sustainability

MDPI

Article

Diversity of Institutional Investors' Bidding Opinions in Shaping the Sustainability of IPO Performance †

Anqi Li [1], Xue Li [2], Jiayan Liu [3] and Aochen Cao [1,*]

[1] School of Economics, Central University of Finance and Economics, Beijing 102206, China; 2022110127@email.cufe.edu.cn
[2] School of Economics and Management, Southwest University of Science and Technology, Mianyang 621010, China; lixue@mails.swust.edu.cn
[3] School of Finance, Capital University of Economics and Business, Beijing 100070, China; 12023110005@cueb.edu.cn
* Correspondence: 2022110101@email.cufe.edu.cn; Tel.: +86-182-0303-6483
† We thank seminar participants at the 5th Future Economics Forum for the precious comments.

Abstract: In this study, we leverage a comprehensive dataset of over 3.8 million bid entries from institutional investors participating in China's capital market to investigate the determinants of heterogeneous bidding behavior among these investors and the subsequent economic outcomes. We evaluate the sustainability of initial public offering (IPO) performance through three interrelated metrics: post-IPO stock price performance, financial accounting performance, and environmental, social, and governance (ESG) performance. Our analysis reveals a pronounced positive association between the quality of firms' pre-IPO and the recent reforms to the bookbuilding mechanism in China's capital market, as well as the level of diversity in institutional investors' bidding opinions. After accounting for these factors, we focus on the nexus between the diversity of bidding opinions and the sustainability of IPO performance. The empirical evidence indicates that a higher degree of diversity in bidding opinions is inversely related to firms' post-IPO stock price performance, financial accounting performance, and ESG performance. Further mechanism tests suggest that this diversity leads to a depletion of medium- to long-term share price performance by intensifying market sentiment; impedes the enhancement of financial accounting performance by reducing the capital raised during the IPO; and negatively impacts ESG performance by constraining the firm's ability to fulfill its corporate social responsibilities. These findings challenge the assumption that diversity of opinion is always beneficial. The insights gained from this research have significant implications for the sustainable growth strategies of listed companies in emerging markets.

Keywords: Chinese capital market; diversity of opinions; sustainability; ESG performance

check for updates

Citation: Li, A.; Li, X.; Liu, J.; Cao, A. Diversity of Institutional Investors' Bidding Opinions in Shaping the Sustainability of IPO Performance. *Sustainability* **2024**, *16*, 4418. https://doi.org/10.3390/su16114418

Academic Editor: Marc A. Rosen

Received: 22 April 2024
Revised: 21 May 2024
Accepted: 22 May 2024
Published: 23 May 2024

Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

1. Introduction

Listed companies, as important micro-entities in the market, have the crucial mission of promoting sustainable development strategies while fostering rapid economic growth. The United Nations World Commission on Environment and Development (WCED) proposed the macro concept of sustainable development for corporate purposes, and an increasing number of scholars are applying this concept to the enterprise level. This concept refers to a company's ability to sustain its growth in profitability while also using resources rationally and minimizing the adverse impact of its production activities on the environment, thereby earning long-term support from both internal and external stakeholders. Corporate sustainable development thus denotes a company's capability to achieve sustainable profit growth, utilize resources efficiently, and mitigate the environmental impact of its operations to secure the long-term backing of stakeholders [1]. Corporate sustainability performance refers to a company's combined success in achieving economic and environmental sustainability objectives and is used to gauge the level of a company's sustainable development [2].

However, many studies have focused solely on environmental sustainability, often overlooking the economic dimension when measuring the sustainability of corporate performance. Currently, the literature widely uses environmental, social, and governance (ESG) scores to assess the sustainable development performance of listed companies [3,4]. A higher ESG score is considered indicative of a stronger sustainability profile for the company [5,6]. The sustainability of a company is understood to involve the adoption of business strategies and activities that meet the current needs of the company and its stakeholders while also protecting, preserving, and enhancing the human and natural resources vital for the future [7]. This underscores the company's performance in the social and environmental domains, going beyond traditional financial metrics [8]. Stock prices, which reflect a company's market value, encapsulate a wide range of information, including policies, industry trends, performance, and unforeseen events [9]. Accounting performance, meanwhile, offers a direct measure of business operations. Consequently, it is reasonable to integrate stock price performance, accounting performance, and ESG performance to gauge the sustainability of corporate development.

Meanwhile, current research on corporate sustainability primarily concentrates on listed companies in the secondary market [10–12]. Nonetheless, we argue that the IPO market provides a useful context for examining corporate sustainability. On the one hand, the financial field has identified the "IPO long-term decline puzzle" [13], and a company's ability to maintain strong stock prices post-IPO serves as compelling evidence of the sustainability of its stock price performance. On the other hand, in the realm of accounting, the performance of a company after its IPO can be compared to the accounting year prior to listing, and a positive showing post-IPO can further testament to the sustainability of the company's IPO performance.

This paper examines the impact of diversity of bidding opinions on IPO performance from the perspective of institutional investors. Increased bid diversity leads to a significant reduction in the medium- and long-term post-IPO performance, accounting performance, and ESG performance of stocks. Specifically, when each unit increases in the diversity of bidding opinions, the share price performance in the 6-month, 1-year and 2-year period after listing is divided into a decrease of 0.450, 0.117 and 0.545 units, ROE and ROA in the year of listing are decreased by 12.347 and 10.090 units, respectively, earnings growth is decreased by 1.513 units, and Tobin's Q value is decreased by 0.320 units, respectively, when comparing with the year prior to the listing. In terms of ESG performance, the E-score decreased by 1.030 units and the ESG composite score decreased by 0.326 units. We also find that the diversity of institutional investors' bidding opinions has an impact on investor sentiment, IPO over-raised and social score at a significance level of 1% or 5%; it also has a negative impact on IPO stock price performance, accounting performance and ESG performance through the above three paths.

The rest of the paper is organized as follows. The second part of the paper is the literature review and hypothesis development; the third part is the research design; the fourth part reports the empirical results of the paper; the fifth part is the further research; the sixth part is the discussion; and the seventh part reports the conclusions and discussion of the paper, the theoretical contributions, and the future research directions.

2. Literature Review and Hypotheses Development

2.1. Literature Review

The extant literature predominantly concentrates on the impact of internal factors on the sustainability of firm performance [14–16], while the influence of external factors, particularly the actions of micro-entrepreneurs, on this sustainability has been relatively underexplored. For an extended period, mature capital markets, such as those in the United States, have maintained the confidentiality of detailed institutional investor bid data [17]. However, since the implementation of China's registration system, it has become feasible to manually acquire comprehensive IPO bid detail data, enabling us to discern the specific bidding behaviors of institutional investors. Traditional studies typically utilize

institutional investors' bid data to examine the relationship with the short-term performance of IPOs [18–20]. For IPO firms, the valuation judgments of external investors will directly influence the firm's IPO pricing and financing level, and the impact on the initial pricing may also affect the sustainability of the firm's subsequent stock price performance [21,22]. Given that different institutional investor bids encapsulate substantial information about the current status and developmental momentum of an enterprise, this paper endeavors to investigate the relationship between the diversity of institutional investor bids and the sustainability of the enterprise's IPO performance, representing a valuable and pioneering exploration in this area.

2.2. Hypotheses Development: The Causes of Diversification of Institutional Investors' Bidding Opinions

2.2.1. Miller Hypothesis: Role of the Reform of the Bookbuilding Mechanism

According to the theoretical framework provided by the Miller hypothesis, the diversity of institutional investors' bids fundamentally reflects the varying expectations of different institutional investors regarding the valuation of IPOs, with greater valuation heterogeneity leading to more pronounced bidding discrepancies [23]. However, combining the institutional experience of China's capital market, prior to the reform of the bookbuilding mechanism, the subscription behavior of optimistic institutional investors encountered significant obstacles. The reason for this is that the "high tick" ratio of the quoted price before the bookbuilding mechanism reform was not less than 10%, and institutional investors risked being "high ticked" if their quotes were too high. Consequently, they might have to resort to holding back their quoted prices to avoid exclusion [24]. Following the reform of the bookbuilding mechanism, the percentage of "high rejections" for quotes decreased to 1%, which dramatically reduced the incentives for institutional investors to collude in bidding. As a result, institutional investors became more inclined to express their true expectations of IPO valuation. Concurrently, Figure 1 illustrates the changes in the diversity of institutional investors' quotes before and after the reform of the bidding mechanism, providing initial evidence to support the hypothesis of this paper. Based on the theoretical analytical framework of Miller's hypothesis and the institutional reform of China's capital market, this paper posits Research Hypothesis H1.

H1. *There is a significant positive effect of bookbuilding mechanism on the diversification of institutional investors' opinions.*

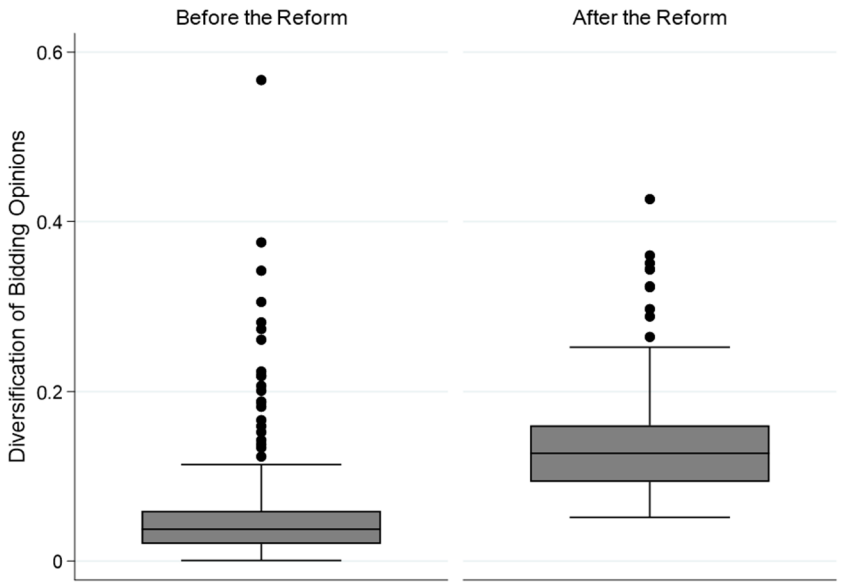


Figure 1. The change of the diversity of bidding opinions before and after the reform.

2.2.2. Asymmetric Information Theory: Role of the Firm Quality

This paper analyzes the relationship between firm quality and diversification of institutional investors' bid opinions based on asymmetric information theory. Firm quality significantly influences investors' valuation expectations. In the primary market, there is a degree of information asymmetry between institutional investors and issuers. Companies possess more comprehensive knowledge about their operations, financial status, and future prospects, whereas investors are comparatively less informed. This information asymmetry complicates investors' ability to appraise the value of stocks, and the greater the asymmetry, the higher the potential risk associated with investors' bidding for stocks, thereby increasing the likelihood of bidding discrepancies [25,26]. In China's capital market, institutional investors typically have access only to a company's financial information for the three years preceding its IPO, and a select few well-informed investors may also obtain due diligence information on the IPO company from brokerage or investment firms. When historical financial information exhibits stronger profitability and cash flow, the potential risk of investors' stock bidding is reduced, and there tends to be greater consensus among investors' bids. However, exceptions exist. For instance, while a company's R&D intensity is generally considered a positive indicator of firm quality, from the perspective of information asymmetry, a higher R&D intensity may introduce more complex information, such as patents, leading to a higher degree of information asymmetry due to professional barriers [27–29]. Furthermore, the increased R&D investment signifies greater uncertainty about the company's future performance and growth, which could also result in a wider range of opinions among institutional investors. Drawing from this analysis, the paper puts forth a pair of contrasting research hypotheses, H2a and H2b.

H2a. *Firm quality has a significant positive impact on institutional investor opinion diversification from the perspective of profitability and cash flow.*

H2b. *Firm quality has a significant negative impact on institutional investor opinion diversification from the perspective of R&D intensity.*

2.3. Hypotheses Development: Diversification of Bidding Opinions and Sustainability of IPO Performance

In this paper, IPO performance encompasses three dimensions: share price performance, accounting performance, and ESG performance. The diversity of institutional investors' bid opinions will be analyzed individually, and their correlations will be explored.

2.3.1. Diversification of Bidding Opinions and the Weakening of IPO Performance in the Medium to Long Term

From the perspective of share price performance, according to Miller's hypothesis, in the presence of short-selling restrictions and the ability of IPOs to be absorbed by a small number of investors, the diversity of bid opinions among investors can essentially function as a proxy for investor sentiment. Consequently, the stock may more closely reflect optimistic investor expectations, potentially leading to an inflated closing price for IPOs on the first day of listing [30,31]. However, over the medium to long term, the inflated stock price after listing will gradually revert to its intrinsic value. Consequently, companies with higher diversity in bid opinions may encounter more pronounced challenges in maintaining stock price performance over the medium to long term.

2.3.2. Diversification of Bidding Opinions and Post-IPO Accounting Performance Changes

Regarding the accounting performance of the company's post-IPO, IPO financing directly augments the company's cash reserves, which can be allocated to investment projects, research and development, and market expansion. This may, in the short term, increase the company's operating income and net profit. Conversely, institutional in-

vestors' bid opinions significantly influence the amount of IPO financing. A high diversity of opinions implies significant information uncertainty between the company and investors. Rational institutional investors are often hesitant to purchase new shares with high uncertainty of value at a premium price, which can lead to a lower issue price for new shares and, subsequently, a reduction in the amount of IPO fundraising. Therefore, the diversity of institutional investors' bid opinions may have a detrimental impact on accounting performance.

2.3.3. Diversification of Bidding Opinions and Firms' Post-IPO ESG Performance

According to the theory of CSR, shareholder supremacy argues that social responsibility is about trying to maximize profits or shareholder value, while stakeholderism argues that the interests of stakeholders should be taken into account at the same time in order to satisfy the economy without posing a threat to stakeholders, with the latter usually incurring higher costs than the former. From the perspective of ESG performance, when institutional investors' bid opinions are more diverse, it typically suggests that the company's short-term profitability is subpar, with a significant portion of funds being allocated to R&D expenditures. Consequently, the company may struggle more to fulfill its social responsibilities compared to companies with higher profitability, for example, companies cannot afford the disproportionate costs of fulfilling their social responsibilities, which could ultimately adversely affect the company's ESG performance. Moreover, from the perspective of IPO pricing, companies with higher diversity of opinions may struggle to raise sufficient funds, making it challenging for them to prioritize social responsibility and environmental governance. This, in turn, could have a negative impact on ESG scores.

Summarizing the above analysis, this paper proposes Research Hypothesis H3.

H3. *There is a significant negative effect of diversity of institutional investors' opinions on the sustainability of IPO performance.*

3. Research Design

3.1. Data and Variables

3.1.1. Data

This study utilizes a sample of companies listed on the Shanghai Stock Exchange's Sci-Tech Innovation Board (STAR Market) from July 2019 to December 2022. A comprehensive dataset comprising over 3.8 million bid data points for 500 IPO companies was compiled from the Wind database, with additional variables primarily sourced from the Wind and Choice databases. Table 1 offers detailed information, including names, symbols, and definitions of the variables used in the analysis. For the data required for this paper, the author meticulously compared the consistency of the public indicators across the two major databases. For a small number of missing values, the information from the two major databases complemented each other, thereby mutually corroborating the reliability of the data. In this paper, all continuous variables are rounded to 1% above and below.

Table 1. Variable description.

Name	Symbol	Symbol	Definition
Sustainability of IPO performance	Stock Price Performance	IR	(Closing price on the first day-offering price)/offering price
		IRUP	(Closing price on the first day-intrinsic value)/offering price
		BHAR_6M BHAR_1Y BHAR_2Y	The daily individual stock return plus one cumulative multiplier minus the market return plus one cumulative multiplier for the same period. In particular, the return on the first day of IPO is calculated from the 2nd trading day after listing, and the buy-hold abnormal return indicators are obtained for the 122 (6 Month), 244 (1 Year), and 488 (2 Year) trading days after listing, respectively
	Accounting performance	ROE_Delta	ROE for the year of IPO minus ROE for the 1 year prior to IPO
		ROA_Delta	ROA for the year of IPO minus ROA for the 1 year prior to IPO
		Profit_Growth	Profit for the year of the IPO divided by the profit for the 1 year prior to the IPO minus 1
		Tobin_Q	(Market value of outstanding shares + number of non-outstanding shares × net assets per share + book value of liabilities)/Total assets
	ESG performance	ESG_Score	ESG composite score, the higher the score, the stronger the company's sustainability, and vice versa
		E_Score	Environmental score in ESG, the higher the score, the better the company fulfills the environmental dimension and vice versa.
		S_Score	Social score in ESG, the higher the score, the better the company fulfills the social dimension and vice versa.
		G_Score	Governance score in ESG, the higher the score, the better the company fulfills the governance dimension and vice versa.
Diversity of Institutional Investors' bidding opinions	Diversity		Standard deviation of all bids from institutional investors/Mean of all bids from institutional investors

Note: Appendix A describes how ESG performance is specifically measured.

3.1.2. Variables

Stock Price Performance. In this paper, two methods are used to measure the short-term performance of the stock. Firstly, according to Loughran and McDonald's treatment [32], the increase or decrease between the closing price on the first day of IPO and the issue price is utilized, which is calculated as shown in Equation (1). In addition, with reference to Song's treatment [33], the measure of the increase or decrease between the intrinsic value of the IPO and the issue price is utilized, calculated as shown in Equation (2).

$$IR_i = \frac{CP_i - OP_i}{OP_i} \quad (1)$$

$$IRUP_i = \frac{IV_i - OP_i}{OP_i} \quad (2)$$

where CP represents the closing price of the stock on the first day of listing, OP represents the issue price of the stock, and IV represents the intrinsic value of the stock.

In addition, this paper uses the buy-hold abnormal return (BHAR) to measure the medium- to long-term performance of a stock's price, with larger values indicating better medium- to long-term performance and greater sustainability of the stock's price, and worse otherwise. The specific calculation is shown in Equation (3).

$$BHAR_i = \prod(1 + R_{i,t}) - \prod(1 + R_{index,t}) \quad (3)$$

We calculated buy-hold abnormal returns for 122 trading days (6 months), 244 trading days (1 year), and 488 trading days (2 years) of IPOs, using the 2nd trading day of IPOs as the time starting point.

Accounting Performance. In this paper, four indicators are selected to measure the sustainability of accounting performance, which are return on net assets, return on total assets, growth in profitability, and Tobin's Q before and after the company's IPO. When the value of the listing variable is larger, it indicates that the sustainability of accounting performance is stronger, and vice versa.

ESG Performance. We use ESG rating data disclosed in the Wind database to measure a company's ESG performance, and the time point of ESG ratings are all after a company's IPO. When a company's ESG score is higher, it indicates that the company's ESG performance is better. The specific definitions are shown in Appendix A.

Diversity of Institutional Investors' Bidding Opinions. Existing studies use the standard deviation of institutional investors' bids to measure the diversity of institutional investors' opinions but consider the comparability of different companies' stock prices [23]. We use the ratio of the standard deviation of institutional investors' bids to the mean to measure the diversity of bid opinions, and when the value is larger, it implies that institutional investors' bid opinions are more diverse.

Other Variables. In order to prevent endogeneity problems caused by the omission of important explanatory variables, this paper also selects a series of control variables, which are shown in Appendix B, along with their definitions.

3.2. Model Design

Hypothesis H1 & Hypothesis H2: The previous section on research hypotheses posits that the reform of the bookbuilding mechanism and firm quality may influence the diversity of institutional investors' bidding opinions. This paper formulates regression Equations (1) and (2) to test these hypotheses.

$$Diversity_i = \beta_0 + \beta_1 Refrom_i + \sum Controls_i + \sum Industry + \sum Year + \varepsilon_i \quad (4)$$

$$Diversity_i = \beta_0 + \beta_1 Quality_i + \sum Controls_i + \sum Industry + \sum Year + \varepsilon_i \quad (5)$$

Equations (4) and (5) examine the relationships between the reform of the bidding mechanism (Reform), firm quality (Quality), and the diversity of institutional investors' bid opinions (Diversity), respectively. It is important to note that firm quality is operationalized through three proxy variables: return on equity (ROE), firm cash flow (CashFlow), and R&D intensity (RD). Furthermore, the model incorporates underwriter reputation (UW) and venture investor support (VcBack) as control variables. Additionally, industry fixed effects (Industry) and year fixed effects (Year) are introduced to adequately control for the inherent characteristics that do not vary over time at the industry level, as well as the potential impact of common shocks, such as the macroeconomic situation, the status of monetary policy, and other factors that do not vary with the industry and firm at the time level. This paper also clusters the regression standard errors at the industry level to ensure robust statistical inference.

Hypothesis H3: To examine the relationship between the diversity of institutional investors' opinions and the sustainability of IPO performance, as hypothesized in the study, this paper constructs three sets of regression models. These models test the relationships between the diversity of opinions and the company's stock price performance (IR/IRUP/BHAR), accounting performance (ROE_Delta/ROA_Delta/Profit_Growth/Tobit_Q), and ESG performance, respectively.

$$IR_i/IRUP_i/BHAR_i = \beta_0 + \beta_1 Diversity_i + \sum Controls_i + \sum Industry + \sum Year + \varepsilon_i \quad (6)$$

$$ROE/ROA_Delta_i/Profit_Growth_i/Tobin_Q = \beta_0 + \beta_1 Diversity_i + \sum Controls_i + \sum Industry + \sum Year + \varepsilon_i \quad (7)$$

$$ESG_Score_i/E_Score_i/S_Score_i/G_Score_i = \beta_0 + \beta_1 Diversity_i + \sum Controls_i + \sum Industry + \sum Year + \varepsilon_i \quad (8)$$

In order to avoid potential endogeneity problems, Equations (6)–(8) add a series of variables that may affect the sustainability of IPO performance to the control variables selected in and Equations (4) and (5), which are presented in Appendix B. In addition, industry fixed effects (Industry) and year fixed effects (Year) are still controlled for.

3.3. Description

In order to gain a preliminary understanding of the characteristics of the core variables, descriptive statistics of the core variables are presented in this paper, and Table 2 reports the sample sizes, means, standard deviations, minimums and maximums of the variables.

Table 2. Comparison of pivotal variables.

Variable	Obs	Mean	Std. Dev.	Min	Max
IR	500	1.332	1.385	−0.331	7.310
IRUP	453	1.176	1.931	−0.799	11.554
BHAR_6M	500	−0.062	0.446	−0.708	1.722
BHAR_1Y	500	−0.078	0.511	−0.802	1.820
BHAR_2Y	391	−0.047	0.664	−0.927	2.539
ROE_Delta	498	−9.755	15.815	−68.684	41.035
ROA_Delta	498	−4.717	9.759	−39.297	30.732
Profit_Growth	495	1.628	0.474	1.051	3.284
Tobin_Q	495	0.342	1.508	−3.433	12.403
ESG_Score	498	6.473	0.631	5.270	8.230
E_Score	498	3.172	2.383	0.000	10.000
S_Score	498	4.718	1.268	1.680	8.460
G_Score	498	6.311	0.695	4.590	8.340
Diversity	493	0.079	0.070	0.003	0.345

Table 2 presents the descriptive statistics for the proxy variables used to measure the sustainability of IPO performance and the diversity of institutional investors' bid opinions. The results indicate that firms' short-term stock price performance following

IPO is robust, with first-day returns ranging from 117.6% to 133.2%. This suggests that IPO price suppression is pronounced in China's capital market, far exceeding the average range of 10% to 20% observed in the U.S. market. In contrast, the medium- to long-term performance of companies post-IPO is less favorable, with buy-and-hold abnormal returns for six months, one year, and two years post-IPO all registering negative values. Regarding accounting performance indicators, the return on net assets and return on assets for the year of IPO both experience a significant decline compared to the one-year period preceding the IPO, although there is some growth in profits. In terms of ESG performance, the mean value of the ESG composite score is 6.473, which corresponds to a BBB rating. Notably, the governance score of the company outperforms both the environmental and social scores. Table 2 also provides descriptive statistical information on the observations, means, standard deviations, minimums, and maximums of the independent and dependent variables.

4. Empirical Results

4.1. Causes of Diversification of Institutional Investors' Opinions

In order to understand the causes of diversity of bidding opinions among institutional investors, this paper uses regression analysis based on Equations (4) and (5) to test the effect of reforms, firm quality and other factors on diversity of bidding opinions.

Table 3 primarily examines the relationship between the reform of the bookbuilding mechanism, firm quality, and the diversity of institutional investors' quoted opinions. From the regression results in column (1) of Table 3, it is evident that the reform of the bookbuilding mechanism has a significant positive impact on the diversity of institutional investors' quoted opinions. Following the reform, institutional investors are more inclined to voice their assessments of a company's true value. Research Hypothesis 1 is supported. The regression outcomes in columns (2)–(4) indicate that a company's return on net assets and cash flow in the first year of listing have a significant negative influence on the diversity of institutional investors' bidding opinions, whereas R&D intensity exhibits a significant positive influence. These results suggest that when a company's historical profitability and cash flow performance are stronger, institutional investors' valuations tend to converge; conversely, when a company's historical R&D intensity is higher, the information asymmetry between the company and investors increases, leading to more diverse valuations.

Table 3. Causes of diversification of institutional investors' opinions.

	(1) Diversity	(2) Diversity	(3) Diversity	(4) Diversity	(5) Diversity
Reform	0.102 ***	0.101 ***	0.103 ***	0.100 ***	0.101 ***
	(0.004)	(0.005)	(0.004)	(0.004)	(0.005)
ROE		−0.037 ***			−0.022 **
		(0.002)			(0.005)
CashFlow			−0.022 **		−0.022 **
			(0.004)		(0.004)
RD				0.004 ***	0.003 ***
				(0.000)	(0.000)
UW	0.006 **	0.004 **	0.006 **	0.004 **	0.004 *
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
VcBack	0.001	−0.001	0.001	0.000	−0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
_cons	0.043 ***	0.053 ***	0.062 ***	0.043 ***	0.069 ***
	(0.002)	(0.002)	(0.005)	(0.002)	(0.005)
Industry_FE	Yes	Yes	Yes	Yes	Yes
Year_FE	Yes	Yes	Yes	Yes	Yes
N	493	493	493	489	489
adj. R2	0.375	0.386	0.377	0.381	0.386

Note: (1) Robust standard errors clustered to the industry level are in parentheses; (2) ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

4.2. Diversification of Bidding Opinions and Sustainability of IPO Performance

Based on the previous research design, this paper divides the sustainability of IPO performance into three parts: share price performance, accounting performance, and ESG performance. This section will report the regression results between the diversity of institutional investors' bid opinions and these three components separately.

4.2.1. Diversification of Bidding Opinions and Stock Price Performance

In order to understand the impact of diversity of bidding opinions of institutional investors on stock price performance, this paper has been tested using regression analysis based on Equation (6).

Table 4 details the relationship between the diversity of institutional investors' bid opinions and firms' stock price performance. Columns (1) and (2) present the impact of opinion diversity on the first-day returns of IPO stocks. The regression results suggest that opinion diversity has a positive effect on stock first-day returns at the 10% significance level. This finding indicates that, due to short-selling restrictions in the Chinese stock market, when institutional investors' opinions about a firm are more diverse, the stock price on the first day of listing tends to reflect the expectations of optimistic investors, leading to an increase in the first-day stock return. Columns (3)–(5) report the effect of opinion diversity on stock returns over the medium to long term. The regression results indicate that opinion diversity has a negative effect on stock medium- and long-term returns at either the 5% or 10% significance level. This suggests that as opinion diversity increases, the medium- to long-term performance of the stock price post IPO deteriorates. In the context of stock price performance, Research Hypothesis 3 is confirmed.

Table 4. Diversification of bidding opinions and stock price performance.

	(1) IR	(2) IRUP	(3) BHAR_6M	(4) BHAR_1Y	(5) BHAR_2Y
Diversity	4.011 *	2.459 *	−0.450 *	−0.117*	−0.545 **
	(1.273)	(0.855)	(0.154)	(0.050)	(0.170)
Reform	−1.934 ***	−0.472	0.085	0.054	0.149
	(0.095)	(0.261)	(0.056)	(0.066)	(0.094)
PE_Rate	−0.234 ***	−1.243 ***	0.045	0.064	0.115
	(0.023)	(0.029)	(0.037)	(0.053)	(0.063)
ROE	−1.651 **	−0.396	0.027	0.097	0.108
	(0.358)	(0.271)	(0.163)	(0.145)	(0.183)
CashFlow	0.114	0.091	−0.039	−0.066	−0.323 ***
	(0.175)	(0.410)	(0.125)	(0.072)	(0.015)
RD	2.715	1.959	0.085	0.441	−0.474
	(1.325)	(0.838)	(0.573)	(0.617)	(0.895)
FrimAge	−0.002	−0.017	−0.005 **	−0.003	−0.005
	(0.003)	(0.008)	(0.001)	(0.003)	(0.004)
Lottery	25.145 ***	−32.611 ***	−1.143	−6.416	−11.640
	(2.156)	(4.394)	(4.126)	(4.566)	(6.917)
Topone	−1.119 ***	0.807 *	−0.169	−0.144	−0.529 *
	(0.061)	(0.324)	(0.116)	(0.134)	(0.201)
VcBack	−0.141	−0.017	−0.050	−0.034	0.032
	(0.185)	(0.058)	(0.045)	(0.084)	(0.060)
Proceeds	−0.009 **	−0.010	−0.000	0.000	−0.008
	(0.002)	(0.007)	(0.003)	(0.004)	(0.007)
UW	−0.019	−0.256 *	0.047	0.083	0.167 *
	(0.054)	(0.084)	(0.036)	(0.051)	(0.059)
Lev	−0.062	−0.175	−0.032	0.060	0.430 **
	(0.137)	(0.247)	(0.086)	(0.117)	(0.114)
Size	−0.002 **	0.006 *	0.001	0.001	0.003 **
	(0.000)	(0.002)	(0.000)	(0.000)	(0.001)
_cons	1.626 *	3.377 **	0.115	0.121	0.640

Table 4. *Cont.*

	(1) IR	(2) IRUP	(3) BHAR_6M	(4) BHAR_1Y	(5) BHAR_2Y
	(0.581)	(0.702)	(0.096)	(0.140)	(0.321)
Industry_FE	Yes	Yes	Yes	Yes	Yes
Year_FE	Yes	Yes	Yes	Yes	Yes
N	431	431	431	431	344
adj. R2	0.383	0.343	0.049	0.033	0.061

Note: (1) Robust standard errors clustered to the industry level are in parentheses; (2) ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

4.2.2. Diversification of Bidding Opinions and Accounting Performance

In order to understand the impact of the diversity of bidding opinions of institutional investors on accounting performance, the paper was tested using regression analysis based on Equation (7).

Table 5 details the relationship between the diversity of institutional investors' bid opinions and firms' accounting performance. Columns (1) and (2) present the impact of opinion diversity on the pre- and post-IPO return on net assets and return on total assets value added. The regression results indicate that there is a negative effect of opinion diversity on the pre- and post-IPO return on net assets and return on total assets value added at the 1% significance level. This finding suggests that when institutional investors' opinions about a company are more diverse, the company's profitability may grow slowly or even decline after listing. Column (3) reports that there is a negative effect of opinion diversity on the growth rate of profitability of the company before and after listing at the 10% significance level. Column (4) reveals that opinion diversity has a negative effect on Tobin's Q at the 5% significance level. This suggests that firms with greater diversity of opinions among institutional investors have relatively worse post-IPO investment value. In the context of accounting performance, Research Hypothesis 3 is supported.

Table 5. Diversification of bidding opinions and accounting performance.

	(1) ROE_Delta	(2) ROA_Delta	(3) Profit_Growth	(4) Tobin_Q
Diversity	−12.347 ***	−10.090 ***	−1.513 *	−0.320 **
	(1.246)	(0.905)	(0.557)	(0.098)
Reform	−6.271 ***	−3.058	0.122	−0.381 **
	(0.946)	(1.541)	(0.055)	(0.076)
PE_Rate	0.124	0.252	0.171	0.002
	(0.279)	(0.320)	(0.078)	(0.011)
ROE	−84.388 ***	−44.511 ***	−1.277 **	0.373 ***
	(0.862)	(1.913)	(0.328)	(0.062)
CashFlow	0.510	−0.475	0.054	−0.103
	(0.788)	(0.836)	(0.081)	(0.071)
RD	−10.548 *	−5.399 *	−1.560	1.059 **
	(3.681)	(2.187)	(0.892)	(0.208)
FrimAge	−0.036	0.002	−0.018 **	−0.005 *
	(0.028)	(0.027)	(0.005)	(0.002)
Lottery	32.601	2.295	9.632	−1.293
	(27.895)	(23.643)	(8.946)	(5.144)
Topone	5.971 ***	2.478 **	−0.051	−0.448 *
	(0.161)	(0.761)	(0.382)	(0.161)
VcBack	−0.290	−0.728	0.033	−0.023
	(0.694)	(0.920)	(0.079)	(0.025)
Proceeds	0.103 **	0.108 **	0.035 ***	0.006 **

Table 5. *Cont.*

	(1) ROE_Delta	(2) ROA_Delta	(3) Profit_Growth	(4) Tobin_Q
	(0.026)	(0.028)	(0.005)	(0.002)
UW	−0.355	−0.267	−0.111 **	0.069
	(0.548)	(0.277)	(0.030)	(0.033)
Lev	1.468	14.085 ***	−0.127	−0.451 ***
	(1.458)	(2.086)	(0.327)	(0.032)
Size	−0.028 **	−0.031 ***	−0.008 **	−0.003 ***
	(0.007)	(0.005)	(0.001)	(0.000)
_cons	8.416 ***	1.433	0.445 **	2.054 ***
	(1.000)	(1.043)	(0.098)	(0.194)
Industry_FE	Yes	Yes	Yes	Yes
Year_FE	Yes	Yes	Yes	Yes
N	431	431	431	431
adj. R2	0.786	0.657	0.066	0.255

Note: (1) Robust standard errors clustered to the industry level are in parentheses; (2) ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

4.2.3. Diversification of Bidding Opinions and ESG Performance

In order to understand the impact of diversity of bidding opinions of institutional investors on ESG performance, this paper has been tested using regression analysis based on Equation (8).

Table 6 details the relationship between institutional investors' bid diversity and firms' ESG performance. Column (1) reports the effect of opinion diversity on the composite ESG score. The regression results indicate that opinion diversity has a negative effect on firms' post-IPO ESG scores at the 10% significance level. Further examining the relationship between opinion diversity and the three sub-indicators of ESG, the regression results reported in columns (2)–(4) indicate that opinion diversity has a significant negative effect on firms' post-IPO social scores at the 5% significance level, while it does not have a significant effect on environmental scores and governance scores. These findings suggest that opinion diversity may have influenced the overall ESG performance by affecting the company's post-IPO social dimension score. Consequently, Research Hypothesis 3 remains supported in terms of company ESG performance.

Table 6. Diversification of bidding opinions and ESG performance.

	(1) ESG_Score	(2) E_Score	(3) S_Score	(4) G_Score
Diversity	−0.326 *	−0.052	−1.030 **	−0.242
	(0.122)	(0.882)	(0.273)	(0.546)
Reform	0.017	0.344	−0.020	−0.117
	(0.093)	(0.680)	(0.051)	(0.082)
PE_Rate	0.028	0.176	0.113	0.010
	(0.049)	(0.128)	(0.072)	(0.036)
ROE	0.121	−1.112	0.393	0.200
	(0.113)	(0.659)	(0.401)	(0.174)
CashFlow	0.115 *	0.601 **	−0.102	0.331 **
	(0.038)	(0.177)	(0.060)	(0.090)
RD	1.774 **	−2.846 **	4.211 **	0.610 *
	(0.350)	(0.655)	(0.821)	(0.212)
FrimAge	0.003	0.027 **	−0.004 *	0.005
	(0.002)	(0.006)	(0.001)	(0.003)
Lottery	−1.475	−15.800	−12.549 ***	−1.111
	(1.392)	(8.228)	(1.994)	(3.394)

Table 6. *Cont.*

	(1) ESG_Score	(2) E_Score	(3) S_Score	(4) G_Score
Topone	−0.080	0.191	−0.109	−0.073
	(0.095)	(0.665)	(0.075)	(0.122)
VcBack	0.042	−0.230	0.166	0.058
	(0.032)	(0.190)	(0.074)	(0.055)
Proceeds	0.010 **	0.020 **	0.020 ***	0.002
	(0.002)	(0.006)	(0.003)	(0.004)
UW	−0.047	−0.160	−0.101	−0.082
	(0.041)	(0.341)	(0.063)	(0.058)
Lev	0.348 *	1.274	0.764 ***	0.245
	(0.120)	(0.904)	(0.090)	(0.196)
Size	0.002 ***	0.007 **	0.003 ***	0.002 ***
	(0.000)	(0.002)	(0.000)	(0.000)
_cons	5.883 ***	2.528 **	4.159 ***	5.753 ***
	(0.097)	(0.712)	(0.057)	(0.113)
Industry_FE	Yes	Yes	Yes	Yes
Year_FE	Yes	Yes	Yes	Yes
N	431	431	431	431
adj. R2	0.184	0.077	0.138	0.090

Note: (1) Robust standard errors clustered to the industry level are in parentheses; (2) ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

5. Further Study

5.1. Mechanism Analysis

In order to delve into the underlying mechanism governing the relationship between institutional investor bid diversity and the sustainability of IPO performance, as well as to corroborate the robustness of the findings from the benchmark regression analysis, this section investigates the role that investor sentiment and IPO over-subscription amount play in the relationship between institutional investor bid diversity and stock price performance and accounting performance.

5.1.1. Investor Sentiment Mechanism

In order to test the mechanism of institutional investors' bid opinion diversity on stock price performance, Equations (9) and (10) are constructed in this paper. In particular, Equation (9) tests the effect of opinion diversity (Diversity) on market investor sentiment (Msent) on the first day of stock listing, and Equation (10) tests the effect of opinion diversity and market investor sentiment on the buy-hold abnormal returns of a stock at 6 months, 1 year, and 2 years (BHAR_6M/BHAR_1Y/BHAR_2Y) after listing.

$$\mathrm{Msent_i} = \beta_0 + \beta_1 \mathrm{Diversity_i} + \sum \mathrm{Controls_i} + \sum \mathrm{Industry} + \sum \mathrm{Year} + \varepsilon_i \quad (9)$$

$$\begin{aligned} &\mathrm{BHAR_6M_i/BHAR_1Y_i/BHAR_2Y_i} \\ &= \beta_0 + \beta_1 \mathrm{Msent_i} + \beta_2 \mathrm{Diversity_i} + \sum \mathrm{Controls_i} + \sum \mathrm{Industry} + \sum \mathrm{Year} + \varepsilon_i \end{aligned} \quad (10)$$

It should be noted that market investor sentiment is calculated as follows: there is no standard indicator for the measurement of investor sentiment in academia, and a composite factor score is typically derived from multiple variables using principal component analysis. The key to the validity of the composite factor score lies in the selection of appropriate variables for use in principal component analysis. Drawing on the idea of Baker and Wurgler [34], the composite factor score of the investor sentiment variable (Msent) is derived from five variables: (1) the cumulative return of the Shanghai Stock Exchange (SSE) index over the last three months (daily); (2) the turnover rate of the SSE index (daily); (3) the price-to-earnings (PE) ratio of the SSE index (daily); (4) the AH stock premium index (daily); and (5) the number of new accounts opened (monthly).

The specific calculation steps for the composite factor score are as follows: (1) regression analysis of the five variables with time-variable (date) dummy variables, to eliminate the time effect of the variables, thereby avoiding the use of variables in the principal component analysis that are not smoothly trending over time, i.e., variables that exhibit an upward or downward trend over time; (2) correlation analysis of the five variables to determine their suitability for the principal component analysis; the results indicate that all five variables are significant, with correlation coefficients mostly above 0.3, suggesting they are more suitable for principal component analysis; (3) principal component analysis is conducted to predict the derivation of the first principal component, which serves as the score of the market's overall sentiment. Based on the principal component analysis, a composite market sentiment score (daily) is derived. Previous literature typically employed monthly sentiment scores.

Table 7 reports the regression results of the mechanism test. The regression results reported in column (1) show that there is a significant positive effect of opinion diversity on investor sentiment in the market on the first day of listing. This result suggests that in the Chinese capital market where short-selling restrictions exist, when investors' opinions are more diverse, stock prices reflect more optimistic investor sentiment, which is manifested by having higher returns on the first day of stock listing. Therefore, there is a significant positive relationship between opinion diversity and investor sentiment. The regression results reported in columns (2)–(4) show that there is a significant negative effect of investor sentiment on the buy-and-hold abnormal returns of stocks after listing. The possible reason for this is that overly optimistic market investor sentiment at the beginning of the IPO period makes the stock overvalued, and as a result, there is a significant downturn in the medium- and long-term performance of the stock price after the stock goes public. The results of the mechanism test reported in Table 7 support the empirical conclusions drawn from the benchmark regression section.

Table 7. Investor sentiment mechanism.

	(1) Msent	(2) BHAR_6M	(3) BHAR_1Y	(4) BHAR_2Y
Msent		−0.133 ***	−0.132 **	−0.095 *
		(0.021)	(0.028)	(0.031)
Diversity	0.855 **	−0.336	−0.005	−0.434 *
	(0.183)	(0.169)	(0.090)	(0.179)
Reform	−0.200	0.058	0.028	0.126
	(0.092)	(0.054)	(0.081)	(0.088)
PE_Rate	0.056 **	0.052	0.072	0.123
	(0.012)	(0.036)	(0.054)	(0.063)
ROE	−0.027	0.023	0.093	0.103
	(0.025)	(0.161)	(0.144)	(0.185)
CashFlow	−0.028	−0.043	−0.070	−0.330 ***
	(0.061)	(0.119)	(0.070)	(0.021)
RD	0.328	0.129	0.484	−0.441
	(0.236)	(0.561)	(0.612)	(0.888)
FrimAge	0.003	−0.005 **	−0.003	−0.005
	(0.002)	(0.001)	(0.004)	(0.004)
Lottery	−31.364 ***	−5.321	−10.549 *	−15.028
	(2.904)	(4.655)	(4.254)	(6.813)
Topone	0.034	−0.165	−0.139	−0.528 *
	(0.044)	(0.112)	(0.133)	(0.200)
VcBack	−0.048	−0.056	−0.040	0.027
	(0.033)	(0.049)	(0.087)	(0.061)
Proceeds	0.003	0.000	0.001	−0.007

Table 7. *Cont.*

	(1) Msent	(2) BHAR_6M	(3) BHAR_1Y	(4) BHAR_2Y
	(0.002)	(0.003)	(0.003)	(0.007)
UW	0.099 **	0.061	0.096	0.178 *
	(0.021)	(0.037)	(0.050)	(0.061)
Lev	0.110	−0.018	0.075	0.444 **
	(0.071)	(0.081)	(0.109)	(0.112)
Size	0.003 **	0.001 *	0.001	0.003 ***
	(0.001)	(0.000)	(0.000)	(0.001)
_cons	1.565 ***	0.323 *	0.327 *	0.802 *
	(0.218)	(0.111)	(0.120)	(0.304)
Industry_FE	Yes	Yes	Yes	Yes
Year_FE	Yes	Yes	Yes	Yes
N	431	431	431	344
adj. R2	0.557	0.058	0.039	0.061

Note: (1) Robust standard errors clustered to the industry level are in parentheses; (2) ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

5.1.2. IPO Over-Raising Mechanism

In order to test the mechanism of institutional investors' bid opinion diversity (Diversity) on accounting performance (ROE_Delta/ROA_Delta/Profit_Growth/Tobit_Q), this paper constructs Equations (11) and (12). Among them, Equation (11) tests the effect of opinion diversity (Diversity) on the IPO over-quotation ratio (Diversity) on the first day of stock listing, and Equation (12) tests the effect of IPO over-quotation ratio on a series of accounting performance indicators.

$$\text{Overfund}_i = \beta_0 + \beta_1 \text{Diversity}_i + \sum \text{Controls}_i + \sum \text{Industry} + \sum \text{Year} + \varepsilon_i \quad (11)$$

$$\begin{aligned} &\text{ROE/ROA_Delta}_i/\text{Profit_Growth}_i/\text{Tobin_Q} \\ &= \beta_0 + \beta_1 \text{Overfund}_i + \beta_2 \text{Diversity}_i + \sum \text{Controls}_i + \sum \text{Industry} + \sum \text{Year} + \varepsilon_i \end{aligned} \quad (12)$$

Table 8 reports the regression results of the mechanism test. From the regression results reported in column (1), it is clear that there is a significant negative effect of opinion diversity on IPO overshooting ratio. From the regression results reported in columns (2)–(4), it is clear that there is a significant positive effect of IPO overfunding ratio on accounting performance. The possible reason for this is that the over-raised funds can provide more financial strength to the firm, which will help the firm to expand, develop new products, enter new markets, purchase assets or make other casts that may increase the value of the firm, which will be beneficial to the growth of the firm's accounting performance. The results of the mechanism test reported in Table 8 support the empirical conclusions drawn from the benchmark regression section.

Table 8. IPO over-raising mechanism.

	(1) Overfund	(2) ROE_Delta	(3) ROA_Delta	(4) Tobin_Q	(5) Profit_Growth
Overfund		1.446 **	0.639 *	0.449 ***	0.113 ***
		(0.433)	(0.281)	(0.040)	(0.007)
Diversity	−2.431 ***	−8.833 **	−8.536 ***	−0.422	−0.045
	(0.178)	(1.777)	(0.757)	(0.536)	(0.106)
Reform	0.560 ***	−7.080 ***	−3.416 *	−0.129	−0.444 **
	(0.030)	(0.724)	(1.434)	(0.082)	(0.079)
PE_Rate	0.048 ***	0.055	0.221	0.150	−0.004
	(0.005)	(0.305)	(0.334)	(0.082)	(0.011)
ROE	0.727 **	−85.438 ***	−44.976 ***	−1.603 **	0.291 **
	(0.125)	(0.970)	(2.028)	(0.326)	(0.057)

Table 8. *Cont.*

	(1) Overfund	(2) ROE_Delta	(3) ROA_Delta	(4) Tobin_Q	(5) Profit_Growth
CashFlow	−0.091	0.643	−0.417	0.095	−0.093
	(0.066)	(0.765)	(0.825)	(0.071)	(0.064)
RD	−0.119	−10.376 *	−5.323 *	−1.507	1.073 **
	(0.134)	(3.569)	(2.156)	(0.855)	(0.222)
FrimAge	−0.002	−0.033	0.003	−0.017 *	−0.005
	(0.001)	(0.029)	(0.027)	(0.006)	(0.002)
Lottery	−2.598	36.357	3.956	10.798	−0.999
	(1.722)	(24.473)	(22.014)	(8.091)	(4.958)
Topone	−0.091	6.103 ***	2.536 *	−0.010	−0.438 *
	(0.106)	(0.101)	(0.804)	(0.360)	(0.149)
VcBack	0.023	−0.323	−0.742	0.023	−0.026
	(0.024)	(0.684)	(0.919)	(0.074)	(0.022)
Proceeds	0.013 ***	0.084 *	0.100 **	0.029 **	0.005 *
	(0.000)	(0.031)	(0.030)	(0.005)	(0.002)
UW	−0.079 **	−0.240	−0.216	−0.075 *	0.078 *
	(0.017)	(0.496)	(0.250)	(0.025)	(0.033)
Lev	−0.076	1.577	14.134 ***	−0.093	−0.442 ***
	(0.038)	(1.435)	(2.080)	(0.314)	(0.036)
Size	−0.002 ***	−0.025 **	−0.030 **	−0.007 **	−0.003 ***
	(0.000)	(0.007)	(0.006)	(0.001)	(0.000)
_cons	−0.015	8.438 ***	1.442	0.452 **	2.056 ***
	(0.066)	(1.063)	(1.077)	(0.110)	(0.200)
Industry_FE	Yes	Yes	Yes	Yes	Yes
Year_FE	Yes	Yes	Yes	Yes	Yes
N	431	431	431	431	431
adj. R2	0.386	0.788	0.658	0.084	0.262

Note: (1) Robust standard errors clustered to the industry level are in parentheses; (2) ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

5.2. Robustness Test

5.2.1. Replacement of the Dependent Variable

The results of this paper depend mainly on the measures of the core variables. Therefore, in order to strengthen the credibility of the results of this paper, the measures of the main variables are replaced in this paper.

From the regression results reported in Table 9, it can be seen that there is a significant positive effect of diversity of institutional investors' bid opinions on adjusted first-day returns at the 10% significance level, and the previous empirical results are robust. From the regression results reported in columns (4)–(6), it is clear that there is a significant negative effect of diversity of opinions on adjusted stock performance in the medium and long term at either the 5% or 10% significance level. The previous empirical results remain robust.

Table 9. Replace the dependent variable.

	(1) Dev_IR	(2) Adj_IR	(3) Adj_IRUP	(4) Adj_BHAR_6M	(5) Adj_BHAR_1Y	(6) Adj_BHAR_2Y
Diversity	3.464 *	4.002 *	1.060 *	−0.436 *	−0.154 *	−0.660 **
	(1.285)	(1.279)	(0.393)	(0.170)	(0.062)	(0.159)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry_FE	Yes	Yes	Yes	Yes	Yes	Yes
Year_FE	Yes	Yes	Yes	Yes	Yes	Yes
N	431	431	429	431	431	344
adj. R^2	0.372	0.384	0.416	0.029	0.008	0.066

Note: (1) Robust standard errors clustered to the industry level are in parentheses; (2) **, and * denote 5%, and 10% significance levels, respectively.

5.2.2. Replacement of the Independent Variable

In this paper, we replace the measure of the core independent variable and use the standard deviation of institutional investors' bidding opinions to measure the diversity of quoted opinions. The regression results reported in Table 10 show that the empirical results

remain robust after replacing the core independent variables. Institutional investors' bidding opinions still have a significant negative impact on stock price performance, accounting performance, and ESG performance, which indicates that the diversity of institutional investors' bidding opinions has a significant negative impact on IPO performance.

Table 10. Replace the independent variable.

	(1) BHAR_6M	(2) BHAR_1Y	(3) BHAR_2Y	(4) ROE_Delta	(5) ROA_Delta	(6) Tobin_Q	(7) Profit_Growth	(8) ESG_Score	(9) S_Score
Adj_Diversity	0.009 *	−0.002 *	−0.006 *	−0.247 **	−0.346 ***	−0.008 *	−0.019 ***	−0.020 **	−0.037 **
	(0.005)	(0.001)	(0.003)	(0.045)	(0.046)	(0.004)	(0.002)	(0.006)	(0.007)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry_FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year_FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	431	431	344	431	431	431	431	431	431
adj. R^2	0.051	0.032	0.056	0.694	0.585	0.248	0.054	0.188	0.140

Note: (1) Robust standard errors clustered to the industry level are in parentheses; (2) ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

5.2.3. Replacement Time Fixed Effect

Considering that the variable reforms in the control variables are placed in the same regression equation as the year fixed effects, it may result in an unrobust regression result. At the same time, in order to avoid the influence of other time trends on the empirical results, in this paper, the year fixed effects are replaced with quarterly fixed effects, and the empirical results remain robust after re-regression. The regression results are shown in Table 11.

Table 11. Replace time fixed effect.

	(1) BHAR_6M	(2) BHAR_1Y	(3) BHAR_2Y	(4) ROE_Delta	(5) ROA_Delta	(6) Tobin_Q	(7) Profit_Growth	(8) ESG_Score	(9) S_Score
Diversity	−0.675 **	−0.145 *	−0.715 *	−12.093 ***	−9.507 ***	−0.487 **	−2.120 **	−0.687 *	−2.073 ***
	(0.204)	(0.080)	(0.315)	(1.265)	(1.090)	(0.118)	(0.447)	(0.368)	(0.314)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry_FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter_FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	431	431	344	431	431	431	431	431	431
adj. R^2	0.081	0.040	0.045	0.690	0.578	0.257	0.047	0.185	0.149

Note: (1) Robust standard errors clustered to the industry level are in parentheses; (2) ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

6. Discussion

This study makes two key contributions to the literature. Firstly, to the best of our knowledge, this paper offers the first empirical evidence of the impact of institutional investor bid diversity on the sustainability of IPO performance, especially in terms of the relationship between a firm's post-IPO accounting performance and its ESG performance. Although the influence of institutional investors' bidding behavior on the short-term performance of IPOs has been the subject of extensive research [23,26], the investigation of its implications for the sustainability of firms' post-IPO performance is still in its nascent stages. Miller's research found that when there is more diversity of investor opinions, the more optimistic investor sentiment is reflected in the market in the presence of short-selling restrictions, which is manifested as high stock prices [26]. The Gao et al. study also confirms Miller's point [23]. However, their research focuses more on IPO pricing and does not relate the diversity of investor opinions to the medium- and long-term performance of stocks after listing. When Ritter and other scholars paid attention to the long-term decline of stock prices, they found that a major reason for the poor sustainability of stock prices after listing was the high closing price on the first day of listing. Our study links the two bodies of literature and confirms their research.

Secondly, this paper aims to measure the sustainability of IPO performance by integrating stock price performance, accounting performance, and ESG performance—a unique approach that incorporates the financial concept of "mid- to long-term IPO downturn" and the accounting concept of "accounting performance deterioration" into the assessment of IPO performance sustainability [35]. This represents a valuable and pioneering attempt in the field. As Chowdhury mentioned, corporate sustainability includes success in terms of both business goals and environmental sustainability goals [2]. At present, many scholars focus more on the goal of environmental sustainability when studying the topic of corporate sustainability [3,4]. However, for populous emerging market countries such as India, the success of corporate economic goals may be even more necessary at this time. Therefore, when referring to the proposition of sustainable development of enterprises, we combined with the actual situation of China's capital market, and considered both economic and environmental sustainability goals. We took this into account when setting the independent variables, and our philosophy is consistent with Chowdhury's research.

7. Conclusions

7.1. Research Conclusions

This paper delves into the relationship between the diversity of institutional investors' bidding opinions and the sustainability of IPO performance, leveraging a unique dataset of 3.8 million IPO bid records from the Chinese capital market.

The findings indicate that the diversity of institutional investors' bidding opinions has a significant negative impact on the sustainability of IPO performance. Increased bid diversity leads to a significant reduction in the medium- and long-term post-IPO performance, accounting performance, and ESG performance of stocks. Specifically, when each unit increases in the diversity of bidding opinions, the share price performance in the 6-month, 1-year and 2-year period after listing is divided into a decrease of 0.450, 0.117 and 0.545 units, ROE and ROA in the year of listing are decreased by 12.347 and 10.090 units, respectively, earnings growth is decreased by 1.513 units, and Tobin's Q value is decreased by 0.320 units, respectively, when comparing with the year prior to the listing. In terms of ESG performance, the E-score decreased by 1.030 units and the ESG composite score decreased by 0.326 units.

Mechanism tests reveal that the increase in bid diversity significantly amplifies market investor sentiment on the first day of the stock's IPO. When each unit increase in the diversity of bidding opinions increases by 0.855 units, the market investor score on the first day of listing increases by 0.855 units, which directly pushes up the closing price of the IPO on the first day of listing, aligning with the expectations of Miller's hypothesis. Additionally, the excessive closing price on the first day depletes the sustainability of the firm's stock price performance and has a significant negative impact on the medium- to long-term performance of the firm's stock price, suggesting that the diversity of institutional investors' opinions may exacerbate the problem of the stock's downturn in the medium to long term.

Moreover, the paper finds that an increase in opinion diversity significantly diminishes the amount of capital raised in IPOs, indicating that IPO firms with more divergent opinions may face lower issue prices for new shares, potentially leading to a reduced enthusiasm among investors for subscribing to new shares. The reduced capital raised can affect the firm's operations due to financing constraints, leading to poorer accounting performance post-IPO and a more pronounced deterioration in accounting performance. Finally, with regard to the relationship between opinion diversity and ESG performance, opinion diversity primarily impacts the overall ESG score by reducing the company's social score.

7.2. Future Research Directions

First, the concept of corporate sustainability should not be confined to listed companies with established operations in the secondary market. It should also extend to recently

listed IPO companies. Furthermore, research should not be restricted to the study of listed companies due to factors such as data accessibility. Instead, it should also give greater consideration to the sustainable development of non-listed companies. After all, in China and many emerging market countries, the number of unlisted companies significantly outweighs that of listed companies. Moreover, listed companies are, in general, more successful enterprises, and from a sustainable development perspective, non-listed companies may require greater attention and focus.

Secondly, as highlighted in the literature, such as that of Chowdhury, corporate sustainability necessitates both economic and environmental dimensions. However, recent studies have disproportionately emphasized environmental sustainability. While environmental considerations are undoubtedly crucial, economic sustainability is equally important in many emerging market contexts where firms grapple with severe production challenges. Subsequent research could account for the unique realities of each country and region and consider the construction of comprehensive indicators that balance economic and environmental factors.

Third, in the examination of external factors influencing corporate sustainable development, scholars have predominantly focused on the impact of institutional shocks. Relatively less attention has been given to exploring the relationship between the behavior of external micro-entities and corporate sustainable development. In the future, there is potential to delve deeper into this area, using precise and detailed data to observe the impact and the mechanism of action of external micro-entities on the sustainable development of companies.

Author Contributions: Conceptualization, A.L. and A.C.; methodology, A.C.; software, A.C.; validation, X.L., J.L. and A.C.; formal analysis, A.C.; investigation, A.L.; resources, A.C.; data curation, A.L.; writing—original draft preparation, A.C.; writing—review and editing, A.L.; visualization, A.C.; supervision, X.L.; project administration, J.L.; funding acquisition, X.L. and A.C. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Open Fund of Sichuan Province Cyclic Economy Research Center, grant number No. XHJJ-2217, Chongqing Graduate Student Research and Innovation Program, grant number No. Szr19327 (Funder: Chongqing Education Commission), and Central University of Finance and Economics Science and Education Integration Graduate Student Academic Rising Star Incubation Program, grant number No. 202221. (Funder: Central University of Finance and Economics).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data available on request due to restrictions. The data presented in this study are available on request from the corresponding author. The data are not publicly available due to fact they are obtained from a third party.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A. Explanation of ESG Performance

ESG Rating	ESG Composite Score	ESG Rating Implications
AAA	[9, 10]	High level of corporate governance, low ESG risk, strong sustainability
AA	[8, 9]	High level of corporate management, low ESG risk, strong sustainability
A	[8, 9]	Higher level of corporate management, lower ESG risk, stronger sustainability
BBB	[6, 7]	Average corporate management, average ESG risk, average sustainable development capability
BB	[5, 6]	Lower level of corporate management, higher ESG risk, weaker sustainability
B	[4, 5]	Low level of corporate management, high ESG risk, weak sustainability
CCC	[0, 4)	Low level of corporate management, high ESG risk, weak sustainability

Appendix B. Other Variables Description

Name	Symbol	Definition
Bookbuilding Mechanism Reform	Reform	IPO companies listed before the bookbuilding mechanism reform are assigned a value of 0, while those listed after the reform are assigned a value of 1
Relative P/E ratio	PE_Rate	IPO P/E ratio over the average of the P/E ratios of comparable companies in the previous prospectus
Return on Equity	ROE	Return on equity of the company in the year before listing
Cash Flow Situation	CashFlow	Cash received from sale of goods and provision of services/operating income in the year prior to the listing of the company
R&D Intensity	RD	R&D investment/revenue in the year before the company's listing
Company Age	FrimAge	The difference in years between the company's listing date and its founding date. Round to the nearest whole year, taking 0 for less than half a year and 1 for more than half a year.
Retail Subscription Success rate	Lottery	The ratio of the number of shares issued to the number of shares effectively subscribed (Unit: %).
Major Shareholder Ownership Percentage	Topone	The proportion of shares held by the largest shareholder in terms of ownership percentage at the time of listing, as a percentage of the total share capital of the company.
Net Funds Raised	Proceeds	Net fundraising amount during the IPO process (Unit: 100 million Yuan).
Asset-liability Ratio	Lev	The total debt amount of the company in the year before going public divided by the total asset amount.
Company Size	Size	The total asset amount for the year before the company goes public (Unit: 100 million CNY).
Venture Capital Support	VcBack	A company that has received venture capital or private equity support and is valued as part of an IPO process is assigned a value of 1, otherwise, it is assigned a value of 0.
Underwriter Reputation	UW	Companies that rank in the top 10 for net investment banking revenue in the year before going public are assigned a value of 1; otherwise, they are assigned a value of 0.
Industry Dummy Variable	Industry	Setting dummy variables according to the China Securities Regulatory Commission (CSRC) industry classification in 2012.
Year Dummy Variable	Year	Set up dummy variables based on the belonging year

References

1. Jamal, T.; Zahid, M.; Martins, J.M.; Mata, M.N.; Rahman, H.U.; Mata, P.N. Perceived green human resource management practices and corporate sustainability: Multigroup analysis and major industries perspectives. *Sustainability* **2021**, *13*, 3045. [CrossRef]
2. Chowdhury, S.; Dey, P.K.; Rodríguez-Espíndola, O.; Parkes, G.; Tuyet, N.T.A.; Long, D.D.; Ha, T.P. Impact of organizational factors on the circular economy practices and sustainable performance of small and medium-sized enterprises in Vietnam. *J. Bus. Res.* **2022**, *147*, 362–378. [CrossRef]
3. Zhou, S.; Rashid, M.H.U.; Mohd Zobair, S.A.; Sobhani, F.A.; Siddik, A.B. Does ESG impact firms' sustainability performance? The mediating effect of innovation performance. *Sustainability* **2023**, *15*, 5586. [CrossRef]
4. Daugaard, D.; Ding, A. Global drivers for ESG performance: The body of knowledge. *Sustainability* **2022**, *14*, 2322. [CrossRef]
5. Yoon, B.; Lee, J.H.; Byun, R. Does ESG performance enhance firm value? Evidence from Korea. *Sustainability* **2018**, *10*, 3635. [CrossRef]
6. Ferri, S.; Tron, A.; Colantoni, F.; Savio, R. Sustainability Disclosure and IPO Performance: Exploring the Impact of ESG Reporting. *Sustainability* **2023**, *15*, 5144. [CrossRef]
7. Labuschagne, C.; Brent, A.C.; Van Erck, R.P. Assessing the sustainability performances of industries. *J. Clean. Prod.* **2005**, *13*, 373–385. [CrossRef]
8. Sarkis, J.; Cordeiro, J.J. An empirical evaluation of environmental efficiencies and firm performance: Pollution prevention versus end-of-pipe practice. *Eur. J. Oper. Res.* **2001**, *135*, 102–113. [CrossRef]
9. Beaver, W.; Lambert, R.; Morse, D. The information content of security prices. *J. Accou. Econ.* **1980**, *2*, 3–28. [CrossRef]
10. Dissanayake, D.; Tilt, C.; Xydias-Lobo, M. Sustainability reporting by publicly listed companies in Sri Lanka. *J. Clean. Prod.* **2016**, *129*, 169–182. [CrossRef]
11. Anyigbah, E.; Kong, Y.; Edziah, B.K.; Ahoto, A.T.; Ahiaku, W.S. Board characteristics and corporate sustainability reporting: Evidence from Chinese listed companies. *Sustainability* **2023**, *15*, 3553. [CrossRef]
12. Hu, M.; Loh, L. Board governance and sustainability disclosure: A cross-sectional study of Singapore-listed companies. *Sustainability* **2018**, *10*, 2578. [CrossRef]
13. Ritter, J.R. The long-run performance of initial public offerings. *J. Financ.* **1991**, *46*, 3–27.
14. Steurer, R.; Langer, M.E.; Konrad, A.; Martinuzzi, A. Corporations, stakeholders and sustainable development I: A theoretical exploration of business–Society relations. *J. Bus. Ethics* **2005**, *61*, 263–281. [CrossRef]

15. Siva, V.; Gremyr, I.; Bergquist, B.; Garvare, R.; Zobel, T.; Isaksson, R. The support of Quality Management to sustainable development: A literature review. *J. Clean. Prod.* **2016**, *138*, 148–157. [CrossRef]
16. Rosamartina, S.; Giustina, S.; Angeloantonio, R. Digital reputation and firm performance: The moderating role of firm orientation towards sustainable development goals (SDGs). *J. Bus. Res.* **2022**, *152*, 315–325. [CrossRef]
17. Ljungqvist, A. IPO underpricing. In *Handbook of Empirical Corporate Finance*; Eckbo, E., Ed.; Elsevier: Amsterdam, The Netherlands, 2007; Volume 1, pp. 375–422.
18. Güçbilmez, U.; Briain, T.Ó. Bidding styles of institutional investors in IPO auctions. *J. Financ. Market.* **2021**, *53*, 100579. [CrossRef]
19. Gao, S.; Meng, Q.; Chan, J.Y.; Chan, K.C. Cognitive reference points, institutional investors' bid prices, and IPO pricing: Evidence from IPO auctions in China. *J. Financ. Market.* **2018**, *38*, 124–140. [CrossRef]
20. Chi, Y.; He, J.; Ma, X.; Wu, F. Institutional investor inattention bias in auctioned IPOs. *J. Bank. Financ.* **2023**, *150*, 106831. [CrossRef]
21. Chan, K.; Wang, J.; Wei, K.J. Underpricing and long-term performance of IPOs in China. *J. Corp. Financ.* **2004**, *10*, 409–430. [CrossRef]
22. Chambers, D.; Dimson, E. IPO underpricing over the very long run. *J. Financ.* **2009**, *64*, 1407–1443. [CrossRef]
23. Gao, S.; Brockman, P.; Meng, Q.; Yan, X. Differences of opinion, institutional bids, and IPO underpricing. *J. Corp. Financ.* **2020**, *60*, 101540. [CrossRef]
24. Wu, D.; Cheng, X.; Chan, K.C.; Gao, S. Unintended Consequence of High Bid Price Exclusion in IPO Auctions: Evidence from China. 2024. *preprint*. Available online: https://doi.org/10.2139/ssrn.4709846 (accessed on 20 May 2024).
25. Gim, J.; Jang, S.S.; Tang, H.; Choi, K.; Behnke, C. Is information asymmetry always detrimental to firm value? Findings from the restaurant industry. *Inter. J. Hosp. Manag.* **2023**, *111*, 103481. [CrossRef]
26. Miller, E.M. Risk, uncertainty, and divergence of opinion. *J. Financ.* **1977**, *32*, 1151–1168. [CrossRef]
27. Baruffaldi, S.; Simeth, M.; Wehrheim, D. Asymmetric information and R&D disclosure: Evidence from scientific publications. *Manag. Sci.* **2024**, *70*, 1052–1069.
28. Jeon, S.I.; Kim, J.E. The role of R&D on the valuation of IPO firms. *J. Inter. Bus. Res.* **2011**, *10*, 39–58.
29. Cho, J.; Lee, J. The venture capital certification role in R&D: Evidence from IPO underpricing in Korea. *Pac-Basin. Financ. J.* **2013**, *23*, 83–108.
30. Houge, T.; Loughran, T.; Suchanek, G.; Yan, X. Divergence of opinion, uncertainty, and the quality of initial public offerings. *Financ. Manag.* **2001**, *30*, 5–23. [CrossRef]
31. Cornelli, F.; Goldreich, D. Bookbuilding: How informative is the order book? *J. Financ.* **2003**, *58*, 1415–1443. [CrossRef]
32. Loughran, T.; McDonald, B. IPO first-day returns, offer price revisions, volatility, and form S-1 language. *J. Financ. Econ.* **2013**, *109*, 307–326. [CrossRef]
33. Song, S.; Tan, J.; Yi, Y. IPO initial returns in China: Underpricing or overvaluation? *China J. Accou. Res.* **2014**, *7*, 31–49. [CrossRef]
34. Baker, M.; Wurgler, J. Investor sentiment and the cross-section of stock returns. *J. Financ.* **2006**, *61*, 1645–1680. [CrossRef]
35. Wang, Y.; Wang, G. IPO underpricing and long-term performance in China: The perspective of price limit policy. *Manag. Financ.* **2021**, *47*, 1233–1252. [CrossRef]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.