N	8322	8322	8322	8322
adj. R2	-0.1973	0.1039	-0.2106	0.1007
p-values in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01				

5.5.2. Heterogeneity analysis

This paper groups companies according to whether their ESG disclosure reports are attested by a third-party auditor and whether they are disclosed according to GRI standards. The results are shown in the table below, with more significant differences between groups. The rating divergence of reports not audited by a third-party organization is significantly negatively correlated with investor sentiment at the 1% level. It indicates that unaudited reports lack reliability as the main source of basis for ratings and the reports transmit this uncertainty to investors ultimately exacerbating the instability of investor sentiment. In addition, the higher significance of reports not compiled in accordance with GRI standards as compared to executive standards suggests that reports with executive standards are relatively more reliable, mitigating the extent to which disagreement affects investor sentiment.

Table8. Heterogeneity analysis

	(1)	(2)	(3)	(4)
	Sentiment	Sentiment	Sentiment	Sentiment
	Cer=0	Cer=1	Gri=0	Gri=1
ESGdif	-0.09039	-0.07362***	-0.08505***	-0.07486***
	(-0.82)	(-11.55)	(-3.49)	(-11.13)
Size	0.54051	0.22517***	0.27652***	0.24534***
	(1.48)	(17.79)	(5.36)	(17.52)
Lev	-0.84915	0.06245	-0.08977	0.03214
	(-0.75)	(1.29)	(-0.42)	(0.63)
ROA1	1.26353	-0.11384*	0.17736	-0.13470**
	(0.89)	(-1.78)	(0.59)	(-2.05)
Growth	-0.18801	-0.10749***	-0.09296***	-0.11382***
	(-1.13)	(-12.16)	(-2.75)	(-12.19)
BM	-0.19717	-1.40767***	-1.16901***	-1.40316***
	(-0.35)	(-42.33)	(-9.74)	(-39.42)
PB	0.16565**	0.02664***	0.09277***	0.02358***
	(2.34)	(8.43)	(5.23)	(7.22)
TobinQ	0.31495	0.04399***	-0.03170	0.04832***
	(1.65)	(5.87)	(-0.90)	(6.13)
FirmAge	-1.56290	0.15942	-0.34448	0.19557
	(-1.57)	(1.47)	(-1.07)	(1.59)
_cons	-8.65602	-4.45167***	-4.27199***	-5.02989***
	(-0.97)	(-10.73)	(-2.89)	(-10.85)
N	143	12861	1794	11210
adj. R2	0.1407	0.4760	0.1783	0.4865
p-values in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01				

6. CONCLUSIONS AND RECOMMENDATIONS OF THE STUDY

Due to the absence of a standardized ESG rating system, various ESG agencies frequently assign significantly different ESG ratings to the same company. This divergence in ESG ratings can complicate the evaluation of a company for investors, thereby impacting all stakeholders who rely on ESG ratings. This article examines the influence of differences in ESG ratings on investor mood, specifically focusing on ESG rating divergence. Research indicates that there is a direct correlation between the extent of divergence in ESG ratings and the level of negative sentiment among investors. Additional investigation reveals that analysts and research reports focusing on ESG rating disagreement contribute to the development of disagreement regarding negative investor sentiment and intensify the instability of investor sentiment. However, the presence of ESG reports and disclosures certified by a third-party auditor or the adoption of the GRI standard can partially mitigate the influence of rating disagreement on investor sentiment volatility. This, in turn, enhances their assessment of and trust in the company, ultimately alleviating irrational market behavior and bias in asset pricing. Given the aforementioned discoveries, this document proposes the following suggestions:

6.1. Third party Forensic Services

While accounting companies are generally well-regarded for their assurance services, there is literature that raises doubts about this reputation. Accounting companies may lack the requisite background and industry-specific skills to offer assurance on ESG engagements, as noted by Cohen and Simnett (2015). Accounting assurance providers typically restrict their services to negative assurance opinions due to their conservative and cautious approach. In contrast, other third-party assurance providers prioritize adding value to the organization and are more inclined to provide positive opinions. They also place special emphasis on considering ESG factors, which are not only used to analyze financial outcomes but also to support impact investing. Through the implementation of forensic work in ESG reporting, listed companies can achieve two main objectives. Firstly, they can establish clear standards for disclosing ESG data. Secondly, they can conduct a comprehensive evaluation of the effectiveness and rigor of their internal control systems and control activities related to ESG. This evaluation helps listed companies identify any weaknesses in their current management system and provides valuable support for improving it. Standardizing the ESG workflow enables listed firms to enhance the quality of their ESG reports, address the concerns of different stakeholders, and offer more efficient and transparent ESG information to potential report consumers, such as investors. Nevertheless, further investigation is required to determine if accounting firms can offer enhanced external validation for voluntary ESG reports. Additionally, there is a need to expedite the creation of ESG assurance criteria and the implementation of an independent process to ensure the accuracy of ESG reports.

6.2. Harmonization of Disclosure Standards

Now, ESG reports are created using diverse methods, and the expense of coordinating across different disclosure standards is significant. Therefore, there is a strong anticipation for the implementation of a single international assessment standard. The Guidelines for Listed Companies' Sustainability Reporting will be officially implemented by the local Shanghai and Shenzhen Stock Exchanges on May 1, 2024. These rules serve as the inaugural, standardized, and pragmatic ESG disclosure standard for A-share businesses. They will direct and oversee listed companies in issuing "Sustainability Report of Listed Companies" or "Environmental, Social and Corporate Governance Report of Listed Companies". According to the data, the requirements presently apply to around 457 A-share listed firms. These companies are expected to make mandatory disclosure of sustainability reports, with the latest deadline for disclosing their 2025 Sustainability Report being in 2026. The adoption of the Guidelines will have a significant impact on improving the transparency, accountability, and efficiency of China's sustainability reporting. It will also contribute to the promotion of global economic, social, and environmental sustainability. Nevertheless, there remains a considerable distance to cover before universally acknowledged ESG reporting requirements are established. Extensive study is required to enhance the quality of disclosure in China's ESG reports and to harmonize the regulations with global norms.

6.3. Supervision and Regulation of Rating Agencies

Enhancing research on the supervision and control of ESG rating agencies In order for the resource allocation efficiency role of ESG reports to work effectively, it is necessary for the information to be readily available, able to be compared, and able to be verified. According to credit rating organizations, ESG rating agencies have two main purposes: to decrease imbalances in ESG information and to fulfill a quasi-regulatory role in assessing sustainability. From the rating agencies' standpoint, ESG ratings primarily consider the potential risks that a company may encounter at the ESG level. These ratings do not necessarily take into account the good or negative effects of the company's own actions and conduct on people and the environment. Hence, it is imperative to enhance the supervision and control of ESG rating agencies to guarantee their effective contribution

in implementing this market-oriented strategy for addressing climate change. It is imperative for the nation to prioritize the well-being of the ESG rating market by ongoing testing and evaluation of ESG ratings for environmentally friendly initiatives, while also offering comprehensive guidance on the fundamental components.

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