

# IPO Listing Review and Corporate Tax Avoidance: Evidence from the Sci-Tech Innovation Board in China<sup>\*</sup>

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## Abstract

IPO listing review via comment letters is an important mechanism to improve the quality of listed firms, while its impact on corporate post-listing behaviors is not clear. Using China's Sci-Tech Innovation Board (STAR market) listed firms, this paper examines the impact of IPO listing review on corporate post-listing tax avoidance behavior. The empirical tests show that the increase of listing review intensity is significantly associated with lower corporate tax avoidance activities of firms after listing. Using textual analysis methods and mediating analysis, this study finds that the decrease effect of listing review on corporate tax avoidance activities is mainly associated with comment letter questions that monitor the characteristics of R&D activities and compliance with operations and information disclosure. The empirical findings support the "Bonding Hypothesis" about the IPO listing review. Further research shows that for non-state-owned firms, firms with low institutional investors shareholding, and firms listed through profitability-related listing criteria, their post-listing tax avoidance activities are more affected by the listing review intensity. Overall, the empirical findings of this study empirically support to the claim that the interactions between stock exchange and equity issuing firms via comment letters during the IPO process play a significant role in monitoring corporate post-listing behavior. This study helps to reveal the actual effect and strong transmission between the exchange-led IPO listing review and corporate post-listing behaviors, and expands research findings on tax avoidance as well as the effectiveness of IPO comment letters.

**Keywords:** comment letters, corporate tax avoidance, IPO listing review; textual analysis, continuous difference in difference model

**JEL Classification:** B23, C51

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# 1. Introduction

Actual literature shows that to establish a high-quality capital market, it is necessary to improve the information disclosure quality of listed firms, strengthen the responsibilities of intermediaries, and promote the compliance of listed firms (Garg, 2018; Johnston and Petacchi, 2017). To monitor and enhance the quantity and quality of information available to investors, and to protect investors' interests, security regulators worldwide often review corporate filings to ensure compliance with financial reporting and disclosure requirements. A key part of this review process is to issue comment letters to subject firms inquiring for additional information and clarifications<sup>1</sup>. Research suggests that comment letters issued by regulators during the IPO process can have a significant effect on the reactions of investors. For example, using the sample of IPO firms in the US, Li and Liu (2017) and Lowry et al. (2020) examined changes in IPO pricing following the issuance of comment letters during IPO filing and found out that IPO price decreases following the issuance of comment letters.

However, the effect of IPO review on corporate behavior after listing is still not clear. The recently launched registration-based IPO system (RIS) reform in China imposes a mandatory review process that requires all equity issuers to be reviewed by the stock exchange listing committee via comment letters. More importantly, unlike the US capital markets, information about the entire IPO review process, including all interactions between the stock exchange and firms before the successful filing of IPOs, are publicly available on the stock exchange in real-time<sup>2</sup>. As a result, the publicly disclosed comment letters might not only help to improve the quantity and quality of information that are relevant to investors, but also provide bonding effects on issuers, which is the information users might use from the very detailed publicly disclosed comment letter response to better monitor corporate behavior after listing, and furthermore significantly increase issuers' regulatory pressure and potential legal risk.

Therefore, China's unique IPO reviewing procedure can be used as research setting to test the real effects of the listing review mechanism on post-listing corporate behavior and help to reveal relevant transmission mechanisms. We use China's first batch of firms listed on the STAR market under the RIS as the research sample and explore whether the IPO review mechanism can effectively supervise and control future corporate tax avoidance behavior.

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1 Comment letters are often perceived by capital markets as a nonpunitive regulatory approach (Cunningham and Leidner, 2022).

2 All response letters to the exchange-issued comment letters of the STAR board enterprises are publicly disclosed on the official website of the STAR board (<http://kcb.sse.com.cn/disclosure>).

Our research makes the following contributions to the current literature. First, our research directly examines the real effect of the exchange-led IPO listing review on the future corporate behavior in China. China's RIS setting offers a unique situation in that all the questions and responses associated with comment letters issued by the regulator to a firm are instantly released to all capital market participants in a timely manner, which allows us to directly examine the real effects of IPO comment letters, enriching the relevant research literature. Second, the findings of this study shed light on our understanding of the function and role of comment letters in Chinese capital markets especially during the IPO process. By using textual analysis methods to categorize review contents into different categories and explore the influence mechanisms of listing review on corporate tax avoidance behavior, this study broadens our knowledge of whether and how the effect of comment letters may vary across different contents. Third, by focusing on unique features from the IPO review stage, this study expands the research on the determinant factors of tax avoidance behavior from a new perspective, which enriches relevant research on external market-based governance mechanism of corporate tax avoidance behavior. Finally, we examine the interaction between the exchange-led listing review mechanism under the RIS and other external corporate governance mechanisms, which provides the empirical evidence to optimize the IPO review mechanism under China's ongoing RIS reform.

Our research examines the intensity of the regulatory review during the IPO process by the rounds of the comments led by the stock exchange and focuses on the sample of firms listed on China's STAR Board since its inception in 2019. Our empirical findings show that the IPO listing review intensity via comment letters significantly inhibits future corporate tax avoidance behavior. The higher the intensity of review received during the IPO process, the lower the degree of corporate tax avoidance after the listing, which indicates that the high intensity of IPO listing review can inhibit the motivation of corporate tax avoidance behavior.

We further inspect the mechanisms of this effect. First, we find that the inhibitory effect of listing review on the corporate tax avoidance is mainly achieved by monitoring characteristics of R&D activities and compliance of operation and information disclosure. Cross-sectional heterogeneity tests show that the IPO listing review intensity has a more significant effect in non-state-owned firms, firms with low institutional shareholding, and firms listed through profitability-related listing criteria. Our empirical results still hold after various robustness tests.

## 2. Institutional Background and Literature Review

In 2019, China began to pilot the registration-based IPO system (RIS) on the Shanghai Stock Exchange's Sci-Tech innovation board (STAR Market). The goal of the RIS reform is to highlight the responsibilities of both listed firms and investors, so that the government's regulatory bodies will interfere less in the IPO process, and instead promote the market power to play a decisive role in resource allocation. Differently from China's previous IPO approval system, under the RIS, the right to review the issuer's listing is transferred from the China Securities Regulatory Commission (CSRC) to the stock exchange. The listing committee established by the stock exchange is responsible for conducting the IPO listing review of the issuers. The IPO listing review activity is mainly performed by sending IPO comment letters to issuers, with an aim to verify whether the issuers have met the fundamental conditions for issuance registration and to enhance the quality of information disclosure of the issuer. The exchange-led listing review in the issuance process puts more focus on the integrity, authenticity, and comparability of the information disclosed during the issuance process, which is believed to improve the information environment during IPO. Under the RIS, as long as the issuers meet the listing criteria, and prospectus materials provided by the issuer are not false, misleading or containing major omissions, the listing reviewing committee will not refuse the corporate listing registration request.

RIS reform is believed not only to help increase the transparency of the IPO market, but also to strengthen the responsibilities of investors and issuers, and allow market pricing mechanisms to function. The exchange-led IPO listing review mechanism does not make any substantive judgment on the value of the enterprise, but instead focuses on promoting full disclosure of value-related information to all stakeholders, and investors themselves are responsible for judging enterprise value and making investment decisions accordingly.

In contrast, China's previous IPO approval system required relevant securities regulators (mainly the CSRC) to conduct a formal review of the information disclosed by issuers, as well as provide pricing guidance. Under the IPO approval system, all information in the IPO listing review stage is only used for approval by the government securities regulatory agency, which is not open to the market; therefore investors can only obtain limited information from the listing prospectus and their investment decision is largely dependent on "Government endorsement effect" (Jones et al., 1999). Hence, the IPO approval system is a mechanism that advocates regulators' prior control (Warren, 1987).

After the implementation of the RIS, the stock exchange can use comment letters to conduct multiple rounds of review and make inquiries related to the issuance application materials, and

require the issuer as well as IPO intermediary agencies to make truthful and complete responses to the comment letter questions. The financial intermediaries are required to support the issuers to verify the answers within the scope of their responsibility. Exchange-led IPO listing review agency will not make interpretation of the content of issuers' replies. Instead, the contents of the comment letters responses, which are in the form of "one question and one answer" file, are made public to all information users on the exchange's website.

Differently from comment letters on periodical financial reports and on merger and acquisition activities, IPO reviewing comment letter under the RIS is not a regulatory punitive (or nonpunitive) measure but is a mechanism aimed to improve information disclosure. The stock exchange may send comment letters with questions on various aspects, for example, on information about the corporate business model, ownership structure, corporate governance issues, potential risk factors, compliance with operations, etc.

It is worth noting that under China's IPO registration system, listing review information via comment letters is disclosed to external information users along with the reviewing process, and the contents of the comment letters are disclosed publicly. We believe that it can not only provide investors with more sensitive information about the issuer, but also when the disclosed information is publicly verified, it can increase the external monitoring pressure on the issuer. Therefore, it might have influence on the future behavior of the issuer itself.

Major securities markets have established comment letter mechanisms as a nonpunitive supervision approach to monitor listed firms' behavior. Existing studies on comment letters mostly focus on comment letters on periodic financial statements, as well as on M&As issued by the SEC. Research is mostly related to the analysis of the determinants of receiving comment letters and its economic consequences. Existing literature has shown that the possibility of receiving a comment letter is closely related to the quality of internal control as well as corporate internal governance (Ettredge et al., 2011), business complexity and business profit volatility (Cassell et al., 2013), operating scalability and firm longevity, the quality of the corporate financial information and the quality of external auditing (Johnston and Petacchi, 2017). When a firm's financial restatement increases and non-Big Four accounting firms are hired to audit financial statements, the firm may receive a comment letter (Boone et al., 2013). When a firm has political connections, the possibility of the firm receiving a comment letter also increases (Heese et al., 2017).

Large amount of research has analyzed the economic consequences of receiving comment letters. The empirical findings show that the comment letter is regarded as an effective nonpunitive regulatory measure, and business behavior of listed firms changes after receiving a financial

report comment letter. After firms receive a comment letter, the degree of information disclosure of listed firms increases (Bozanic et al., 2017), and the forecast accuracy of analysts on the firm improves (Johnston and Petacchi, 2017). However, there are also negative impacts on the firm. Comment letters may be viewed by market participants as a symbol of potential risk; when a listed firm receives a comment letter, institutional investors will treat this event as a signal of increased unknown risk, thereby reducing their investment into the firm (Gietzmann and Isidro, 2013). At the same time, the firms receiving comment letters spend considerable time and energy on the response to the comment letter, which increases the corporate opportunity cost (Cassell et al., 2013). Receiving a comment letter by a listed firm will increase the probability of abnormal changes of its top executives (Gietzmann et al., 2016). In addition, in order to avoid receiving comment letters again, the firms will adopt a more concealed earnings management method, and the potential cost of earnings manipulation by listed firms increases (Cunningham et al., 2020).

Existing research on IPO comment letters focuses on the impact of IPO review on IPO pricing and the corporate behavior after listing using SEC data (Lowry et al., 2020). Since the IPO review materials of the SEC are not released publicly until a certain period of time after the IPO, research on the impact of IPO review on pricing is relatively limited. Li and Liu (2017) show that IPO review has a significantly negative correlation with IPO pricing, and the more rounds of issuing comment letters, the greater the decline in IPO pricing. The main reason is that the IPO reviewing intensity reduces investors' motivation to speculate on the share price of listed firms. Their research also shows that the supervision effect of IPO comment letters on pricing is more significant in listed firms with greater hyping incentives.

Corporate tax avoidance is an important research field in corporate finance. Some research literature notes that tax avoidance activities can improve the corporate cash flow and profitability in a certain period (Graham and Tucker, 2006) and alleviate the financing constraints faced by the corporate operation (Law and Mills, 2015). However, in the long run, the tax avoidance activities have significantly negative impacts on the corporate development. Chen et al. (2010) show that firms must consider more potentially relevant costs when avoiding taxes, not only the cost of planning and implementing tax avoidance activities but also the potential penalties and the cost of reputation loss. Therefore, tax avoidance activities are not as good as originally expected. At the same time, tax avoidance is achieved through a large number of opaque and complex transactions, which can stimulate potential principal-agent problems and bring many non-tax costs, which negatively affect the value of the firm (Graham et al., 2014).

From the perspective of the internal agency problem of the firm, tax avoidance activities will aggravate the self-interested behavior of managers and increase the information asymmetry between shareholders and managers (Desai and Dharmapala, 2006). The higher level of corporate tax avoidance will also arouse the concerns of external stakeholders, which will eventually lead to an increase in the corporate financing costs (Hasan et al., 2014). In addition, because corporate tax avoidance activities will exacerbate the problem of information opacity and increase the corporate operating volatility, the accuracy of analysts' financial forecasts will be reduced (Bonsall et al., 2017). Some studies also show that due to the high operating volatility brought about by tax avoidance activities, the stock price crash risk of firms with high tax avoidance activities will be significantly increased (Kim et al., 2011).

Based on the findings related to the negative impacts of tax avoidance activities on listed firms, literature shows that strengthening the internal and external supervision and governance mechanism of firms is an effective method to alleviate this issue. Gu et al. (2013) show that institutional investors' shareholding can play a positive role in improving corporate governance and inhibiting corporate tax avoidance. The reason is that institutional investors can effectively improve external supervision level by their professional skills, and suppress the tax avoidance activities hidden under complex transactions (Gu et al., 2013). Desai et al (2006) show that the intensity of tax audits faced by listed firms is significantly related to the intensity of corporate tax avoidance behavior. The greater the intensity of external tax audits, the lower the intensity of corporate tax avoidance. Penalties from tax authorities and the subsequent loss of corporate reputation due to tax avoidance activities are a large part of the cost of tax avoidance, which forces firms to abandon aggressive tax avoidance behaviors (Rego and Wilson, 2012; Wilson, 2009). Literature also shows that in addition to institutional investors and external tax collection authorities, external auditors, as an independent third party, can also effectively supervise the aggressive tax avoidance behavior of firms. In the process of auditing the financial statements of listed firms and issuing audit opinions on the financial statements, it can effectively supervise the corporate aggressive tax avoidance behavior and reduce financial restatements of listed firms (Chan et al., 2016; Gallemler and Labro, 2015).

### 3. Hypothesis Development

The IPO listing review under RIS takes the improvement of information disclosure as the core goal; it uses comment letters to encourage issuers to reveal more information. Specifically, the listing review committee inquires about matters that issuers might not be able to meet the regulatory listing standards, or matters with which issuers might have provided inaccurate or incomplete information. The authenticity of the information enables investors to better

judge the corporate business model, growth opportunities, and potential risks. The IPO listing review committee does not make substantive judgments on the information but just discloses the content of the comment letter questions and answers on the official website of the STAR Market in real time. Although the registration-based listing review process does not make substantive judgments on the information disclosed by the firm, it is still used to supervise the adequacy and authenticity of the issuer's information disclosure.

That IPO review may play the role of external governance from two perspectives. First, the registration-based IPO listing review via comment letters reduces the incentive for issuers to selectively disclose information and implement opportunistic behavior in subsequent operations. To avoid IPO registration failure, issuers will pay attention to whether the key matters, especially the issues raised in comment letters, are faithfully disclosed, which increases the level of its financial information disclosure (Fischer and Verrecchia, 2000) and reduces the possibility of firms using selective disclosure or vague disclosure to conceal prior aggressive tax avoidance behavior.

Second, IPO listing review will cause external stakeholders, such as external auditors, institutional investors and securities analysts, to pay more attention to the issuer's status, which will increase the cost of the issuer's concealment of information and the use of opaque information to cover up tax avoidance transactions (Gietzmann and Pettinicchio, 2014; Fang et al., 2017). Schuldt and Vega (2018) study the role of IPO review on corporate compliance behavior. The empirical results show that the relevant regulatory authorities could identify the earnings management behavior of the firm before listing in order to send more revenue-related comment letter questions to it. This focus on the issuer's income in the IPO review will reduce the issuer's earnings management related behavior after listing. Based on similar logic, this external focus will also reduce the motivation for firm to conduct tax avoidance activities.

Based on the above analysis, we suggest that firms under high IPO listing review pressure may be inclined to increase compliance of operations and reduce aggressive tax avoidance behavior in order to reduce the likelihood of being investigated in the future – the “Bonding Hypothesis”. The Hypothesis H1 is stated as follow:

H1: The increase in the intensity of the IPO review will reduce the degree of tax avoidance after the firm is listed on the stock exchange.

Regarding the influential mechanism of IPO review on corporate tax avoidance behavior, we first analyze the characteristics of the firms listed on the STAR market. Firms listed on the STAR market must be high-tech firms, and their main business is quite different from traditional China's A-share market (which exists in various industries). Meanwhile, the scale of the firms on the STAR market is relatively small, their main business is closely related to advanced scientific



and technological innovations, which has resulted in limited funding channels but relatively high R&D investment. The above characteristics indicate that most of the firms in the STAR market are in the growth stage and face significant pressure from R&D investment. In terms of the motivation for implementing tax avoidance, when the firms are in the growth stage and face relatively high financing constraints, firms have a stronger incentive to keep resources within the firm using tax avoidance activities (Himmelberg and Petersen, 1994). In terms of the basic conditions for implementing tax avoidance, R&D-related activities are an important factor causing information asymmetry inside and outside the firm (Aboody and Lev, 2000). The reason is that the cycle of R&D activities is always long, and the uncertainty is high. Therefore, the analysis of R&D activities and the interpretation of R&D investment-related information requires strong professional knowledge (Levy and Terleckyj, 1983; Merkley, 2014).

Therefore, high-tech firms have a high possibility of using the information asymmetry brought about by R&D activities to conduct tax avoidance activities. In addition to using information asymmetry in scientific research and innovation activities to avoid taxes, due to the inherent professionalism and high uncertainty of R&D activities, high-tech firms also have the possibility of conducting fictitious R&D activities to enjoy government tax incentives policies (Chen et al., 2014). Among them, inflating the scope of R&D activities, classifying other activities not related to R&D as R&D activities, and including the costs of other activities into R&D expenses to enjoy tax incentives for tax avoidance are commonly used methods (Griffith et al., 1995). Finally, in the absence of an effective internal control and external supervision mechanism, whether R&D expenses are included in the current profit and loss statement as costs or capitalized as internally generated intangible assets, the definition of the research and development stages of particular project is relatively subjective. Inconsistent implementation of accounting policies may also cause firms to use R&D activities for tax avoidance, which is more hidden and has lower potential costs (Tassey, 1996). The depth of understanding and authenticity judgment of external stakeholders on the non-independent identification of accounting line-items such as research and development expenses are also restricted (Alm and Torgler, 2011).

It can be seen that firms listed on the STAR market may use the complexity of R&D activities and improper classification of R&D activities to avoid taxes. Therefore, from the contents of the IPO listing review, we hypothesize that the intensity of review about the characteristics of R&D activities and compliance of operation and information disclosure are the influencing mechanisms in the relationship between the IPO listing review and tax avoidance. Specifically, the reviews about the characteristics of R&D activities mainly include questions about the construction of the R&D system and about the core technologies, as shown in Table 1. The increase of the review about the characteristics of R&D activities encourages the issuer

to disclose more relevant information about its scientific research investment, basic characteristics of scientific research projects, and future application scenarios, which deepens the understanding of its scientific research basic information by external investors. This ultimately enhances the disclosure of relevant information regarding corporate R&D projects and reduces the ability of firms to use asymmetric information of R&D activities for tax avoidance. The reviews about the compliance of operation and information disclosure mainly include inquiries about the compliance of operation and about the compliance of information disclosure, as shown in Table 1. The review regarding the compliance of operation and information disclosure ensures the authenticity of the disclosure of R&D activities and their scope, this ultimately reduces the space for firms to use false reporting or exaggeration of their research scope for tax avoidance. In summary, reviews about the characteristics of R&D can reduce information asymmetry caused by R&D activities by strengthening the disclosure of basic R&D information by issuers, and reduce the tax avoidance activities; reviews about compliance of operation and information disclosure can enhance the authenticity of information disclosure by issuers and reduce fabrication or exaggeration of R&D scope, and reduce the tax avoidance.

**Table 1: Comment letter topics and questions description**

| Topics                                                              | Sub-Topics                                     | Examples of the details for the questions (including but not limited to)                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>About the characteristic of R&amp;D activities</b>               | About the R&D system construction              | Independent R&D; R&D investment                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                     | About the core technologies                    | The advancement, uniqueness, reliability and maturity of technologies; the application of the award-winning technologies; trademarks, proprietary technologies, patents, software copyrights and intellectual property rights; the expiration of core patents; the level of technologies; the licensing of technologies; the transfer of technologies; qualifications, licenses, permits or certifications; the bottlenecks for technologies |
| <b>About the compliance of operation and information disclosure</b> | About the compliance of operation              | Industrial policies, laws and regulations; compliance operation                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                     | About the compliance of information disclosure | Media doubts; the quality of information disclosure; tips for major issues; product registration classification; other information disclosure issues                                                                                                                                                                                                                                                                                         |

Notes: this table presents the details of the review questions on the characteristic of R&D activities and the review on the compliance of operation and information disclosure. The proportion of relevant questions in the total review questions is the intensity of review on two specific topics. The classification of review questions is based on Measures for the Administration of Registration of Securities Offering by Companies Listed on the STAR Market (for Trial Implementation).

Source: authors' processing

Therefore, in view of the influential mechanism in which IPO review can inhibit corporate tax avoidance activities, we hypothesize that the increase in the intensity of review on the characteristics of R&D activities and compliance of operation and information disclosure can inhibit intensity of corporate tax avoidance after listing. Based on the above analysis, we propose Hypothesis 2:

H2: The IPO review via comment letter reduces the corporate tax avoidance by monitoring the characteristics of R&D activities and compliance of operation and information disclosure.

## 4. Research Design

### 4.1 Sample selection and data sources

Our samples are firms listed on the Science and Technology Innovation Board (STAR Market) via the registration-based IPO system (RIS) from 2017–2020. As we require financial data before and after the initial public offerings (IPOs), we collect the annual financial data of sample firms using their listing prospectuses and the WIND database.

We process our research data as follows: (1) exclude samples with missing data; (2) winsorize all continuous variables at the 1% and 99% levels to reduce the effect of extreme values on empirical results. Our final sample contains 1226 firm-year observations from 326 STAR Market listed firms. Using IPO comment letters on these firms, which we obtained from the official website of the STAR Market of Shanghai Stock Exchange<sup>3</sup>, we manually collect data of IPO comment letters. Other control variable data are from the WIND database.

### 4.2 Variable definitions

The dependent variable is Corporate Tax Avoidance (CTA). According to the existing literature (Desai and Dharmapala, 2006), we adopt the book-tax differences after subtracting the impact of accrual items (*DDBTD*) to measure CTA. The *DDBTD* is calculated as follows:

$$\begin{aligned} BTD_{i,t} &= \beta_1 \times TACC_{i,t} + u_i + \varepsilon_{i,t} \\ DDBTD_{i,t} &= u_i + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Total accrual (*TACC*) is calculated as (net income – net cash flow from operational activities) / total assets, while book-tax difference (*BTD*) is calculated as (pre-tax accounting profit

3 See “<http://www.sse.com.cn/star/>”

– (income tax expense – deferred income tax)/nominal tax rate)/total assets. In general, the greater the value of *BTD*, the higher the level of corporate tax avoidance (CTA).  $u_i$  is the portion of the corporate tax burden that remains constant over time, and  $\varepsilon_{i,t}$  is the regression residual. *DDBTD* represents the portion of *BTD* that cannot be explained by accrual items. The greater the value of *DDBTD*, the higher the level of corporate tax avoidance (CTA).

The explanatory variables are the intensity of the overall IPO review and the intensity of the review on the two specific topics (characteristics of R&D activities & compliance of operation and information disclosure). The rounds of issuing comment letters (*R\_Round*), an important characteristic of IPO listing review, is used to measure the intensity of overall review. The more rounds there are, the higher the intensity of review. Furthermore, the intensity of the review on characteristics of issuers' research and development (R&D) activities and the intensity of the review on the compliance of issuers' operation and information disclosure are measured by the proportion of the related questions in total review questions, which are marked as *R\_R&D* and *R\_Compliance*.

The calculation procedure of the review intensity on two specific topics is shown in Table 2, and the details for the topics and the questions are shown in Table 1. The questions in the comment letter were manually classified by the author's team in accordance with the *Measures for the Administration of Registration of Securities Offering by Companies Listed on the STAR Market (for Trial Implementation)*.

According to the existing literature, we also incorporate the following control variables (Graham and Tucker, 2006; Hasan et al., 2014): (1) size (*SIZE*); (2) return on assets (*ROA*); (3) debt to assets ratio (*D/A*); (4) receivables turnover ratio (*RECE*); (5) inventory density (*INV*); and (6) intangible asset density (*INTANG*). The definitions and details of the variables are listed in Table 2 above.

**Table 2: Variable definitions**

| Variable type                | Variable symbol     | Variable name                                                                 | Variable calculation                                                                                                    |
|------------------------------|---------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Explained variable</b>    | <i>CTA</i>          | Corporate Tax Avoidance                                                       | As mentioned above                                                                                                      |
| <b>Explanatory variables</b> | <i>R_Round</i>      | Rounds of IPO Comment Letters                                                 | Total rounds of issuing Comment Letters                                                                                 |
|                              | <i>R_R&amp;D</i>    | Intensity of review on the characteristic of R&D activities                   | Proportion of the questions related to the R&D activities in total review questions                                     |
|                              | <i>R_Compliance</i> | Intensity of review on the compliance of operation and information disclosure | Proportion of the questions related to the compliance of operation and information disclosure in total review questions |
| <b>Control variables</b>     | <i>SIZE</i>         | Size                                                                          | The natural logarithm of the firm's total asset size                                                                    |
|                              | <i>ROA</i>          | Return on assets                                                              | The firm's net profit/the firm's total assets                                                                           |
|                              | <i>D/A</i>          | Debts to assets ratio                                                         | The firm's total debts/the firm's total assets                                                                          |
|                              | <i>RECE</i>         | Receivables turnover ratio                                                    | Operating income/receivables balance                                                                                    |
|                              | <i>INV</i>          | Density of inventory                                                          | The firm's inventory/the firm's total assets                                                                            |
|                              | <i>INTANG</i>       | Density of intangible asset                                                   | The firm's intangible assets/the firm's total assets                                                                    |
|                              | <i>INDS</i>         | Industrial dummy variables                                                    | Industrial dummy variables                                                                                              |
|                              | <i>YEAR</i>         | Year dummy variables                                                          | Year dummy variables                                                                                                    |

Notes: this table presents the details of the variables in the main regression model. The sample period of our study is 2017 to 2020, the sample firms are the firms listed on the Science and Technology Innovation Board (the "STAR Market"). The calculation method of the explained variable has been mentioned above. The explanatory variables are the intensity of overall IPO listing review and the intensity of review on the two specific topics.

Source: authors' processing

### 4.3 Model specification

In the traditional difference-in-difference model (DID model), the treatment group and the control group are distinguished by binary dummy variables (treatment dummy variables). However, this model only reflects the differences between the individuals affected by policies (the treatment group) and the individuals not affected by policies (the control group) among the samples, without reflecting the changes in the extent to which these individuals are affected by policies. If the main difference across samples is the degree to which they are affected by policies, the traditional DID model cannot properly evaluate the differences resulting from the intensity of the policy (Beck et al., 2010). Qian (2008) and Chen et al. (2020) developed a continuous DID model to address this issue (Qian, 2008; Chen et al., 2020). Similarly to the traditional DID model, the continuous DID model uses binary dummy variables to distinguish the time before and after the policies are implemented (time dummy variables). However, it replaces the treatment dummy variable used to distinguish between groups with a continuous variable that represents the intensity of the policies. Thus, it is possible to evaluate the impact of various policy intensities on the sample.

Since all listed firms in the STAR Market are subject to IPO listing review before their IPOs, the sole distinction is that different firms experience varying intensity of overall and topic-specific review. Consequently, we use the continuous DID model to examine the effect of review intensity on CTA after IPOs (Nunn and Qian, 2011). The details of model 2 are as follows:

$$CTA_{i,t} = \alpha_0 + \beta_1 \times POST_{i,t} \times X_{i,t} + \sum \beta_i \times Controls_{i,t} + \sum YEAR + \sum INDS + \varepsilon_{i,t} \quad (2)$$

$POST_{i,t}$  is a time dummy variable. This variable's value is 1 if a firm receives an IPO review in the current year and subsequent years. Otherwise, its value is 0.  $X$  reflects the characteristics of the IPO review, including  $R\_round$  and the intensity of the review on the two specific issues ( $R\_R\&D$ ,  $R\_Compliance$ ). This variable substitutes the binary policy variable in the traditional DID model, allowing for an accurate estimation of the impact of the policy intensity on the firm. According to the formulation of the DID model with multiple periods, only the interaction item of the time dummy variable with the policy variable is retained, as different firms receive the comment letter at different times, and including both time dummy variables and treatment dummy variables simultaneously can cause collinearity issues.  $\sum YEAR$  and  $\sum INDS$  represent the year and the industry fixed effects, respectively. If the coefficient of the interaction item in the model is negative and significant, it means that CTA after IPOs can be reduced more effectively by the higher intensity of overall review and intensity of review on two specific topics.

## 5. Empirical Results

### 5.1 Descriptive statistics

The descriptive statistics for the variables are shown in Table 3, which shows that the minimum, maximum, and median values for *R\_Round* are 3, 9, and 5, respectively. This indicates that the review intensity for issuers varies substantially. As for review on two specific issues, firms listed on the STAR Market encounter diverse review topics, reflecting the variability of review topics among firms.

**Table 3: Descriptive Statistics**

| Variables           | Obs  | Mean    | Sd      | Min     | P50     | Max     |
|---------------------|------|---------|---------|---------|---------|---------|
| <i>CTA</i>          | 1226 | 0.0017  | 0.0515  | −0.2100 | 0.0034  | 0.1381  |
| <i>R_Round</i>      | 1226 | 5.1134  | 1.1638  | 3.0000  | 5.0000  | 9.0000  |
| <i>R_R&amp;D</i>    | 1226 | 0.0897  | 0.0471  | 0.0085  | 0.0861  | 0.2271  |
| <i>R_Compliance</i> | 1226 | 0.0795  | 0.0424  | 0.0058  | 0.0732  | 0.2612  |
| <i>SIZE</i>         | 1226 | 20.6599 | 1.0323  | 18.7640 | 20.5257 | 24.2193 |
| <i>ROA</i>          | 1226 | 0.1095  | 0.0867  | −0.1532 | 0.0963  | 0.4181  |
| <i>D/A</i>          | 1226 | 0.3421  | 0.1889  | 0.0429  | 0.3186  | 0.8563  |
| <i>RECE</i>         | 1226 | 6.8300  | 10.3770 | 0.9092  | 4.1418  | 73.9177 |
| <i>INV</i>          | 1226 | 0.1351  | 0.0963  | 0.0021  | 0.1141  | 0.4551  |
| <i>INTANG</i>       | 1226 | 0.0351  | 0.0317  | 0.0003  | 0.0269  | 0.1686  |

Notes: this table presents the descriptive statistics for the variables in our study. Our sample includes 1226 observations from 326 firms. The minimum and maximum values of *R\_Round* are 3 and 9 respectively, indicating that there is a certain difference between the intensity of review. Similarly, firms in our sample encounter obviously diverse review topics.

Source: authors' calculations

### 5.2 Main regression results

Table 4 displays the regression results of model 2. The regression coefficient of *R\_Round*×*POST* is −0.002 and significant at the 1% level, showing that firms with higher review intensity have a lower level of CTA after IPOs compared to those with lower review intensity. In other words, a higher level of review intensity has a stronger suppression and supervisory effect on tax avoidance, and intentions of CTA are more strongly inhibited.

**Table 4: Intensity of IPO review and corporate tax avoidance**

| Variables                         | (OLS)<br>CTA         | (OLS)<br>CTA         | (OLS)<br>CTA         |
|-----------------------------------|----------------------|----------------------|----------------------|
| <i>R_Round</i> × <i>POST</i>      | −0.002***<br>(−2.89) |                      |                      |
| <i>R_R&amp;D</i> × <i>POST</i>    |                      | −0.116***<br>(−3.78) |                      |
| <i>R_Compliance</i> × <i>POST</i> |                      |                      | −0.110***<br>(−2.97) |
| <i>SIZE</i>                       | 0.006***<br>(3.66)   | 0.006***<br>(3.52)   | 0.006***<br>(3.67)   |
| <i>ROA</i>                        | 0.203***<br>(6.73)   | 0.201***<br>(6.69)   | 0.206***<br>(6.91)   |
| <i>D/A</i>                        | −0.013<br>(−1.20)    | −0.015<br>(−1.31)    | −0.013<br>(−1.15)    |
| <i>RECE</i>                       | 0.000<br>(1.10)      | 0.000<br>(1.11)      | 0.000<br>(1.19)      |
| <i>INV</i>                        | −0.024<br>(−1.29)    | −0.025<br>(−1.36)    | −0.022<br>(−1.21)    |
| <i>INTANG</i>                     | −0.004<br>(−0.07)    | −0.005<br>(−0.08)    | 0.001<br>(0.02)      |
| Constant                          | −0.143***<br>(−3.80) | −0.136***<br>(−3.63) | −0.145***<br>(−3.83) |
| <i>YEAR</i>                       | YES                  | YES                  | YES                  |
| <i>INDS</i>                       | YES                  | YES                  | YES                  |
| Observations                      | 1,226                | 1,226                | 1,226                |
| R-squared                         | 0.132                | 0.135                | 0.132                |
| adj_R <sup>2</sup>                | 0.123                | 0.126                | 0.123                |
| F-value                           | 8.975                | 9.200                | 9.022                |

Notes: this table presents the results of model 2. The regression results show that the intensity of overall IPO review has a significant negative correlation with the CTA after listing. Similarly, the intensity of review on the two specific topics has a significant negative correlation with the CTA after listing. This verifies the supervision role of the registration-based IPO system. The values listed in the brackets are robust T-values; \*\*\*, \*\* and \* represent the significance at the 1%, 5% and 10% levels, respectively.

Source: authors' calculations



The columns 2 and 3 of Table 4 show the regression results for the review intensity on two specific topics. Specifically, the coefficient of  $R\_R\&D \times POST$  is  $-0.116$  and significant at the 1% level, showing that the listed firms on the STAR Market have a lower CTA after their IPOs if they face a higher intensity of review on characteristics of their R&D activities. Similarly, the coefficient of  $R\_Compliance \times POST$  is  $-0.110$  and significant at the 1% level, showing that the listed firms have a lower level of CTA after IPOs if they face a higher intensity of review on the compliance of operation and information disclosure.

### 5.3 Impact of the ownership structure

The nature of ownership structure has a substantial effect on CTA (Chen et al., 2021; Demsetz, 1964). Due to their various roles and duties in economic operations, state-owned firms pay greater attention to tax responsibility and are subject to more stringent tax regulation than non-state-owned firms. Therefore, it is less probable that state-owned firms will manipulate profits through corporate tax avoidance.

According to the ownership structure of the firms, we divide our samples into subsamples of state-owned firms ( $SOE = 1$ ) and subsamples of non-state-owned firms ( $SOE = 0$ ). Table 5 shows the regression results, which indicate that the overall review intensity, the review intensity on characteristic of R&D activities, and the review intensity on the compliance of operation and information disclosure have a significant suppression effect on CTA in non-state-owned subsamples, indicating that the external supervision effect from IPO listing review is more significant in non-state-owned subsamples.

**Table 5: Intensity of IPO review, Ownership Structure and Corporate Tax Avoidance**

| Variables                         | SOE = 0<br>CTA      | SOE = 1<br>CTA    | SOE = 0<br>CTA       | SOE = 1<br>CTA    | SOE = 0<br>CTA      | SOE = 1<br>CTA    |
|-----------------------------------|---------------------|-------------------|----------------------|-------------------|---------------------|-------------------|
| <i>R_Round</i> × <i>POST</i>      | −0.002**<br>(−2.35) | −0.002<br>(−1.00) |                      |                   |                     |                   |
| <i>R_R&amp;D</i> × <i>POST</i>    |                     |                   | −0.109***<br>(−3.20) | −0.121<br>(−1.65) |                     |                   |
| <i>R_Compliance</i> × <i>POST</i> |                     |                   |                      |                   | −0.102**<br>(−2.49) | −0.084<br>(−1.03) |
| <i>SIZE</i>                       | 0.004*<br>(1.89)    | 0.007*<br>(1.78)  | 0.004*<br>(1.77)     | 0.007*<br>(1.68)  | 0.004*<br>(1.91)    | 0.008*<br>(1.82)  |
| <i>ROA</i>                        | 0.196***<br>(6.10)  | 0.182**<br>(2.34) | 0.193***<br>(6.03)   | 0.185**<br>(2.38) | 0.199***<br>(6.24)  | 0.185**<br>(2.38) |
| <i>D/A</i>                        | −0.005<br>(−0.43)   | −0.036<br>(−1.42) | −0.007<br>(−0.57)    | −0.036<br>(−1.39) | −0.004<br>(−0.37)   | −0.035<br>(−1.37) |
| <i>RECE</i>                       | 0.000<br>(1.02)     | 0.002**<br>(1.99) | 0.000<br>(1.05)      | 0.002*<br>(1.88)  | 0.000<br>(1.11)     | 0.002*<br>(1.91)  |
| <i>INV</i>                        | −0.034*<br>(−1.74)  | 0.030<br>(0.54)   | −0.035*<br>(−1.79)   | 0.027<br>(0.49)   | −0.033*<br>(−1.69)  | 0.033<br>(0.58)   |
| <i>INTANG</i>                     | 0.023<br>(0.37)     | −0.138<br>(−0.73) | 0.023<br>(0.38)      | −0.144<br>(−0.78) | 0.030<br>(0.50)     | −0.144<br>(−0.78) |
| <i>Constant</i>                   | −0.103**<br>(−2.24) | −0.141<br>(−1.39) | −0.095**<br>(−2.09)  | −0.131<br>(−1.29) | −0.104**<br>(−2.27) | −0.145<br>(−1.43) |
| <i>YEAR</i>                       | YES                 | YES               | YES                  | YES               | YES                 | YES               |
| <i>INDS</i>                       | YES                 | YES               | YES                  | YES               | YES                 | YES               |
| <i>Obs</i>                        | 1,057               | 169               | 1,057                | 169               | 1,057               | 169               |
| <i>R-squared</i>                  | 0.136               | 0.251             | 0.139                | 0.258             | 0.137               | 0.250             |
| <i>adj_R<sup>2</sup></i>          | 0.125               | 0.193             | 0.128                | 0.201             | 0.126               | 0.192             |
| <i>F-value</i>                    | 8.307               | 6.300             | 8.511                | 7.256             | 8.395               | 6.871             |

Notes: This table presents the result of cross-sectional analysis based on the nature of corporate ownership. Based on the ownership structure of the firm, we divide the sample into two sub-samples (SOE and Non-SOE) and then regress model 2. The explanatory variable is not significant in the state-owned subsample, but is significantly negative in the non-state subsample. This indicates that the external supervision effect from IPO review is more significant in non-state-owned subsamples. The values listed in the brackets are robust T values; \*\*\*, \*\* and \* represent the significance at the 1%, 5% and 10% levels, respectively.

Source: authors' calculations

## 5.4 Impact of institutional investors

Existing literature demonstrates that supervision from institutional investor can reduce the financial aggression of listed firms and increase the quality of information disclosure (Chung et al., 2002; Magnis and Iatridis, 2017). We divide our sample into subsamples with a low shareholding proportion of institutional investors ( $IS = 0$ ) and subsamples with a high shareholding proportion of institutional investors ( $IS = 1$ ) according to the mean of the institutional shareholding ratio. Table 6 shows the regression results, which indicate that IPO review has a greater suppression effect on CTA in subsamples with low institutional shareholding, indicating that IPO listing review under the registration-based system has a complementary effect with the supervision and governance role of institutional investors.

**Table 6: Intensity of IPO review, Institutional Investors Holdings and Corporate Tax Avoidance**

| Variables                         | IS = 0<br>CTA        | IS = 1<br>CTA     | IS = 0<br>CTA        | IS = 1<br>CTA     | IS = 0<br>CTA        | IS = 1<br>CTA      |
|-----------------------------------|----------------------|-------------------|----------------------|-------------------|----------------------|--------------------|
| <i>R_Round</i> × <i>POST</i>      | −0.003***<br>(−3.16) | −0.000<br>(−0.20) |                      |                   |                      |                    |
| <i>R_R&amp;D</i> × <i>POST</i>    |                      |                   | −0.129***<br>(−3.57) | −0.083<br>(−1.41) |                      |                    |
| <i>R_Compliance</i> × <i>POST</i> |                      |                   |                      |                   | −0.170***<br>(−3.68) | 0.013<br>(0.21)    |
| <i>SIZE</i>                       | 0.008***<br>(3.41)   | 0.003<br>(0.94)   | 0.008***<br>(3.30)   | 0.003<br>(1.04)   | 0.008***<br>(3.53)   | 0.003<br>(0.88)    |
| <i>ROA</i>                        | 0.227***<br>(6.46)   | 0.150**<br>(2.56) | 0.225***<br>(6.43)   | 0.147**<br>(2.52) | 0.234***<br>(6.76)   | 0.151***<br>(2.60) |
| <i>D/A</i>                        | −0.016<br>(−1.25)    | −0.003<br>(−0.13) | −0.018<br>(−1.35)    | −0.007<br>(−0.28) | −0.016<br>(−1.25)    | −0.002<br>(−0.07)  |
| <i>RECE</i>                       | 0.000<br>(0.04)      | 0.000**<br>(2.22) | 0.000<br>(0.04)      | 0.000**<br>(2.28) | 0.000<br>(0.08)      | 0.000**<br>(2.17)  |
| <i>INV</i>                        | −0.017<br>(−0.85)    | −0.035<br>(−0.76) | −0.019<br>(−0.92)    | −0.037<br>(−0.80) | −0.016<br>(−0.78)    | −0.035<br>(−0.75)  |
| <i>Intan</i>                      | 0.010<br>(0.16)      | −0.005<br>(−0.04) | 0.011<br>(0.17)      | −0.014<br>(−0.11) | 0.022<br>(0.33)      | −0.004<br>(−0.03)  |
| <i>Constant</i>                   | −0.172***<br>(−3.59) | −0.074<br>(−1.06) | −0.165***<br>(−3.45) | −0.075<br>(−1.10) | −0.177***<br>(−3.72) | −0.069<br>(−1.00)  |
| <i>Controls</i>                   | YES                  | YES               | YES                  | YES               | YES                  | YES                |
| <i>YEAR</i>                       | YES                  | YES               | YES                  | YES               | YES                  | YES                |
| <i>INDS</i>                       | YES                  | YES               | YES                  | YES               | YES                  | YES                |
| <i>Observations</i>               | 903                  | 323               | 903                  | 323               | 903                  | 323                |
| <i>R-squared</i>                  | 0.149                | 0.105             | 0.152                | 0.108             | 0.153                | 0.105              |
| <i>adj_R<sup>2</sup></i>          | 0.136                | 0.0674            | 0.139                | 0.0703            | 0.140                | 0.0673             |
| <i>F-value</i>                    | 7.378                | 2.512             | 7.206                | 2.711             | 7.740                | 2.530              |

Notes: this table presents the result of cross-sectional analysis based on the shareholding of institutional investors. Based on the median shareholding ratio of institutional investors, we divide the sample into two subsamples and then regress model (2). The explanatory variables are significant in the subsample with low institutional investors' shareholding, but not in the subsample with high institutional investors' shareholding. This indicates that IPO review of registration-based system can produce a complementary effect with the supervision and governance role of institutional investors. The values listed in the brackets are robust T values; \*\*\*, \*\* and \* represent the significance at the 1%, 5% and 10% levels, respectively.

Source: authors' calculations

## 5.5 Impact of the listing criteria

According to CSRC regulations, the STAR Market listing criteria are divided into five classes<sup>4</sup>. Class I listing standard contains profit indicators for issuers, whereas Class II, III, and IV listing criteria do not contain profit-related financial indicators, and Class V listing standard only contains the market value assessment indicator and focuses more on the innovation characteristics of firms (mainly applicable to biomedical firms). Consequently, the empirical results of the main regression model may be influenced by the listing rules of the STAR Market. The firms listed on the STAR Market via Class I standard are subject to strict profit requirements; therefore, they have stronger tax avoidance motivation and attract more scrutiny from external regulators. In contrast, firms listed on the STAR Market via other kinds of standards are not subject to pressure from profit-related indicators, hence their tax avoidance motivation is relatively low. Therefore, the suppressing effect of IPO review may be insignificant in these samples.

To test the impact of the listing criteria, listed firms on the STAR Market are divided into firms listed via the standards with profit indicators (*Indicator* = 1) and firms listed without profit indicators (*Indicator* = 0). Table 7 shows the regression results, which indicate that the overall intensity, the review on the R&D innovation activities, and the review on the compliance of operation and information disclosure have a significant relationship with CTA in Class I firms.

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4 Listing standards on the STAR Market are divided into the following five classes. (I) The market value is expected to be no less than RMB 1 billion, the net profits for the last two years were both positive and the cumulative net profit for the last two years was no less than RMB 50 million, or the market value is expected to be no less than RMB 1 billion, the net profit for the latest year was positive and the operating income for the latest year was no less than RMB 100 million. (II) The market value is expected to be no less than RMB 1.5 billion, the operating income for the latest year was no less than 200 million yuan, and the cumulative R&D investment for the last three years was no less than 15% of the cumulative operating income for the last three years. (III) The market value is expected to be no less than RMB 2 billion, the operating income for the latest year was no less than RMB 300 million, and the cumulative net cash flow from operating activities for the latest three years was no less than RMB 100 million. (IV) The market value is expected to be no less than RMB 3 billion and the operating income for the latest year is no less than RMB 300 million. (V) The market value is expected to be no less than RMB 4 billion, the main activities or products need to be approved by relevant state organs, the market space is large and phased results have been achieved. And for a pharmaceutical industry enterprise, it shall have at least one core product approved for phase II clinical trials, and for any other enterprise in line with the positioning of the STAR Market, it shall have obvious technological advantages and meet the corresponding conditions.

**Table 7: Intensity of IPO review, Listing Criteria and Corporate Tax Avoidance**

| Variables                         | Indicator = 0<br>CTA | Indicator = 1<br>CTA | Indicator = 0<br>CTA | Indicator = 1<br>CTA | Indicator = 0<br>CTA | Indicator = 1<br>CTA |
|-----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <i>R_Round</i> × <i>POST</i>      | 0.002<br>(1.30)      | −0.002***<br>(−3.15) |                      |                      |                      |                      |
| <i>R_R&amp;D</i> × <i>POST</i>    |                      |                      | −0.096<br>(−1.13)    | −0.111***<br>(−3.92) |                      |                      |
| <i>R_Compliance</i> × <i>POST</i> |                      |                      |                      |                      | −0.091<br>(−0.91)    | −0.093**<br>(−2.50)  |
| <i>SIZE</i>                       | 0.006*<br>(1.88)     | 0.005**<br>(2.32)    | 0.006*<br>(1.75)     | 0.005**<br>(2.17)    | 0.006*<br>(1.86)     | 0.005**<br>(2.21)    |
| <i>ROA</i>                        | 0.615***<br>(9.97)   | 0.127***<br>(4.17)   | 0.608***<br>(10.18)  | 0.126***<br>(4.11)   | 0.610***<br>(9.95)   | 0.130***<br>(4.28)   |
| <i>D/A</i>                        | 0.006<br>(0.22)      | −0.015<br>(−1.37)    | −0.004<br>(−0.13)    | −0.015<br>(−1.38)    | −0.001<br>(−0.04)    | −0.013<br>(−1.21)    |
| <i>RECE</i>                       | −0.001***<br>(−3.20) | 0.000***<br>(2.63)   | −0.001***<br>(−2.99) | 0.000***<br>(2.71)   | −0.001***<br>(−2.97) | 0.000***<br>(2.76)   |
| <i>INV</i>                        | −0.055<br>(−0.91)    | −0.030<br>(−1.62)    | −0.062<br>(−1.03)    | −0.030*<br>(−1.67)   | −0.058<br>(−0.96)    | −0.028<br>(−1.53)    |
| <i>INTANG</i>                     | −0.287*<br>(−1.76)   | 0.087<br>(1.49)      | −0.265*<br>(−1.68)   | 0.089<br>(1.52)      | −0.260<br>(−1.64)    | 0.095<br>(1.64)      |
| <i>Constant</i>                   | −0.127*<br>(−1.84)   | −0.119**<br>(−2.40)  | −0.115<br>(−1.63)    | −0.110**<br>(−2.24)  | −0.126*<br>(−1.79)   | −0.116**<br>(−2.32)  |
| <i>YEAR</i>                       | YES                  | YES                  | YES                  | YES                  | YES                  | YES                  |
| <i>INDS</i>                       | YES                  | YES                  | YES                  | YES                  | YES                  | YES                  |
| <i>Obs</i>                        | 137                  | 1,089                | 137                  | 1,089                | 137                  | 1,089                |
| <i>R-squared</i>                  | 0.563                | 0.102                | 0.564                | 0.104                | 0.562                | 0.100                |
| <i>adj_R<sup>2</sup></i>          | 0.521                | 0.0915               | 0.522                | 0.0931               | 0.520                | 0.0896               |
| <i>F-value</i>                    | 14.34                | 8.260                | 15.03                | 8.890                | 14.06                | 8.129                |

Notes: this table presents the result of cross-sectional analysis based on the listing criteria on the STAR Market. The explanatory variables are significant in the subsamples listed via criteria with profit indicators, but the opposites are not significant. This indicates that the former has a stronger motivation to manipulate profits through corporate tax avoidance, thus making the supervision effect of IPO review of registration-based system more significant. The values listed in the brackets are robust T values; \*\*\*, \*\* and \* represent the significance at the 1%, 5% and 10% levels, respectively.

Source: authors' calculations

## 6. Robustness Tests

### 6.1 Parallel trend test

This study utilizes the intensity of the IPO listing review and the review intensity on the two specific topics as treatment variables to create the continuous DID model, as all listed firms of STAR Market must go through the IPO listing review process. Similar to the traditional DID model, the continuous DID model assumes that there is no substantial difference in CTA before the occurrence of exogenous shocks. Only in this way can the continuous DID model reliably evaluate the effect of the IPO review on CTA. We create the year dummy variables from three years before the IPO listing review to one year before the listing review and examine their interactions with the treatment variables. If the interaction variables in the model are insignificant, there is no substantial difference in CTA before listed firms accept the IPO listing review. In other words, the parallel trend of the sample holds.

Table 8 shows the result of the parallel trend test, which indicates that the majority of interaction items have no significant relationship with CTA, showing that there is no significant difference in CTA before the IPO listing review.

**Table: 8 DID Parallel Trend test**

| <b>Variables</b>                 | <b>CTA<br/>(R_Round)</b> | <b>CTA<br/>(R_R&amp;D)</b> | <b>CTA<br/>(R_Compliance)</b> |
|----------------------------------|--------------------------|----------------------------|-------------------------------|
| <b>3 years before the review</b> | −0.005**<br>(−2.19)      | −0.044<br>(−0.47)          | −0.151*<br>(−1.80)            |
| <b>2 years before the review</b> | 0.000<br>(0.27)          | 0.098*<br>(1.83)           | 0.073<br>(1.40)               |
| <b>1 years before the review</b> | −0.001<br>(−1.11)        | −0.006<br>(−0.17)          | 0.016<br>(0.37)               |
| <b>SIZE</b>                      | 0.005***<br>(2.94)       | 0.006***<br>(3.27)         | 0.006***<br>(3.17)            |
| <b>ROA</b>                       | 0.202***<br>(6.65)       | 0.206***<br>(6.78)         | 0.203***<br>(6.69)            |
| <b>D/A</b>                       | −0.006<br>(−0.58)        | −0.008<br>(−0.79)          | −0.008<br>(−0.77)             |
| <b>RECE</b>                      | 0.000<br>(1.18)          | 0.000<br>(1.10)            | 0.000<br>(1.14)               |
| <b>INV</b>                       | −0.021<br>(−1.16)        | −0.021<br>(−1.15)          | −0.022<br>(−1.20)             |
| <b>INTANG</b>                    | −0.019<br>(−0.32)        | −0.011<br>(−0.18)          | −0.015<br>(−0.25)             |
| <b>Constant</b>                  | −0.110***<br>(−2.78)     | −0.136***<br>(−3.44)       | −0.123***<br>(−3.27)          |
| <b>YEAR</b>                      | YES                      | YES                        | YES                           |
| <b>INDS</b>                      | YES                      | YES                        | YES                           |
| <b>Observations</b>              | 1,226                    | 1,226                      | 1,226                         |
| <b>R-squared</b>                 | 0.142                    | 0.135                      | 0.138                         |
| <b>adj_R<sup>2</sup></b>         | 0.132                    | 0.125                      | 0.128                         |
| <b>F-value</b>                   | 8.011                    | 7.572                      | 8.112                         |

Notes: this table presents the result of the parallel test. Most of the interaction items of the time dummy variables and the treatment variables are not significant in the regression, which indicates that the CTA has no significant difference before accepting the IPO review. Hence the premise of using the continuous DID mode is hold. The values listed in the brackets are robust T values; \*\*\*, \*\* and \* represent the significance at the 1%, 5% and 10% levels, respectively.

Source: authors' calculations



## 6.2 Replacement of variables

We replace the IPO listing review intensity variable with the natural logarithm of the listing review interval (*R\_Interval*) and the natural logarithm of the total review questions (*R\_Total*) to confirm the preceding results. Specifically, the review interval refers to the time from the receipt of the first review to the end of the last review by the firm; the total number of questions refers to the total number of questions received by the firm. The level of review intensity increases with the duration of a firm's IPO and the number of questions posed to the firm. As for the measurement of review on specific topics, we substitute the proportion of questions for each review topic in the total number of questions with the natural logarithm of the absolute number of questions for each review topic (*Ln\_R&D* and *Ln\_Compliance*). The regression results are presented in Table 9, which demonstrates that the empirical conclusions remain the same after the replacement of the explanatory factors.

**Table 9: Robustness tests: Replacement of the Explanatory Variables**

| Variables                          | (OLS)<br>CTA         | (OLS)<br>CTA         | (OLS)<br>CTA         | (OLS)<br>CTA         |
|------------------------------------|----------------------|----------------------|----------------------|----------------------|
| <i>R_Interval</i> × <i>POST</i>    | −0.002**<br>(−2.22)  |                      |                      |                      |
| <i>R_Total</i> × <i>POST</i>       |                      | −0.002**<br>(−2.11)  |                      |                      |
| <i>Ln_R&amp;D</i> × <i>POST</i>    |                      |                      | −0.005***<br>(−3.53) |                      |
| <i>Ln_Compliance</i> × <i>POST</i> |                      |                      |                      | −0.004***<br>(−2.77) |
| <i>SIZE</i>                        | 0.006***<br>(3.50)   | 0.006***<br>(3.55)   | 0.006***<br>(3.69)   | 0.007***<br>(3.69)   |
| <i>ROA</i>                         | 0.204***<br>(6.80)   | 0.204***<br>(6.76)   | 0.202***<br>(6.70)   | 0.204***<br>(6.79)   |
| <i>D/A</i>                         | −0.012<br>(−1.07)    | −0.013<br>(−1.13)    | −0.015<br>(−1.36)    | −0.014<br>(−1.24)    |
| <i>RECE</i>                        | 0.000<br>(1.12)      | 0.000<br>(1.12)      | 0.000<br>(1.08)      | 0.000<br>(1.13)      |
| <i>INV</i>                         | −0.023<br>(−1.27)    | −0.023<br>(−1.27)    | −0.025<br>(−1.33)    | −0.024<br>(−1.28)    |
| <i>INTANG</i>                      | −0.004<br>(−0.07)    | −0.005<br>(−0.08)    | −0.005<br>(−0.08)    | −0.002<br>(−0.04)    |
| <i>Constant</i>                    | −0.138***<br>(−3.67) | −0.140***<br>(−3.72) | −0.143***<br>(−3.80) | −0.145***<br>(−3.84) |
| <i>YEAR</i>                        | YES                  | YES                  | YES                  | YES                  |
| <i>INDS</i>                        | YES                  | YES                  | YES                  | YES                  |
| <b>Observations</b>                | 1,226                | 1,226                | 1,226                | 1,226                |
| <b>R-squared</b>                   | 0.130                | 0.130                | 0.134                | 0.132                |
| <b>adj_R<sup>2</sup></b>           | 0.121                | 0.121                | 0.125                | 0.123                |
| <b>F-value</b>                     | 8.665                | 8.674                | 9.249                | 8.951                |

Notes: This table presents the result of the replacement of the explanatory variables. We use the natural logarithm of review interval (*R\_Interval*) and the natural logarithm of total review questions (*R\_Total*) to replace the variable *R\_Round*, and use the natural logarithm of the absolute number of questions for each review topic (*Ln\_R&D* and *Ln\_Compliance*) to measure the intensity of review on two specific topics. The regression results are consistent with the previous. The values listed in the brackets are robust T values; \*\*\*, \*\* and \* represent the significance at the 1%, 5% and 10% levels, respectively.

Source: authors' calculations

**Table 10: Robustness tests: Replacement of the Explained Variable**

| Variables                         | (OLS)<br>CTA         | (OLS)<br>CTA         | (OLS)<br>CTA         |
|-----------------------------------|----------------------|----------------------|----------------------|
| <i>R_Round</i> × <i>POST</i>      | −0.002***<br>(−2.98) |                      |                      |
| <i>R_R&amp;D</i> × <i>POST</i>    |                      | −0.077***<br>(−2.78) |                      |
| <i>R_Compliance</i> × <i>POST</i> |                      |                      | −0.106***<br>(−2.83) |
| <i>SIZE</i>                       | 0.005***<br>(2.94)   | 0.005***<br>(2.73)   | 0.005***<br>(2.97)   |
| <i>ROA</i>                        | 0.235***<br>(8.24)   | 0.235***<br>(8.23)   | 0.239***<br>(8.44)   |
| <i>D/A</i>                        | −0.021**<br>(−2.13)  | −0.020**<br>(−2.09)  | −0.020**<br>(−2.10)  |
| <i>RECE</i>                       | −0.000<br>(−0.98)    | −0.000<br>(−0.97)    | −0.000<br>(−0.88)    |
| <i>INV</i>                        | 0.024<br>(1.45)      | 0.023<br>(1.42)      | 0.025<br>(1.53)      |
| <i>INTANG</i>                     | −0.060<br>(−1.08)    | −0.061<br>(−1.09)    | −0.055<br>(−0.99)    |
| <i>Constant</i>                   | −0.136***<br>(−3.77) | −0.129***<br>(−3.56) | −0.138***<br>(−3.82) |
| <i>YEAR</i>                       | YES                  | YES                  | YES                  |
| <i>INDS</i>                       | YES                  | YES                  | YES                  |
| <b>Observations</b>               | 1,226                | 1,226                | 1,226                |
| <b>R-squared</b>                  | 0.237                | 0.237                | 0.238                |
| <b>adj_R<sup>2</sup></b>          | 0.229                | 0.228                | 0.229                |
| <b>F-value</b>                    | 14.90                | 14.72                | 15.28                |

Notes: this table presents the result of the replacement of the explained variables. We use BTD (book-tax difference) to replace DDBTD, and the regression result is the same as the previous. The values listed in the brackets are robust T values; \*\*\*, \*\* and \* represent the significance at the 1%, 5% and 10% levels, respectively.

Source: authors' calculations

BTB is also extensively used to quantify CTA in the existing literature (Hanlon et al., 2012). Therefore, we substitute CTA for BTB as the explained variable. Table 10 shows the result of the regression, and the previous conclusion remains valid.

Finally, considering the potential impact of operating losses on corporate tax avoidance behavior, this study also marked firms that experienced operating losses through dummy variables. The empirical conclusion shows that after controlling for the impact of the corporate operating losses, there is no significant change in the empirical conclusion of this article. Due to space limitations, the empirical test results will be retained for future reference.

### 6.3 Two stage least square regression model

We use the two stage least square (2SLS) regression model to control potential endogeneity problems in the model 2. We use the average review intensity of other firms in the same industry and year ( $IV_{ROUND}$ ) and the average review intensity on the two specific topics of other firms in the same industry and year ( $IV_{R\&D}$  and  $IV_{Compliance}$ ) as the instrumental variables for the first stage of regression, based on the existing literature (Paligorova and Xu, 2012; Zhang et al., 2016). Due to industrial practices, the characteristic of R&D activities, choice of accounting policies, and other activities of firms in the same industry are comparable. Thus, there is a positive relationship between the IPO review intensity of a firm and the IPO review intensity of other firms in the same industry. However, the review intensity of other firms in the same industry is not directly affecting the corporate CTA. Therefore, the correlation and exogeneity requirements for instrumental variables are satisfied.

The regression results are shown in Table 11, which reveals that all of the instrumental variables exhibit a significant correlation in the first stage, whereas the explanatory variables continue to exhibit a significant negative correlation with CTA in the second stage, thus confirming the above empirical findings.

**Table 11: Robustness test: addressing endogeneity issue**

| Variables                      | (First-Stage)       | (Second-Stage)       | (First-Stage)        | (Second-Stage)       | (First-Stage)        | (Second-Stage)       |
|--------------------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                                | R_Round × POST      | CTA                  | R_R&D × POST         | CTA                  | R_Compliance × POST  | CTA                  |
| <i>IV<sub>Round</sub></i>      | 1.088***<br>(52.62) |                      |                      |                      |                      |                      |
| <i>IV<sub>R&amp;D</sub></i>    |                     |                      | 1.129***<br>(25.69)  |                      |                      |                      |
| <i>IV<sub>Compliance</sub></i> |                     |                      |                      |                      | 0.990***<br>(24.36)  |                      |
| <i>R_Round × POST</i>          |                     | −0.002*<br>(−1.81)   |                      |                      |                      |                      |
| <i>R_R&amp;D × POST</i>        |                     |                      |                      | −0.087*<br>(−1.86)   |                      |                      |
| <i>R_Compliance × POST</i>     |                     |                      |                      |                      |                      | −0.106*<br>(−1.77)   |
| <i>SIZE</i>                    | 0.050**<br>(2.25)   | 0.006***<br>(3.55)   | −0.002*<br>(−1.77)   | 0.006***<br>(3.47)   | 0.003***<br>(2.89)   | 0.006***<br>(3.61)   |
| <i>ROA</i>                     | −0.398<br>(−1.47)   | 0.203***<br>(6.80)   | −0.027***<br>(−2.95) | 0.202***<br>(6.74)   | 0.016*<br>(1.73)     | 0.206***<br>(6.94)   |
| <i>D/A</i>                     | −0.084<br>(−0.72)   | −0.012<br>(−1.09)    | −0.012**<br>(−2.25)  | −0.013<br>(−1.16)    | −0.006<br>(−1.49)    | −0.012<br>(−1.11)    |
| <i>RECE</i>                    | −0.002<br>(−1.58)   | 0.000<br>(1.12)      | −0.000<br>(−0.21)    | 0.000<br>(1.13)      | 0.000<br>(1.47)      | 0.000<br>(1.20)      |
| <i>INV</i>                     | −0.150<br>(−0.70)   | −0.023<br>(−1.28)    | −0.015*<br>(−1.85)   | −0.024<br>(−1.33)    | 0.008<br>(1.14)      | −0.022<br>(−1.22)    |
| <i>INTANG</i>                  | 0.674<br>(0.96)     | −0.004<br>(−0.07)    | 0.005<br>(0.21)      | −0.005<br>(−0.08)    | 0.057**<br>(2.24)    | 0.001<br>(0.01)      |
| <i>Constant</i>                | −0.924**<br>(−1.99) | −0.140***<br>(−3.72) | 0.043**<br>(2.34)    | −0.135***<br>(−3.61) | −0.055***<br>(−3.06) | −0.144***<br>(−3.80) |
| <i>YEAR</i>                    | YES                 | YES                  | YES                  | YES                  | YES                  | YES                  |
| <i>INDS</i>                    | YES                 | YES                  | YES                  | YES                  | YES                  | YES                  |
| <i>Observations</i>            | 1,226               | 1,226                | 1,226                | 1,226                | 1,226                | 1,226                |
| <i>R-squared</i>               | 0.132               | 0.132                | 0.135                | 0.135                | 0.132                | 0.132                |
| <i>adj_R<sup>2</sup></i>       | 0.122               | 0.122                | 0.125                | 0.125                | 0.123                | 0.123                |
| <i>F-value</i>                 | 8.593               | 8.593                | 8.654                | 8.654                | 8.569                | 8.569                |

Notes: this table presents the result of 2SLS to address the potential endogeneity issue. We use the average review intensity of other firms in the same industry and year ( $IV_{Round}$ ), and the average review intensity on the two specific topics of other firms in the same industry and year ( $IV_{R\&D}$  and  $IV_{Compliance}$ ) as the instrumental variables in the first stage of 2SLS regression. After controlling the potential endogenous problems, the intensity of the IPO review and the intensity of review on two specific topics still show a significant negative correlation with CTA. This supports our previous findings. The values listed in the brackets are robust T values; \*\*\*, \*\* and \* represent the significance at the 1%, 5% and 10% levels, respectively.

Source: authors' calculations

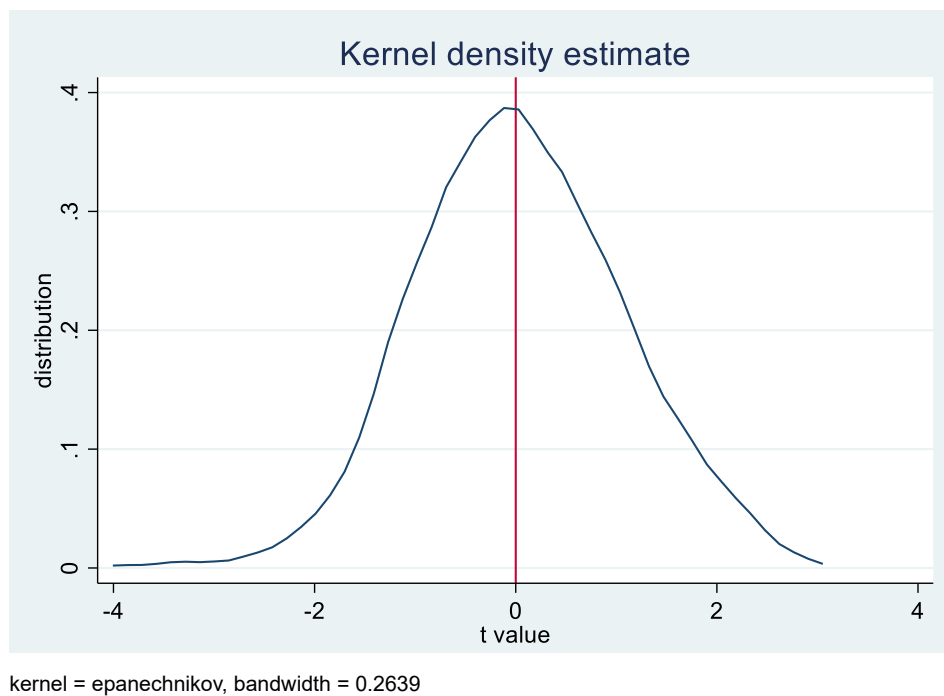
## 6.4 Placebo test for addressing small sample bias

Since the STAR Market was just introduced in 2019, our sample sizes are relatively small. To eliminate errors caused by small samples and to control the potential omission of variables in model 2, we follow existing literature (Li et al., 2020) and conduct a random sampling placebo test. This test can effectively alleviate the problems of omitted variables and endogeneity in model setting by generating random explanatory variables. Specifically, the interaction items of  $POST_{i,t}$  with review intensity are rearranged, and then their values are distributed to the research samples randomly. Subsequently, we use the generated random explanatory variables to regress CTA and record its T-value, which will be repeated 500 times. If the constructed random explanatory variables are significant in the regression, this indicates that changes in the CTA of firms listed on the STAR Market are not attributable to the intensity of review and review topics. Otherwise, the CTA is affected by the heterogeneity of IPO listing review under the registration-based system.

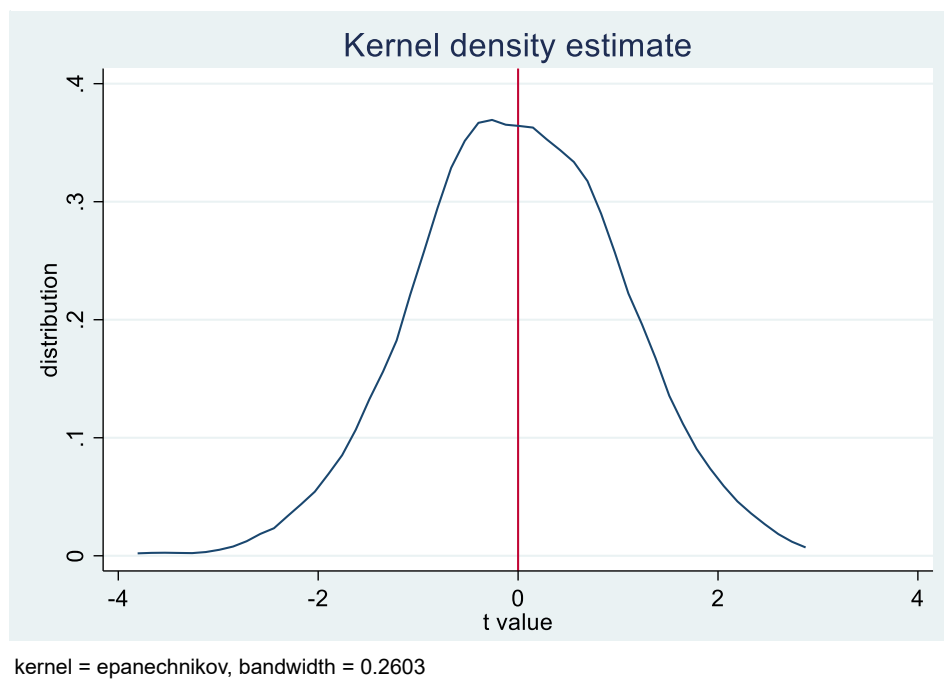
Figures 1, 2, and 3 show the distributions of T-values obtained by random sampling for 500 times. The distribution of T-values is an inverted U with an axis of 0 and the T test also fails to reject the null hypothesis that “T-values from random sampling are not significantly different from 0.” (Table 12). This indicates that the randomly produced explanatory variables are insignificant in the regression, hence the previous result still holds.

These figures present the result of the Placebo test. The T-value obtained from 500 random sampling for each variable shows an inverted u shape with the axis of 0. This shows that there is no significant relationship between the randomly generated explanatory variable and the explained variable, indicating that the change in the CTA is caused by the IPO review characteristics.

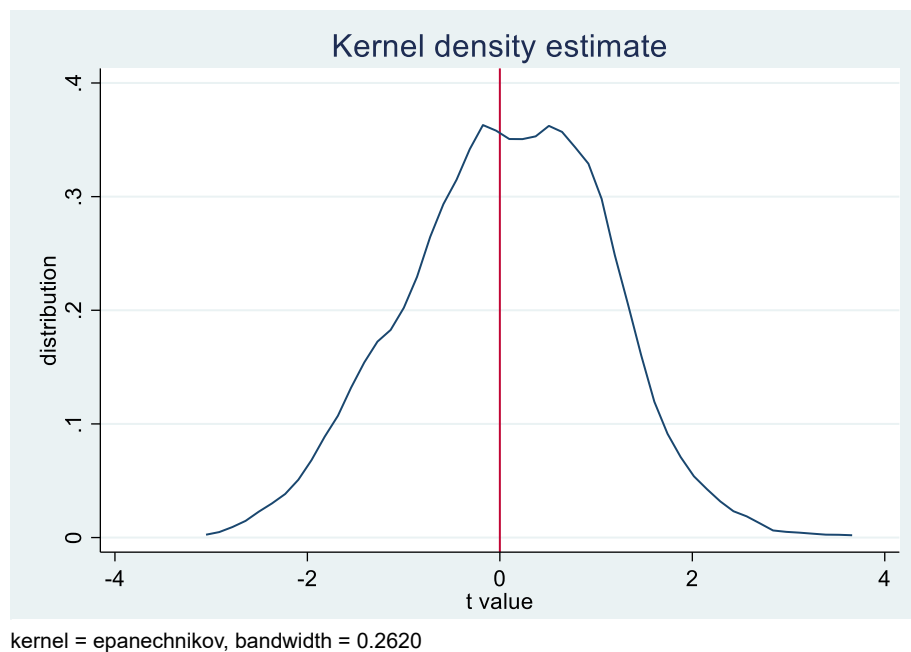
**Figure 1: Placebo test:  $R\_Round$**



**Figure 2: Placebo test:  $R\_R\&D$**



Source: authors' calculations

**Figure 3: Placebo test: *R\_Compliance***

Source: authors' calculations

**Table 12: Placebo test: Regression T-test values**

| Variables           | T-value |
|---------------------|---------|
| <i>R_Round</i>      | 0.828   |
| <i>R_R&amp;D</i>    | 0.253   |
| <i>R_Compliance</i> | 1.568   |

Notes: this table presents the result of T test for the T-value from the placebo regression. The null hypothesis of T test is that "the T-value obtained by sampling is not different from 0". The T test failed to reject the null hypothesis, indicating that there is no significant difference between the t-value from sampling and 0.

Source: authors' calculations

## 7. Conclusions and Recommendations

It is worth paying attention to whether the stock-led IPO listing review mechanism under the RIS in China's securities market can play a role in strengthening information disclosure and promoting market-oriented supervision. We use firms listed on the China's STAR market as a research sample and study the relationship between registration-based IPO review and corporate tax avoidance behaviors.



Our research uses the continuous difference in difference model to conduct empirical tests. The empirical results show that the increase in the IPO review intensity significantly inhibits the degree of corporate tax avoidance after the firm goes public. The inhibitory effect of IPO review on corporate tax avoidance is achieved by review on the characteristic of R&D activities and compliance of operation and information disclosure. We further find that the relationship between IPO listing review and corporate tax avoidance is affected by the nature of corporate property rights, the shareholding ratio of institutional investors, and the heterogeneity of listing standards.

The contributions of this paper are as follows. On the one hand, it explores whether the registration-based IPO review system aimed at strengthening the quality of information disclosure can affect the corporate post-listing business behavior by playing an external governance role. Our empirical results reveal that the registration-based IPO review system plays a positive role in improving the development quality of listed firms and provides an empirical basis for Chinese securities management agencies to optimize the registration-based IPO review process and improve the effectiveness of the listing review system. On the other hand, we expand the relevant research literature on comment letters and use China's unique research scenario to directly test how the comment letter mechanism affects the long-term governance level of enterprises and, furthermore, whether it has a real effect on the operation of enterprises.

Based on our research findings, we put forward the following policy recommendations. First, while paying attention to registration-based IPO review to improve the quality of information disclosure of listed firms, attention should also be paid to its role in reducing the corporate post-listing business risks by increasing external supervision pressure. Second, when conducting IPO listing review, it is necessary to strengthen targeted review on the corporate specific operating conditions. Specifically, the review on characteristic of R&D activities and the review on compliance of operation and information disclosure should be standardized and strict. Third, the main purpose of IPO review is to improve the quality of information disclosure, but the role played by the stock exchange in the process of review is not limited to “pose questions” but can also guide the issuers to actively disclose other key matters. Finally, in the process of IPO listing review, attention should also be paid to the joint role of external stakeholders to improve the effectiveness of the external supervision and governance mechanism. IPO listing review is not only a mechanism to improve the quality of listed firms, but also an important tool to promote high-quality development of the capital market.

## References

- Aboody, D., Lev, B. (2000). Information Asymmetry, R&D, and Insider Gains. *The Journal of Finance*, 55(6), 2747–2766. <https://doi.org/https://doi.org/10.1111/0022-1082.00305>
- Alm, J., Torgler, B. (2011). Do Ethics Matter? Tax Compliance and Morality. *Journal of Business Ethics*, 101, 635–651. <https://doi.org/https://doi.org/10.1007/s10551-011-0761-9>
- Beck, T., Levine, R., Levkov, A. (2010). Big Bad Banks? The Winners and Losers from Bank Deregulation in the United States. *The Journal of Finance*, 65(5), 1637–1667. <https://doi.org/https://doi.org/10.1111/j.1540-6261.2010.01589.x>
- Bonsall IV, S. B., Koharki, K., Watson, L. (2017). Deciphering Tax Avoidance: Evidence from Credit Rating Disagreements. *Contemporary Accounting Research*, 34(2), 818–848. <https://doi.org/https://doi.org/10.1111/1911-3846.12287>
- Boone, J. P., Linthicum, C. L., Poe, A. (2013). Characteristics of Accounting Standards and SEC Review Comments. *Accounting Horizons*, 27(4), 711–736. <https://doi.org/https://doi.org/10.2308/acch-50551>
- Bozanic, Z., Dietrich, J. R., Johnson, B. A. (2017). SEC Comment Letters and Firm Disclosure. *Journal of Accounting and Public Policy*, 36(5), 337–357. <https://doi.org/https://doi.org/10.1016/j.jaccpubpol.2017.07.004>
- Cassell, C. A., Dreher, L. M., Myers, L. A. (2013). Reviewing the SEC’s Review Process: 10-K Comment Letters and the Cost of Remediation. *The Accounting Review*, 88(6), 1875–1908. <https://doi.org/https://doi.org/10.2308/accr-50538>
- Chan, K. H., Luo, R., Mo, P. L. L. (2016). Auditors’ Constraining Effect on Tax Noncompliance at Different Book-tax Conformity Levels in a Transition Economy. *Journal of International Accounting Research*, 15(3), 1–30. <https://doi.org/https://doi.org/10.2308/jiar-51612>
- Chen, H., Tang, S., Wu, D., Yang, D. (2021). The Political Dynamics of Corporate Tax Avoidance: The Chinese Experience. *The Accounting Review*, 96(5), 157–180. <https://doi.org/https://doi.org/10.2308/tar-2017-0601>
- Chen, S., Chen, X., Cheng, Q., Shevlin, T. (2010). Are Family Firms More Tax Aggressive than non-Family Firms? *Journal of Financial Economics*, 95(1), 41–61. <https://doi.org/10.1016/j.jfineco.2009.02.003>
- Chen, S. S., Ho, K. Y., Ho, P. H. (2014). CEO Overconfidence and Long-term Performance Following R&D Increases. *Financial Management*, 43(2), 245–269. <https://doi.org/https://doi.org/10.1111/fima.12035>
- Chen, Y., Fan, Z., Gu, X., Zhou, L.-A. (2020). Arrival of Young Talent: The Send-down Movement and Rural Education in China. *American Economic Review*, 110(11), 3393–3430. <https://doi.org/https://doi.org/10.1257/aer.20191414>
- Chung, R., Firth, M., Kim, J.-B. (2002). Institutional Monitoring and Opportunistic Earnings Management. *Journal of Corporate Finance*, 8(1), 29–48. [https://doi.org/https://doi.org/10.1016/s0929-1199\(01\)00039-6](https://doi.org/https://doi.org/10.1016/s0929-1199(01)00039-6)

- Cunningham, L. M., Johnson, B. A., Johnson, E. S., Lisic, L. L. (2020). The Switch-up: An Examination of Changes in Earnings Management after Receiving SEC Comment Letters. *Contemporary Accounting Research*, 37(2), 917–944. <https://doi.org/https://doi.org/10.1111/1911-3846.12546>
- Demsetz, H. (1964). The Exchange and Enforcement of Property Rights. *The Journal of Law and Economics*, 7, 11–26. <https://doi.org/https://doi.org/10.1086/466596>
- Desai, M. A., Dharmapala, D. (2006). Corporate Tax Avoidance and High-powered Incentives. *Journal of Financial Economics*, 79(1), 145–179. <https://doi.org/https://doi.org/10.1016/j.jfineco.2005.02.002>
- Ettredge, M., Johnstone, K., Stone, M., Wang, Q. (2011). The Effects of Firm Size, Corporate Governance Quality, and Bad News on Disclosure Compliance. *Review of Accounting Studies*, 16, 866–889.
- Fang, V. W., Huang, A. H., Wang, W. (2017). Imperfect Accounting and Reporting Bias. *Journal of Accounting Research*, 55(4), 919–962. <https://doi.org/https://doi.org/10.1111/1475-679x.12170>
- Fischer, P. E., Verrecchia, R. E. (2000). Reporting Bias. *The Accounting Review*, 75(2), 229–245. <https://doi.org/https://doi.org/10.2139/ssrn.126369>
- Gallemore, J., Labro, E. (2015). The Importance of the Internal Information Environment for Tax Avoidance. *Journal of Accounting and Economics*, 60(1), 149–167. <https://doi.org/https://doi.org/10.1016/j.jacceco.2014.09.005>
- Garg, M. (2018). The Effect of Internal Control Certification Regulatory Changes on Real and Accrual-based earnings Management. *European Accounting Review*, 27(5), 817–844. <https://doi.org/10.1080/09638180.2018.1454336>
- Gietzmann, M., Marra, A., Pettinicchio, A. (2016). Comment Letter Frequency and CFO Turnover: A Dynamic Survival Analysis. *Journal of Accounting, Auditing & Finance*, 31(1), 79–99. <https://doi.org/https://doi.org/10.1177/0148558x15579493>
- Gietzmann, M. B., Isidro, H. (2013). Institutional Investors' Reaction to SEC Concerns about IFRS and US GAAP Reporting. *Journal of Business Finance & Accounting*, 40(7–8), 796–841. <https://doi.org/https://doi.org/10.1111/jbfa.12027>
- Gietzmann, M. B., Pettinicchio, A. K. (2014). External Auditor Reassessment of Client Business Risk Following the Issuance of a Comment Letter by the SEC. *European Accounting Review*, 23(1), 57–85. <https://doi.org/https://doi.org/10.1080/09638180.2013.774703>
- Graham, J. R., Hanlon, M., Shevlin, T., Shroff, N. (2014). Incentives for Tax Planning and Avoidance: Evidence from the Field. *The Accounting Review*, 89(3), 991–1023. <https://doi.org/https://doi.org/10.2308/accr-50678>
- Graham, J. R., Tucker, A. L. (2006). Tax Shelters and Corporate Debt Policy. *Journal of Financial Economics*, 81(3), 563–594. <https://doi.org/https://doi.org/10.1016/j.jfineco.2005.09.002>
- Griffith, R., Sandler, D., Van Reenen, J. (1995). Tax Incentives for R&D. *Fiscal Studies*, 16(2), 21–44. <https://doi.org/https://doi.org/10.1111/j.1475-5890.1995.tb00220.x>
- Gu, Z., Li, Z., Yang, Y. G. (2013). Monitors or Predators: The Influence of Institutional Investors on Sell-side Analysts. *The Accounting Review*, 88(1), 137–169. <https://doi.org/https://doi.org/10.2308/accr-50263>

- Hanlon, M., Krishnan, G. V., Mills, L. F. (2012). Audit Fees and Book-tax Differences. *Journal of the American Taxation Association*, 34(1), 55–86.  
<https://doi.org/https://doi.org/10.2308/atax-10184>
- Hasan, I., Hoi, C. K. S., Wu, Q., Zhang, H. (2014). Beauty is in the Eye of the Beholder: The Effect of Corporate Tax Avoidance on the Cost of Bank Loans. *Journal of Financial Economics*, 113(1), 109–130. <https://doi.org/https://doi.org/10.1016/j.jfineco.2014.03.004>
- Heese, J., Khan, M., Ramanna, K. (2017). Is the SEC Captured? Evidence from Comment-letter Reviews. *Journal of Accounting and Economics*, 64(1), 98–122.  
<https://doi.org/https://doi.org/10.1016/j.jacceco.2017.06.002>
- Himmelberg, C. P., Petersen, B. C. (1994). R & D and Internal Finance: A Panel Study of Small Firms in High-tech Industries. *The Review of Economics and Statistics*, 38–51.  
<https://doi.org/https://doi.org/10.2307/2109824>
- Johnston, R., Petacchi, R. (2017). Regulatory Oversight of Financial Reporting: Securities and Exchange Commission Comment Letters. *Contemporary Accounting Research*, 34(2), 1128–1155.  
<https://doi.org/10.1111/1911-3846.12297>
- Jones, S. L., Megginson, W. L., Nash, R. C., Netter, J. M. (1999). Share Issue Privatizations as Financial Means to Political and Economic Ends. *Journal of Financial Economics*, 53(2), 217–253.  
[https://doi.org/10.1016/s0304-405x\(99\)00021-5](https://doi.org/10.1016/s0304-405x(99)00021-5)
- Kim, J.-B., Li, Y., Zhang, L. (2011). Corporate Tax Avoidance and Stock Price Crash Risk: Firm-Level Analysis. *Journal of Financial Economics*, 100(3), 639–662.  
<https://doi.org/https://doi.org/10.1016/j.jfineco.2010.07.007>
- Law, K. K., Mills, L. F. (2015). Taxes and Financial Constraints: Evidence from Linguistic Cues. *Journal of Accounting Research*, 53(4), 777–819. <https://doi.org/https://doi.org/10.1111/1475-679x.12081>
- Levy, D. M., Terleckyj, N. E. (1983). Effects of Government R&D on Private R&D Investment and Productivity: A Macroeconomic Analysis. *The Bell Journal of Economics*, 551–561.  
<https://doi.org/https://doi.org/10.2307/3003656>
- Li, B., Liu, Z. (2017). The Oversight Role of Regulators: Evidence from SEC Comment Letters in the IPO Process. *Review of Accounting Studies*, 22, 1229–1260. <https://doi.org/10.1007/s11142-017-9406-2>
- Li, Z., Li, X., Xie, A. (2020). Independent Technical Directors and their Effect on Corporate Innovation in China. *China Journal of Accounting Research*, 13(2), 175–199.  
<https://doi.org/https://doi.org/10.1016/j.cjar.2020.06.001>
- Lowry, M., Michaely, R., Volkova, E. (2020). Information Revealed through the Regulatory Process: Interactions between the SEC and Companies ahead of Their IPO. *The Review of Financial Studies*, 33(12), 5510–5554. <https://doi.org/https://doi.org/10.1093/rfs/hhaa007>
- Magnis, C., Iatridis, G. E. (2017). The Relation between Auditor Reputation, Earnings and Capital Management in the Banking Sector: An International Investigation. *Research in International Business and Finance*, 39, 338–357. <https://doi.org/https://doi.org/10.1016/j.ribaf.2016.09.006>
- Merkley, K. J. (2014). Narrative Disclosure and Earnings Performance: Evidence from R&D Disclosures. *The Accounting Review*, 89(2), 725–757. <https://doi.org/https://doi.org/10.2308/accr-50649>

- Nunn, N., Qian, N. (2011). The Potato's Contribution to Population and Urbanization: Evidence from a Historical Experiment. *The Quarterly Journal of Economics*, 126(2), 593–650.  
<https://doi.org/https://doi.org/10.1093/qje/qjr009>
- Paligorova, T., Xu, Z. (2012). Complex Ownership and Capital Structure. *Journal of Corporate Finance*, 18(4), 701–716. <https://doi.org/https://doi.org/10.1016/j.jcorpfin.2012.05.001>
- Qian, N. (2008). Missing Women and the Price of Tea in China: The Effect of Sex-Specific Earnings on Sex Imbalance. *The Quarterly Journal of Economics*, 123(3), 1251–1285.  
<https://doi.org/10.1162/qjec.2008.123.3.1251>
- Rego, S. O., Wilson, R. (2012). Equity Risk Incentives and Corporate Tax Aggressiveness. *Journal of Accounting Research*, 50(3), 775–810.  
<https://doi.org/https://doi.org/10.1111/j.1475-679x.2012.00438.x>
- Schuldt, M., Vega, J. (2018). An Examination of SEC Revenue Recognition Comments and IPO Earnings Management. *Accounting Research Journal*, 31(3), 371–387.  
<https://doi.org/10.1108/arj-11-2015-0135>
- Tassey, G. (1996). Choosing Government R&D Policies: Tax Incentives vs. Direct Funding. *Review of Industrial Organization*, 11, 579–600. <https://doi.org/https://doi.org/10.1007/bf00214824>
- Warren III, M. G. (1987). Legitimacy in the Securities Industry: The Role of Merit Regulation. *Brook. L. Rev.*, 53, 129. <https://doi.org/https://doi.org/10.2139/ssrn.1621814>
- Wilson, R. J. (2009). An Examination of Corporate Tax Shelter Participants. *The Accounting Review*, 84(3), 969–999. <https://doi.org/https://doi.org/10.2308/accr.2009.84.3.969>
- Zhang, M., Lijun, M., Zhang, B., Yi, Z. (2016). Pyramidal Structure, Political Intervention and Firms' Tax Burden: Evidence from China's local SOEs. *Journal of Corporate Finance*, 36, 15–25.  
<https://doi.org/https://doi.org/10.1016/j.jcorpfin.2015.10.004>