Capital-Market Liberalization and Auditors' Accounting Adjustments:

Evidence from a Quasi-Experiment

Yingwen Deng

Renmin Business School, Renmin University of China

dengyingwen@ruc.edu.cn

Ole-Kristian Hope

Rotman School of Management, University of Toronto

and BI Norwegian Business School

okhope@rotman.utoronto.ca

Cyndia Wang

Sauder School of Business, University of British Columbia

cyndia.wang@sauder.ubc.ca

Min Zhang

Renmin Business School, Renmin University of China

minzhang@ruc.edu.cn

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Abstract

Using a shock to the Chinese capital market and unique and detailed audit-adjustment data, this paper investigates the effect of a capital-market liberalization program on auditors' adjustments to their clients' financial reports. Employing difference-in-differences tests with propensity-score matching and firm fixed effects, we find that the capital-market liberalization induced by the implementation of the Shanghai - Hong Kong Stock Connect affects auditors' professional judgment and leads to audit-adjustment changes stimulated by greater reputational and litigation risks for auditors. Specifically, while the liberalization significantly decreases the frequency and magnitude of upward audit adjustments, the probability of downward adjustments remains the same in most cases. Further evidence shows that the effect is more pronounced for companies with high trading volume from Hong Kong investors, audited by the largest audit firms, and with low financial transparency.

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1. Introduction

As important capital-market information intermediaries, external auditors are disciplined by both regulatory authorities and market forces. Prior literature has extensively examined the role of government-led regulatory supervision on auditing (e.g., DeFond, Wong, and Li 2000; Yang et al. 2001; Gul, Sami, and Zhou 2009; Chan and Wu 2011). However, the governing effect of the capital market is less investigated. One challenge faced by market-oriented research is the simultaneity between government-led regulatory actions (i.e., regulatory enforcement, legislation improvement, and other regime changes) and market environment transformation (i.e., participation and maturation of the market forces). There is sparse research that provides explicit evidence about whether and how market forces influence auditors' judgments and detailed decision making (e.g. the *adjustments* auditors make to their client firms' financial statements), especially in a weak institutional environment.

The establishment of the Shanghai - Hong Kong Stock Connect (henceforth, "Stock Connect") in 2014 provides a unique opportunity to investigate how market forces affect auditors. Specifically, the Stock Connect program allows Hong Kong investors to enter the Shanghai stock market to trade on connected stocks. Consequently, the program enhances the market forces of the connected mainland China companies by introducing more sophisticated market participants such as institutional investors, analysts, and media from the Hong Kong capital market. Further, we note that the Stock Connect increases the market forces'

engagement with the connected firms without changing other legislative or regime designs such as investor protection and corporate governance rules (Yoon, 2021).[1]. Therefore, the Stock Connect acts as a quasi-experiment, providing the researcher a chance to examine the potential increased market governance effect on auditors' behavior.

We argue that the Stock Connect can affect auditors' behavior through more rigorous supervision from the market, thereby potentially increasing the reputational and litigation risks of the auditors. As an emerging economy, China is known as a market with a relatively weak institutional environment (Chen, Sun, and Wu 2010; Piotroski and Wong 2012; Ke, Lennox, and Xin 2015). Although the Chinese government has implemented multiple market-oriented reforms, the scope of market-monitoring effects on economic activities is still insufficient. The Stock Connect introduces investors from the Hong Kong capital market who are more sophisticated in detecting irregularities (Ke et al. 2015) and in defending their rights. Moreover, this program attracts greater analyst coverage for mainland firms from Hong Kong. Analysts play an important role in both serving as external monitors and enhancing financial reporting quality (Yu 2008; Bradley et al. 2017). Similarly, Hong Kong media can help reinforce the monitoring carried out by market participants (Ke, Lennox, and Xin 2015). The market forces introduced by the Stock Connect are relatively more active and sophisticated, and we expect them to exert greater monitoring efforts on auditors of the affected companies.

Auditors make adjustments to their client firms' financial statements based on their professional judgments. Once auditors perceive greater surveillance from market forces after

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[1] Although the liberalization represents the government's commitment to opening up markets, there is a lack of specific legislation or administrative and regulatory details set up for this special Stock Connect program. The China Securities Regulatory Commission (CSRC) and the Hong Kong Securities Regulatory Commission (HKSRC) supervise the connected firms within their respective existing legal jurisdictions. Specifically, we do not observe any other changes in legislative or regime designs introduced by the Stock Connect.

the Stock Connect, we expect them to change their judgments and use their discretion to protect themselves from lawsuits, which could lead to different audit adjustments (henceforth, **AA**) patterns. Specifically, because investors are more sensitive and less tolerant to income-increasing earnings management than to income-decreasing earnings management, auditors may significantly decrease their upward AA and increase downward AA within their discretion after the Stock Connect. In other words, the benefits of decreasing upward AA and increasing downward AA increase for the auditors after the Stock Connect.

However, we note that although the benefits of decreasing upward AA and increasing downward AA increase after the Stock Connect, they may not necessarily reach the point where the benefits exceed the costs. The reasons are twofold. On one hand, the informational disadvantages and short-term investment strategy of some foreign investors may restrain them from executing effective supervision on the auditors, making it not beneficial enough for the auditors to change their audit adjustment strategies by decreasing upward AA and increasing downward AA. On the other hand, decreasing upward AA and increasing downward AA will incur extra costs to auditors, including negotiation costs and costs of potentially losing customers. Specifically, maintaining the relationship with clients is critical given that the Chinese audit market is fiercely competitive, making the costs especially high. Moreover, the relatively weak institutional environment in China makes it comparatively costlier for auditors to sacrifice their client-retention. Therefore, although the benefits of reducing upward AA and increasing downward AA increase after the Stock Connect as compared to before the Stock Connect, these benefits may not be high enough to outweigh the costs of reducing upward AA and increasing downward AA, respectively.

To test whether and how capital-market liberalization affects auditors' AA behavior, we use a difference-in-differences, multinomial logit, and propensity-score matching (PSM) research design alongside a detailed and unique audit-adjustment dataset. After controlling for a number of variables motivated by prior research and including *firm fixed effects* that further control for time-invariant potential correlated omitted variables, we find that the Stock Connect exerts an impact on auditors' judgments and adjustment decisions. However, whereas the Stock Connect significantly decreases the frequency and magnitude of upward AA, its effect on downward AA is largely insignificant except when there is high enough attention and supervision from foreign investors.[2] Further evidence shows that the market-supervision effect is more pronounced for companies with higher trading volume by Hong Kong investors, for companies audited by Big-10 audit firms, and for companies with a lower level of financial transparency. The cross-sectional results further corroborate our argument that the increased supervision of the market leads auditors to change professional judgment and use their discretion in audit adjustments by increasing the reputational and litigation risks of the auditors. Moreover, additional analyses exclude alternative possibilities that our findings are driven by changes in clients' pre-audit financial reporting quality, internal control, or auditor changes.

Our study contributes to research and practice in four ways. First, this study furthers the literature on the determinants of auditor behavior by providing evidence on the governing effect that market forces have on auditing. Prior literature provides some evidence about the supervision from market forces by examining the association between the existence or strength

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[2] For the average firm, the probability or magnitude of downward AA does not change after the Stock Connect. However, additional analyses show that for companies with high enough attention and supervision from the foreign investors, their auditors do perceive the benefits of making more downward AA to exceed the costs and thus make more downward AA.

of a specific type of market force and audit behavior (e.g., Kane and Velury 2004; Cassell and Drake 2011; Fang, Haw, Yu, and Zhang 2014; Hope, Hu, and Zhao 2017; Gong, Gul, and Shan 2018; Cahan, Chen, and Wang 2021). However, because the existence or strength of these market forces is typically endogenous in some unobservable firm or economy characteristics that may be correlated with auditor behavior, it is difficult for these studies to support causal inferences. Moreover, it is important to examine how different types of market forces together influence auditor behavior. Based on an exogenous shock to the Chinese capital market, we are able to identify a causal relation between the overall market participants' governing impact and auditors' audit-adjustment behavior.

Second, our study adds to our understanding of the auditors' trade-off between costs and benefits, which leads to asymmetric behavior of auditors. We use unique audit-adjustment data provided (in confidence) by the Chinese Institute of Certified Public Accountants (CICPA). Our work is the first to capture *asymmetric* audit-adjustment behavior empirically, a conspicuous reflection of auditors' conflict of interest. Specifically, we find that the implementation of the Stock Connect significantly decreases the frequency of upward AA, while the probability of downward AA remains the same in most cases.

Third, our paper contributes to research on the effects of market self-governance or the monitoring effects of market participants. Employing a quasi-experiment, we separate the change of market forces from other institutional environment or government enforcement changes, thereby providing more direct evidence on the impact of market liberalization. Using unique AA data, we find that capital-market liberalization influences auditors' professional judgments and lead to fewer upward AA, indicating that auditors become more prudent to some

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extent. However, this effect is limited to upward AA but not downward AA. Overall, our findings show that less constrained participation of the market forces is necessary but not sufficient for economic governance.

Fourth, this article offers policy implications. We empirically show that market liberalization is beneficial but likely not sufficient in an emerging market with weak institutional environment such as China. Therefore, government-led regulatory measures and the market mechanism should complement each other. This is relevant for other market liberalization policies such as the Shenzhen - Hong Kong Stock Connect and the Shanghai-London Stock Connect, among others.[3]

2. Brief Background on the Stock Connect

We use the opening of the Shanghai-Hong Kong Stock Connect in 2014 to investigate the effect of capital-market liberalization on auditor behavior. Before 2014, foreign access to the Chinese capital market was under tight control. Only selected, government-approved foreign institutional investors were allowed to have access to shares listed on the mainland Chinese capital market ("A-shares") through the Qualified Foreign Institutional Investor Program (QFII).[4] However, because QFII applicants need to satisfy many conditions and some of them are meant to limit short-term speculation, studies find that QFII failed to make a significant impact on the stock market and its participants (e.g., Tam et al. 2010). In addition, some firms

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[3] Additionally, we add to research on China, the largest emerging economy, and the second-largest economy in the world.

[4] In 2002, to partially open up the capital markets, China established a QFII mechanism. This system allows foreign investors who meet certain conditions to enter the Chinese securities market. After being approved by the China Securities Regulatory Commission (CSRC), the QFIIs will remit a certain amount of foreign exchange, convert it into local currency, and invest in local securities market through a special account that is under strict supervision.

(A+H firms) are listed on both the mainland Chinese capital market (A share) and the Hong Kong capital market (H share). However, the effect of the cross-listing mechanism has been limited given the low number of stocks involved.[5]

In 2014, to further promote the opening of China's capital market by introducing foreign investors, the China Securities Regulatory Commission (CSRC) and the Hong Kong Securities Regulatory Commission (HKSRC) reached an agreement to jointly promote capital-market liberalization through the establishment of the Stock Connect. On November 17, 2014, stock trading under the Stock Connect formally commenced. Starting from March 2, 2015, foreign investors were further allowed to short A-shares via the Stock Connect.

The Stock Connect is a trading interconnection mechanism between the Shanghai and Hong Kong stock markets.[6] It allows investors from both exchanges to buy and sell stocks listed on the other exchange within a prescribed range through local securities companies (or brokers). The Stock Connect consists of two trading mechanisms: Shanghai Stock Connect and Hong Kong Stock Connect. The Shanghai Stock Connect, on which we focus, allows investors in Hong Kong and other parts of the world to trade on connected stocks that mainly consist of the constituent stocks of the Shanghai Stock Exchange (SSE) 180 Index, the 380 Index, and

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[5] Despite that, both the QFII-invested firms and the A+H firms are exposed to forces from more sophisticated markets before the opening of the Stock Connect, making them more susceptible to the supervision of the market participants. We control for the potential influence of QFII-invested and A+H firms through the inclusion of firm fixed effects. As robustness tests, we include indicator variables representing the QFII-invested and A+H firms together with industry fixed effects. In untabulated analyses, we alternatively delete the QFII-invested and A+H firms and the conclusions are unaltered.

[6] Yoon (2021) provides a useful description of the Stock Connect.

stocks that are listed on both the Shanghai Stock Exchange and the Hong Kong Stock Exchange (i.e., the A+H stocks), excluding stocks on the risk alert board and stocks not traded in RMB.[7,8]

The opening of the Stock Connect provides an opportunity to investigate the effect of market liberalization on auditor behavior because it improves the information environment of the connected firms. Specifically, the establishment of the Stock Connect enhances the market forces faced by the connected companies in mainland China by introducing more sophisticated market participants, such as institutional investors and analysts from Hong Kong, as well as mass media. Appendix 1 provides some illustrations about the penetration of Hong Kong investors into the mainland capital market after the Stock Connect. As shown in Figures A and B of Appendix 1, the frequency of Hong Kong Securities Clearing Company Limited (HKSCC) appearing in the top-10 shareholders increases sharply after the Stock Connect, suggesting that the number of Hong Kong investors in the mainland capital market increases dramatically after the event.[9] Further, as shown in Appendix 2, market supervision from media attention is also

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[7] Because the Hong Kong investors are more sophisticated than investors in mainland China, the participant eligibilities set for the investors in the two markets are slightly different. For example, while Hong Kong investors and overseas investors in Hong Kong are allowed to trade any Stock Connect securities through Shanghai Stock Connect, only mainland institutional investors and those individual investors who satisfy the eligibility criteria (i.e., individual investors who hold an aggregate balance of not less than RMB 500,000 in their securities and cash accounts) can trade Hong Kong Securities via Hong Kong Stock Connect (Hong Kong Stock Exchange: Information Book for Investors. September 3, 2018). Trading via the Stock Connect is subject to daily and aggregate quotas. The daily quota for the net buying value of cross-border trades is 13 billion RMB (approximately 2 billion USD) for Shanghai-listed shares and 10.5 billion RMB (approximately 1.6 billion USD) for Hong Kong-listed shares, each of which represents approximately one fifth of the daily turnover in each market. The daily quota is not a daily cap on total inflows, but a daily limit on the difference between buying and selling, meaning that the amount of money that can enter the Shanghai and Hong Kong markets on each trading day is much higher. The two daily quotas were increased to higher limits later. The aggregate quota is 300 billion RMB (approximately 45 billion USD) for Shanghai-listed shares and 250 billion RMB (approximately 38 billion USD) for Hong Kong-listed shares, respectively. The aggregate quota for Shanghai Connect was abolished on August 16, 2016.
[8] The SSE 180 Index selects 180 representative sample stocks across industries through a set of scientific and objective methods with the purpose of establishing a benchmark index that reflects the general picture and operation status of Shanghai stock market. The SSE 380 Index comprises additional 380 companies with moderate size, good growth prospects, and industry representativeness, hoping to comprehensively reflect the overall performance of a group of emerging blue-chip companies on SSE. The SSE 180 and 380 indices adjust the sample stocks every six months, and the adjustment takes effect in June and December each year, respectively.
[9] As the HKSCC is responsible for clearing, settlement, and the provision of depository, nominee, and other related services for the trades initiated by the investors in Hong Kong and placed in the Shanghai Stock Exchange, the stock holdings of A-shares ascribed to the HKSCC are good indicators of Hong Kong investors' investment

significantly enhanced after the Stock Connect. Therefore, we view the Stock Connect as a useful quasi-experiment to examine the governance effect of the market on auditors' behavior.

3. Related Literature

Auditors are monitored by both regulatory authorities and market forces. These two supervision sources constrain the behaviors of auditors by imposing engagement risk, including reputation risk, litigation risk, and regulation risk (e.g., Knechel, Naiker, and Pacheco 2007; DeFond and Zhang 2014).

Prior literature has examined the effect of government-led supervision on audit quality. One stream of research focuses on the effect of the legal and regulatory environment. A weaker legal environment lowers the general litigation costs of auditors (Choi and Wong, 2007). As a result, markets with higher investor protection have higher audit-resource investments, and thus higher audit fees (Newman, Patterson, and Smith 2003).[10] Using firms from 42 countries, Francis and Wang (2008) find a positive association between a country's investor protection and earnings quality, a correlation that is only salient for firms with Big-4 auditors. In addition, cross-country evidence shows that the cross-listing fee premium increases and audit quality improves with the strength of the legal regime (Choi, Kim, and Simunic 2009). Another line of literature explores the impact of supervision from regulatory authorities on audit quality. For example, several studies investigate whether PCAOB inspections improve audit quality (e.g., Gramling, Krishnan, and Zhang 2011; Abbot, Gunny, and Zhang 2013; Lamoreaux 2016).

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in mainland China.

[10] Chen, Sun, and Wu (2010) find that regulatory improvements in China cause auditors to prioritize the costs of compromising quality over the economic benefits gained from important clients.

In China, investor protection and the institutional environment are relatively weak (e.g., Allen, Qian, and Qian 2005). Piotroski and Wong (2012) argue that local investors do not create a market demand for high-quality reports. As a result, market forces are comparatively weak and the government plays an important role in controlling audit quality through licensing and disciplinary actions. The CSRC is the regulatory authority that enforces securities laws and regulations and thus takes a salient part in investigating suspected accounting and auditing misconducts. Under this government-led regulatory environment, the Chinese government has improved the audit quality of listed companies by promoting audit-market reforms, introducing international auditing standards, promoting the decoupling of firms, and encouraging mergers (DeFond, Wong, and Li 2000; Yang et al. 2001; Gul et al. 2009; Chan and Wu 2011).

The above studies are about the impact of government-led supervision on auditors' behaviors. We argue that the market forces can also exert a monitoring role in the capital market. For example, as primary users of audit reports, investors' supervision role is potentially very important (Kane and Velury 2004). The literature also documents an association between press coverage and auditor behavior (Frost 1991; Mutchler, Hopwood, and McKeown 1997; Joe 2003; Penn 2012; Dhaliwal et al. 2017; Gong et al. 2018; Burke, Hoitash, and Hoitash 2019; Cahan et al. 2021). Other studies examine the relation between analyst following (Fang et al. 2014) and short interest (Cassell and Drake 2011; Hope et al. 2017) and auditor behavior. However, prior research investigating the supervision from market forces often suffers from limitations in identifying a causal relation, mainly because the existence or strength of the market forces is typically endogenous in some unobservable firm or economy characteristics that may be correlated with auditor behavior. Moreover, few studies examine the detailed

decisions of auditors in their professional practices and, in particular, their adjustments to their clients' financial statements. We are interested in what effects (if any) capital-market liberalization and thus a surge in overall market-force participation has on auditors' professional judgment and thus audit adjustment behavior. The Stock Connect program, a milestone of the Chinese capital market liberalization, provides an opportunity to investigate this question.

Recent research documents important economic consequences of the Stock Connect, including more cross-border capital flows (Burdekin and Siklos 2018; Wang and Chong 2018; Yoon 2021), lower stock-price disparity and stronger price co-movement (Chan and Kwok 2016; Wang and Chong 2018), and bi-directional volatility spillover (Huo and Ahmed 2017; Lin 2017). In sum, the Stock Connect induces stock-market integration and co-movement of the Shanghai and Hong Kong stock markets.[11] Further, Yoon (2021) examines Chinese firms' use of public and private communication channels in response to the market-liberalization program and finds that affected firms increase the number of selective private meetings hosted by major foreign investment banks but do not respond via public communication channels.[12]

We focus on whether and how the less constrained participation of market forces affects auditors, especially when considering the trade-off between adjustment costs and benefits. Our

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[11] Some papers also find that the Stock Connect increased the pricing differential between H-shares listed in Hong Kong and A-shares listed in Shanghai (Huang and Lin 2016; Yao, He, Chen, and Ou 2018), lifted the conditional variance and volatility of the Shanghai stock market (Huo and Ahmed 2017; Liu, Wang, and Wei 2020), and increased the turnover rate in the Shanghai stock market (Liu, Wang, and Wei 2020). In addition, some other studies find contradictory results about the impact of the Stock Connect on Shanghai stock market. For example, extant literature finds that the Chinese stock market may either be more greatly segmented from the world (Yao, He, Chen, and Ou, 2018) or more closely connected to the stock markets in the other parts of the world (Ma, Rogers, and Zhou, 2020) after the Stock Connect.

[12] Ma, Rogers, and Zhou (2020) find that firm-level investment of the connected firms is relatively more adversely affected by the U.S. monetary policy shocks after the event, indicating that capital-market liberalization increases firms' exposure to the negative consequences of global financial cycles.

research complements and adds to prior studies from three perspectives. We investigate the effect of market forces on auditor behavior by using a unique setting that significantly enhances the market forces' monitoring effects without significantly changing other legislative or regime designs. In addition, we investigate the detailed decision making of auditors by examining *directional audit adjustments* and provide evidence on whether auditors face asymmetric costs and benefits when making these decisions. Moreover, we use a regulatory shock to the capital market to examine the impact of market forces maturation as induced by capital-market liberalization on auditor behavior, providing a relatively strong test (DID with PSM and firm fixed effects) with results that are easy to interpret.

4. Hypothesis Development

Adam Smith's "invisible hand" theory refers to the self-regulating capacity of free markets (Smith, 1776). Through the mechanism of supply and demand, the market is assumed to provide the optimal allocation of resources. However, the market in China is highly regulated by the government. In that sense, the market mechanism is relatively less influential than in Western countries. In addition, the market for financial analysts is comparatively less developed, and institutional ownership is low (Chen, Martin, and Wang 2013; Yoon 2021). Moreover, institutional investors and brokerage firms often have close connections with the government, which implies that they have lower incentives to exert monitoring efforts and to protect retail investors. Finally, the media in mainland China is less active in terms of investigating and publicizing accounting scandals than their counterparts in Hong Kong (Ke et al. 2015). As a result, in an emerging market such as China, auditors are faced with lower

reputation and litigation risk from market supervision.

The Stock Connect introduces a shock to the mainland Chinese capital market. This program allows Hong Kong investors to enter the Shanghai stock market and trade specific stocks listed on the Shanghai Stock Exchange. This introduces market forces from Hong Kong and other parts of the world to the connected companies. As a result, market participants can potentially play a more important role in supervising auditors. First, as the Hong Kong market is more mature and market-oriented, Hong Kong investors are more sophisticated, meaning that they are more capable of detecting irregularities (Ke et al. 2015) and have a stronger sense of rights protection such as actively pursuing their claims against auditors. Therefore, we expect Hong Kong investors to play an active monitoring role in the Chinese stock market, inducing the auditors to be more careful when performing audits. Ting, Yen, and Chiu (2008) provide evidence supporting this argument. Specifically, they find that audit opinions are more conservative in signaling potential default risk for the firms with higher foreign institutional ownership in the post-QFIIs era, suggesting a monitoring role of more sophisticated investors. Further, we argue that foreign investors are likely to require a higher quality audit to make up for their information disadvantage, thus leading auditors to alter their behavior. Studies lend support to this argument. For instance, He et al. (2016) observe a decrease in the percentage of B-share firms audited by Big 4 auditors after the segmented B-share market was opened to investors in mainland China in 2001. They argue that the decline in demand for high-quality audits (Big-4 auditors) is attributable to decreases in foreign ownership of these B-share firms. Similarly, Kuo et al. (2016) find that client firms with dual shares (A and B/H shares) are more likely to choose Big-4 audit firms as their succeeding audit firms once the audit licenses of

their prior audit firms are terminated and suspended. This phenomenon likely points to higher demand for audit quality by more sophisticated investors. Second, with the liberalization of the Chinese capital market, auditors are also subject to pressure from Hong Kong analysts. As analysts play an important role in serving as external monitors and detecting managers' misreporting (Yu 2008; Bradley et al. 2017), the introduction of Hong Kong analysts can indirectly affect the auditors of the connected companies. Third, the Stock Connect program also helps to attract more coverage from media, which helps to reinforce the monitoring carried out by the market participants. Put simply, the media can help enforce the market forces faced by the auditors of the connected companies.

Taking the above factors into consideration, auditors of the connected companies face tougher surveillance from market participants after the establishment of the Stock Connect program. As stipulated in Several Provisions of the Supreme People's Court on Hearing Civil Tort Compensation Cases Invoking Accounting Firms in Auditing Activities (Legal Interpretation [2007] No. 12), if a public accounting firm is found to have caused losses to interested parties due to its negligence in auditing business, it shall undertake its legal liability for compensation according to the magnitude of its negligence. Therefore, auditors are legally responsible for the post-audited earnings of the firms. If the auditors fail to perform their duties, their failures are more likely to be uncovered, and they are more likely to bear reputation and litigation losses. In Appendix 3, we provide examples of legal provisions and civil litigation cases where investors successfully sue auditors and where the auditors face considerable litigation risks by investors in China. Consequently, the auditors may respond by using their discretion in professional judgment. In particular, once auditors perceive stronger surveillance

from market forces after the Stock Connect and thus a higher probability of being sued, they may form relatively conservative judgments on what the post-audited earnings should be like.

Theory posits that external circumstances (i.e., social forces from outside the firm) play a normative and restrictive role in individual behavioral decisions (Milgram, Bickman, and Berkowitz 1969; Cialdini, Kallgren, and Reno 1991). Audit firms are examples of human capital enterprises. Therefore, not only are audit firms directly affected by laws, regulations, and industry norms, but each individual auditor is also subject to community codes of conduct such as reputation mechanisms and trust costs (Coleman, 1994; Portes 1998; Akerlof 2007; Hilary and Huang 2013). In particular, auditors are subject to confirmation proneness - in the evaluation of evidence auditors are more sensitive to evidence that confirms their initial hypothesis no matter whether the evidence involve irregularities or not (e.g., Pei, Reed, and Koch 1992; Bamber, Ramsay, and Tubbs 1997). Further, they make AA to the financial statements based on their own *judgments* within the range of professional criteria (Backof, Bamber, and Carpenter 2016; Seckler, Gronewold, and Reihlen 2017). Although auditors' adjustments of the pre-audited earnings are not observable to investors, they may act as an instrument of the auditors, allowing the auditors to implement their judgments by transforming pre-audited earnings to post-audited earnings. Specifically, because investors are more sensitive and less tolerant to income-increasing earnings management than to income-decreasing earnings management (e.g., Chy and Hope 2021), auditors faced with more supervisory market forces may decrease the upward AA and increase the downward AA after the event. Such strategies can make the audited firms less likely to bias their financial statements, which can reduce the reputation and litigation risks (including the associated

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lawsuit losses and potential business losses faced by the auditors), where reduction of risks and losses represent significant benefits to the auditors. Therefore, the benefits of decreasing upward AA and increasing downward AA increase for the auditors after the Stock Connect.

However, the benefits of decreasing upward AA and increasing downward AA might not be able to reach a tipping point where they exceed the costs such strategies bring. The reasons are twofold. First, it is possible that the monitoring effectiveness of the market forces induced by the Stock Connect is insufficient for some reasons, making it *not beneficial enough* for the auditors to change their audit adjustment strategies by decreasing upward AA and increasing downward AA. Compared to mainland China investors who are better-informed of the domestic stocks, foreign investors are faced with informational disadvantages due to physical distance, linguistic, and cultural reasons, making it more difficult for them to detect irregularities and exert supervision (Coval and Moskowitz 1999; Chan, Menkveld, and Yang 2008). Moreover, the Stock Connect may attract short-term speculative capital inflow. The "hot money" foreign investors tend to pursue investments with high short-term profits instead of focusing on long-term performance (Brennan and Cao 1997), possibly resulting in less effective threats to the auditors. Furthermore, the speculative capital may aggravate the stock-price volatility of the connected companies, and reduce the information efficiency of the capital market. Therefore, because of both ability and incentive concerns, the foreign investors invited by the Stock Connect may not exert effective surveillance on the auditors, making the benefits for the auditors to decrease upward AA and increase downward AA not lucrative enough to conquer the costs. Second, decreasing upward AA and increasing downward AA will likely impose significant extra costs on the auditors, making it *too costly* for the auditors to alter their

audit adjustment strategies. The salient costs mainly come from client resistance and may include negotiation costs and potential customer loss. Given the competitive nature of the audit market, maintaining the relationship with clients is critical to the revenues of audit firms. Moreover, the weaker institutional environment in China makes it comparatively costlier for the auditors to sacrifice client retention for their independence (Chen, Sun, and Wu 2010; Piotroski and Wong 2012; Ke, Lennox, and Xin, 2015). Therefore, even though the benefits of reducing upward AA and increasing downward AA increase to a considerable degree after the Stock Connect, these benefits may not necessarily outweigh the significant costs of doing so. In particular, when weighing the benefits of decreasing upward AA and increasing downward AA against their respective costs, there can be four potential outcomes after the Stock Connect.

First, when the benefits of decreasing upward AA and increasing downward AA both exceed their respective costs, we should observe that auditors decrease upward AA and increase downward AA (see Figure 1, Case 1). In this case, the perceived surveillance from the market forces brought in by the market liberalization is threatening enough to make the benefits of decreasing upward AA and increasing downward AA outweigh the costs incurred by such strategies. Under this scenario, auditors will make fewer upward AA and more downward AA.

Second, if the benefits of decreasing upward AA and increasing downward AA are both smaller than their respective costs, auditors will not decrease upward AA or increase downward AA. After the Stock Connect, the auditors, who are faced with greater surveillance from the market forces, may protect themselves by making fewer upward AA and more downward AA. However, if the benefits of making these changes are smaller than the costs incurred by either decreasing upward AA or increasing downward AA, the supervision role played by the market

forces may be offset and could be limited. In particular, auditors may not change their AA patterns at all (see Figure 1, Case 2).

Third, when the benefits of decreasing upward AA surpass the costs while the benefits of increasing downward AA do not, auditors will make fewer upward AA, while keeping the downward AA unchanged (see Figure 1, Case 3). Managers have strong incentives to manage their earnings upward. Research supports the idea that companies generally tend to engage in upward earnings management (Burgstahler and Dichev 1997; Jacob and Jørgensen 2007; Kerstein and Rai 2007). From this perspective, the costs of increasing downward AA for the auditors can exceed the costs of reducing upward AA given that forcing client firms to reduce their reported earnings is likely against the clients' wishes. Hence, compared to the benefits of increasing downward AA, the benefits of decreasing upward AA are more likely to exceed the costs. In contrast, auditors have more decision-making power and discretion when it comes to upward adjustments. Therefore, auditors may make fewer upward AA while they do not change downward AA.

Fourth, if the benefits of reducing upward AA do not exceed the costs while the benefits of increasing downward AA do, auditors may make more downward AA while keeping the upward AA unchanged (see Figure 1, Case 4). Although the costs of reducing upward AA can be smaller than the costs of increasing downward AA, the benefits of reducing upward AA can also be smaller than the benefits of increasing downward AA. Hence, since the benefits and costs of increasing downward AA are both larger than those of decreasing upward AA, it is possible that the benefits of increasing downward AA are more likely to outweigh the costs but the benefits of decreasing upward AA are not. Therefore, it is possible that auditors make more

downward AA while keeping the upward AA unchanged.

Based on the above discussion, under pressure from both market supervision and client resistance, auditors may make four kinds of changes to their audit adjustments when considering the respective costs and benefits. Therefore, we propose the following null hypothesis:

Hypothesis: The Shanghai-Hong Kong Stock Connect program has no effect on auditors' audit adjustments.

5. Research Design

5.1 Model Specification

To assess how the capital-market liberalization induced by the Stock Connect affects auditors' AA behavior, we employ a difference-in-differences model. To capture the detailed decision process of the auditors in their professional engagement, we use proprietary audit-adjustment data provided by CICPA. CICPA and the Ministry of Finance of China require the audit firms to confidentially report their AA made for each client annually. Therefore, the AA data present detailed numbers about auditors' adjustments to client firms' reported earnings, reflect the real contributions of the auditors, and provide us with an opportunity to probe into auditor responses that are difficult to capture by other measures. Prior studies that have employed these data include Firth, Rui, and Wu (2012), Lennox, Wu, and Zhang (2014), Lennox, Wu, and Zhang (2016), and Lennox, Wang, and Wu (2018). Given that there are three different AA outcomes (upward, downward, or no adjustment), we use a multinomial logit

model with firm fixed effects (e.g., Lennox, Wu, and Zhang, 2014; 2018).[13] Our regression

uses a linear predictor function *f(k,i)* to predict the probability that observation *i* has outcome

k and is of the following form:

$$f(k,i) = \alpha_{0,k} + \alpha_{1,k}\,Post \times Treat_{1,i} + \alpha_{n,k}\,Controls_{n,i} + Year\ Fixed\ Effects + Firm\ Fixed\ Effects$$

$$+\ \varepsilon_t \tag{1}$$

where *k* indexes the kth outcome of the dependent variable. Specifically, our dependent variable

Adjust equals one if the AA for a particular firm in a particular year is downward. *Adjust* equals

two if the AA is upward. The no-adjustment observations whose *Adjust* equals zero are used as

the benchmark. *Post* is an indicator variable that takes the value of one if the firm's fiscal year

falls in the year 2014 or 2015, zero otherwise. *Treat* is an indicator variable that equals one if

a stock is on the list of the connected stocks of the Stock Connect ("the stock list" hereafter),

zero otherwise.[14] *Post×Treat* is the interaction term of *Post* and *Treat*. The year fixed effects

subsume the main effect of *Post* and the firm fixed effects subsume the main effect of *Treat*.[15]

We control for several firm-level and auditor-level characteristics that may affect audit

adjustments (e.g., Lennox, Wu, and Zhang, 2014). The firm-level controls include firm size

(*Size*), leverage (*LEV*), return on assets (*ROA*), board size (*Board Size*), CEO-Chairman duality

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[13] Considering the incidental parameter problem in maximum-likelihood estimation with firm fixed effects (e.g., Lancaster, 2000), we also conduct OLS regressions. The inferences are consistent (untabulated).

[14] The connected stocks mainly consist of the constituent stocks of the Shanghai Stock Exchange 180 Index and 380 Index, as well as the A+H stocks. According to our data, 39 firms were added to the constituent stocks of Shanghai Stock Exchange 180 Index and 380 Index in June 2014 and were subsequently allowed to be traded in Hong Kong market via the Stock Connect in our sample. Firm fixed effects control for any effect of joining Shanghai Stock Exchange 180 and 380 indices to some extent.

[15] Inferences are unaffected if we remove the year fixed effects (and replace with Post) and if we replace the firm fixed effects with industry fixed effects (untabulated).

(*Dual*), operating cash flow (*OCF*), book-to-market ratio (*BM*), and sales growth rate (*Growth*). In terms of audit-related variables, we include an indicator for whether the firm received a modified audit opinion the previous year (*LagMAO*), an indicator for whether the audit firm is a Big-10 firm (*Big10*), an indicator for whether the signing auditor is a partner (*Partner*), an indicator for whether the signing auditor has a bachelor's degree or higher (*Degree*), and an indicator for whether at least one of the signing auditors is female (*Female*). Importantly, we include *client-firm fixed effects* to absorb time-invariant firm characteristics. These fixed effects provide strong control for unknown sources of endogeneity at the firm level.[16] Appendix 4 provides definitions of all variables.

5.2 Data Sources and Sample Selection

We test our predictions using Chinese listed firms during the period from 2012 to 2015. We obtain the Stock Connect trading data and financial statement items from the China Stock Market and Accounting Research (CSMAR) database. The AA data are provided directly by the CICPA. Our sample period ends in 2015 as the AA data end in 2015. To keep our sample period symmetric around the opening of the Stock Connect on November 17, 2014, the beginning year of our sample is 2012, keeping two fiscal-year ends before and after the treatment date.

We delete stocks that appear but do not stay on the connected stock list throughout the whole sample period to alleviate the potential contemporaneous influence of the stock indices.

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[16] Although we view our firm fixed effects structure as econometrically strong, in untabulated analyses we alternatively employ industry fixed effects or additionally include audit-firm fixed effects. The conclusions are unchanged.

We exclude firm-years if any variables in the main regression model are missing. We also exclude stocks that belong to the financial industry. In addition, we exclude stocks that have missing observations during the sample period to obtain a balanced sample (i.e., we require data for all sample years). Given our restrictions, we have 8,264 firm-year observations to test our main model, including 412 connected firms and 1,654 control firms.[17] All continuous variables are winsorized at the 1% and 99% levels. Panel A of Table 1 shows the detailed sample-screening process.

6. Results

6.1 Summary Statistics

We provide descriptive statistics for the AA variables and control variables in Panels B and C of Table 1, respectively. As can be seen in Panel B, about 39.65% (14.73%) [45.62%] of firms have downward (upward) [no] AA during our sample period. Columns (3) and (6) in Panel C show that most of the control variables between the treatment group and the control group are significantly different either before or after the Shanghai-Hong Kong Stock Connect event. However, the difference-in-differences results of these variables, as shown in Column (8) of Table 1, are insignificant, indicating that the previous significant differences are not affected by the Stock Connect event. Therefore, these variables are not salient enough to influence the effectiveness of our research design.[18]

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[17] When there is no variation in the dependent variable over time for a specific firm, these observations are automatically deleted in the firm fixed-effects specification. This explains the lower number of observations for later tests.

[18] We also examine the correlation matrix of the variables used in our model. Untabulated results show that their relations are consistent with our expectation and that there is no evidence of severe multicollinearity. Variance inflation factors provide corroborating evidence.

6.2 Main Results

Table 2 shows the univariate results of the full sample. According to Panel A, auditors of the connected firms significantly reduce their frequency of upward AA after the Stock Connect (-0.038, t=-2.16). In contrast, auditors of the control firms do not significantly change their upward AA (-0.003, t=-0.35) after the Stock Connect. The univariate difference-in-differences results show that compared to the control group companies, companies in the treatment group significantly reduce their probability of upward audit adjustments (-0.035, t=-1.77) after the event. However, as shown in Panel B, the difference-in-differences change of the downward AA is insignificant (0.009, t=0.32), indicating that while there is a significant difference in the frequency of downward adjustments between the treatment firms and control firms before the event, the difference does not change after the Stock Connect. These results provide preliminary evidence that auditors make fewer upward AA for treated firms after the Stock Connect relative to the control group. In contrast, there is no significant change for downward AA as a result of the Stock Connect.

Panel A of Table 3 presents the difference-in-differences regression results for the full sample (i.e., before matching). Columns (1) and (2) show the regression results of downward adjustments and upward adjustments, respectively. The coefficient on *Post×Treat* in Column (1) is not significant (-0.2068, z=-1.06), implying that there is no significant difference in the change of downward adjustments after the Stock Connect between the treatment group and the control group. However, *Post×Treat* in Column (2) is significantly negative (-0.4499, z=-2.01), suggesting that the treatment firms experience a greater decrease in the frequency of upward adjustments than control firms. In other words, compared to auditors of the control firms,

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auditors of the treatment firms make upward adjustments less frequently after the Stock Connect. This result is also economically significant. The relative-risk ratio is 0.64 (e^(-0.4499)=0.64), meaning that the odds that auditors make upward adjustments decrease by about 36% among connected firms after the Stock Connect compared to the non-connected firms. In summary, the results in Columns (1) and (2) support the notion that the establishment of the Stock Connect leads to asymmetric audit adjustments. Specifically, the Stock Connect significantly decreases the frequency of upward AA of the connected firms while the probability of downward AA remains the same (relative to the non-connected firms). We conduct dynamic parallel-trend tests to make sure there are no differences in AA trend between the treatment group and the control group before the Stock Connect and present the results in Appendix 5. The coefficient on the interaction of *Y2013* (which equals 1 if the year is 2013, and 0 otherwise) and *Treat* are not significant, indicating that before the Stock Connect, there is no significant difference in the trends of AA between the treatment group and the control group.

Next, we adopt Propensity Score Matching (PSM) to make companies in the treatment group and companies in the control group more comparable. Our matching process is based on the data as of 2013, the year before the event.[19] Panel B of Table 3 presents the PSM results. Consistent with the results in Panel A, *Post×Treat* is not significant (-0.1974, z=-0.93) in Column (3), but is significantly negative (-0.5227, z=-2.14) in Column (4), suggesting that after the establishment of the Stock Connect, upward AA happen less frequently in treatment

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[19] We use 1-to-2 matching methods to reduce sample loss. We alternatively use 1-to-3 matching and no inferences are affected (untabulated). We match on all the control variables in our main model, except for the three variables related to auditors' characteristics (*Partner*, D*egree*, and *Female*) that we consider irrelevant to whether a firm is selected into the stock list of the Stock Connect.

companies, but the frequency of downward AA does not change.[20,21]

6.3 Robustness Checks

6.3.1 Placebo Test

To address the possibility that our results are affected by statistical chance or unobservable factors other than the connected identity derived from the Stock Connect, we implement 500 placebo tests using pseudo Stock Connect identities. We begin by randomly disrupting the Stock Connect identities among each of the sample stocks (e.g., disrupt the treatment group and the control group, and then randomly extract the treatment group 500 times.). In this way, we generate *Pseudo-Post×Treat* that we use to re-estimate the baseline model. Based on the 500 new samples, we rerun the model and obtain the coefficients and z-values on the interaction term *Pseudo-Post×Treat* in the upward-adjustment category. Figure 2 plots the distribution of the pseudo z-values. The figure shows that most of the z-values are between -2 and 2 and that the average pseudo z-value is not significantly different from 0. The asymptotic normal distribution of the z-values indicates that the coefficients on *Pseudo-Post×Treat* are insignificant, strengthening the robustness of our baseline results.

6.3.2 Time Effect and Policy Intensity

It is possible that the market effect takes time to materialize and that the auditors need

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[20] The relative-risk ratio of *Post×Treat* in Column (4) is 0.59 (e^(-0.5227)=0.59), meaning that the odds of upward adjustments in the treatment group is about 41% lower after the implementation of the Stock Connect relative to that of the control group.

[21] The results of dynamic parallel-trend tests on the PSM sample are reported in Panel B of Appendix 5, which shows that before the Stock Connect, there is no significant difference in the trends of AA between the treatment group and the control group.

time to adjust their audit strategies. In addition, starting from March 2, 2015, foreign investors were further allowed to short A-shares via the Shanghai-Hong Kong Stock Connect, deepening the degree of capital-market liberalization in 2015. Short-selling activities can increase the potential litigation risk of auditors (e.g., Hope, Hu, and Zhao 2017). Therefore, if it is the case that capital-market liberalization leads to changes in auditors' behavior by increasing their engagement risks, we should expect to see that the effect of capital-market liberalization on auditors be more salient in the second year following the reform.

Post1 (*Post2*) equals one if the year is 2014 (2015), and zero otherwise. Panel A of Table 4 reports the results using the full sample. In Column (1), the coefficients on *Post1×Treat* and *Post2×Treat* are not significant (-0.2362, z=-1.15; -0.1762, z=-0.72, respectively), providing further evidence that the Stock Connect has no impact on the probability of downward adjustments.

In Column (2), the coefficient on *Post2×Treat* is significantly negative (-0.6692, z=-2.27), while *Post1×Treat* is not significant (-0.2506, z=-1.05). These results suggest that the negative impact on the frequency of upward adjustments is more salient in 2015 than in 2014. This result is consistent with the idea that auditors need time to adapt their policies to the enhanced market supervision and that the effect of capital-market liberalization increases as the degree of liberalization deepens. Overall, these results suggest that auditors significantly reduce their frequency of upward adjustments for the connected companies in response to the increased risk arising from market supervision. The results in Panel B of Table 4 using the PSM sample are similar.

6.3.3 Alternative Matching Approach: Entropy Balancing

To further minimize the potential selection bias of the connected firms, we alternatively employ the Entropy Balancing Method. We match on the same dimensions as with PSM. By using Entropy Balancing, every observation in the control sample receives a weight such that the mean, variance, and skewness of the distribution for each matched variable in the control sample is very similar to its counterpart in the treatment sample. Specifically, there are no significant differences between the treatment and control groups. We rerun our model using the Entropy Balanced sample and present the results in Table 5.[22] As shown in Table 5, the coefficient on *Post×Treat* is significantly negative for upward AA (-0.2624, z=-1.66) but not significant for downward AA (-0.1500, z=-1.21). These results indicate that our inferences are not sensitive to the use of PSM or Entropy Balancing.

7. Additional Analyses

7.1 Magnitude of the Audit Adjustments

In addition to investigating the frequency changes of directional AA, we examine the *magnitude* of directional AA. Columns (1) and (2) of Table 6 show the results of the full sample, and Columns (3) and (4) show the results using the PSM sample. The dependent variable *Up Amount* (*Down Amount*) is the natural logarithm of the magnitude of AA if the adjustment is upward (downward), and 0 otherwise.[23]

As shown in Table 6, the coefficients on the interaction term (*Post×Treat*) are significantly

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[22] As there is no "weight" option in multinomial logit models with fixed effects, we cannot control for firm fixed effects in regressions on the entropy balanced sample. Instead, we include industry fixed effects.
[23] The inferences remain the same if we account for firm size (beyond the firm-size controls) by scaling the AA by total assets.

negative for upward adjustments (-0.5906, t=-2.12 in Column (2); -0.7696, t=-2.52 in Column (4)). Consistent with prior findings, we do not observe a significant effect on downward AA (0.1444, t=0.40 in Column (1); 0.2425, t=0.62 in Column (3)). These results corroborate our baseline results.

7.2 The Effect of Trading Activities by Hong Kong Investors

The supervision effect is driven by the attention and supervision of different market participants including investors, analysts, and media. Active trading and control from Hong Kong investors should enhance the supervision effect of the market by introducing more attention.[24,25] We use two criteria (i.e., annual top-10 shareholders and daily top-10 active shares) to split the connected firms into active and less active group, respectively.

Table 7 reports the regression results. As shown in Panel A, in both the active and less-active groups, the coefficients on *Post×Treat* in the downward-adjustment category are not significant. The coefficient on *Post×Treat* in the upward-adjustment category for the active group is significantly negative (-0.7609, z=-2.35). However, *Post×Treat* in the upward adjustment category for the less-active group is insignificant (0.2431, z=0.69). The results in Panel B are similar to those in Panel A. These results indicate that the market plays a more important role for the connected companies that are more actively traded or with more control

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[24] We divide the connected firms into two groups: active and less active. We use two criteria to split the subsamples: annual top-10 shareholders and daily top-10 active shares. We obtain data on the most actively-traded shares from CSMAR. If the Hong Kong Securities Clearing Company (HKSCC) has ever appeared on the annual list of top-10 shareholders of the connected companies, we put it into the active group (otherwise, less-active group). Similarly, if the company in the treatment group has ever appeared on the list of the daily top ten active shares between November 17, 2014 and April 30, 2016, we put it into the active group. Otherwise, we put it in the less-active group. Then, we use PSM without replacement to match control companies with treatment companies in the active group and less-active group, respectively.
[25] Because the non-connected firms are not allowed to be traded by investors from Hong Kong, they cannot be categorized as active or less active.

from Hong Kong investors.[26] In addition, the likelihood-ratio Chow test results in Panels A and B of Table 7 indicate a structural difference in the coefficients of the model between active and less-active groups.

7.3 Audit-Firm Size Effect

We argue that the increased supervision of the market enhances the litigation risk and reputation risk faced by auditors, thus influencing auditors' professional judgments and decision making. Because the big audit firms are more susceptible to class-action lawsuits under the deep-pocket theory and because they care more about their reputation (e.g., Francis and Wang 2008), we expect the relation between market supervision and auditor behavior to be more pronounced for big auditors. To test this prediction, we use whether a firm is audited by a Big-10 auditor. Then, we partition the whole sample into two subsamples (i.e., Big-10 vs. non-Big10) and rerun our baseline model. Panels A and B of Table 8 report the regression results using the full sample and matched sample, respectively, where Columns (1) - (2) are for the Big-10 group and Columns (3) - (4) are for the non-Big10 group.

For both the Big-10 and non-Big10 groups in Panel A, the coefficients on *Post×Treat* in the downward adjustment category are not significant, suggesting that there is no significant change in the frequency of downward adjustments. However, there are differences between the Big-10 group and the non-Big10 group when it comes to upward adjustments. As shown in Column (2), *Post×Treat* in the Big-10 subsample is significantly negative (-0.5866, z=-2.15).

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[26] In untabulated analyses, to control for the potential effects of stock performance and capital expenditures on audit-adjustment decisions, we add *Volatility* (the natural logarithm of the variance of daily stock returns), *Turnover* (the sum of monthly turnover in a year), and *CAPEX* (capital expenditures divided by lagged total assets) by referring to Coles, Daniel, and Naveen (2006), Haggard, Howe, and Lynch (2015), and Ma, Rogers, and Zhou (2020). Our conclusions are unaltered.

However, *Post×Treat* in the non-Big10 subsample (i.e., Column (4)) is not statistically significant (-0.1077, z=-0.23). These results suggest that the Big-10 auditors are more likely to be affected by the capital-market liberalization due to the Stock Connect. The results in Panel B of Table 8 using the PSM sample are consistent with those reported in Panel A. Also, the likelihood-ratio Chow test results indicate a structural difference in the coefficients of the model between the Big-10 and non-Big10 groups. Our evidence shows that when faced with more supervision from the market, Big-10 audit firms care more about their reputation and they are more likely to use their discretion in professional judgment and change their AA.

7.4 The Transparency Effect of the Listed Firms

Given that the capital-market liberalization induced by the Stock Connect increases the supervising forces of the market, we expect the effect to be more salient for firms with low transparency. Prior literature shows that lower-transparency firms are exposed to more discovery and litigation risks because of information asymmetry (e.g., Barth, Konchitchki, and Landsman, 2013). Therefore, we predict the relation between market supervision and auditor behavior to be stronger when the client firms exhibit low financial transparency.

Following Lang, Lins, and Maffett (2012), we divide our sample into low and high transparency groups according to the median of the accuracy of analysts' earnings forecasts (in 2013). As shown in Columns (1) and (3) of Table 9, Panel A, the coefficients on *Post×Treat* in the downward adjustment category are not significant in both the low-transparency and high-transparency groups, suggesting that there is no significant change in the frequency of downward adjustments in either group. However, there are differences in the upward

adjustment category. As shown in Column (2), *Post×Treat* is significantly negative (-1.0595, z=-2.43) in the upward adjustment category for the low-transparency subsample. However, *Post×Treat* for the high-transparency subsample is not significant (-0.2507, z=-0.64). The likelihood-ratio Chow test results show that there is a structural difference in the coefficients of the model between the low and high transparency groups. The regression results are similar in Panel B of Table 9 (PSM sample). These results suggest that capital-market liberalization has a significantly negative impact on upward adjustments when the connected firms are of low transparency before the liberalization of the capital market. Therefore, the market forces have a significant impact on these more opaque companies.

8. Possible Alternative Explanations[27]

8.1 The Influences of Auditor Changes

The analyses reported above provide support for the argument that the Stock Connect decreases the frequency of upward AA. However, given that the Stock Connect makes it possible for the connected firms to get financing from overseas investors, the connected firms could switch to tougher audit firms to signal their quality and thus attract foreign investors. In that case, the probability of upward AA may decrease as a result of the audit-firm changes. To investigate this possibility, we first examine whether auditor changes take place more frequently after the Stock Connect. We run logit regressions with industry and client-firm fixed effects, respectively. [28] In untabulated results, the coefficients on *Post×Treat* are not

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[27] We employ the same control variables as in Table 3 but results for the control variables are suppressed for the sake of brevity in this section.

[28] As only firms with varied values of the dependent variable remain in regressions with firm fixed effects, many observations are dropped. Therefore, we include industry fixed effects as an alternative and the results are consistent.

significant, implying that the Stock Connect does *not* induce significant audit-firm changes.[29]

Next, we include auditor change (*Firm Change*) as an additional control variable in our baseline model and report the results in Table 10. In addition, prior literature documents that audit fees may affect audit judgments (e.g., Keune and Johnstone 2012). Consequently, we also control for the effect of audit fees (*LnFee*). Consistent with our main findings, as shown in Table 10, *Post×Treat* remains significantly negative in the upward adjustment category in both the full-sample regressions and the PSM-sample regressions. Also, as before, the coefficients of interest for the downward adjustments are not significant. Overall, the evidence in Table 10 suggests that our conclusions are not driven by audit-firm changes or audit-fee effects.

8.2 The Influences of *Pre-Audit* Financial Reporting Quality and Internal Control

As AA relate to clients' financial reports, the decrease in upward audit adjustment we observe could be associated with clients' reduction in income-decreasing errors or earnings management. Specifically, the Stock Connect may introduce more stringent market scrutiny to the client firms. In response, the client firms could increase their internal control quality and reduce income-decreasing errors or earnings management. As a result, there are fewer "opportunities" for the auditors to make upward adjustments.

We conduct three sets of tests to address these possibilities. First, we examine directly whether the Stock Connect has a significant impact on clients' pre-audit earnings quality using DID analyses. Following Lennox, Wang, and Wu (2018), we measure client firms' pre-audit

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[29] As an alternative to considering (any) auditor changes, in untabulated analyses we examine switches from Non-Big10 to Big-10 auditors. The conclusions are unaltered.

earnings quality using pre-audit discretionary accruals estimated by the modified Jones model (*PreDA*) and the unique pre-audit earnings data.[30,31] Specifically, we investigate both signed pre-audit discretionary accruals (i.e., *PreDA≥0* and *PreDA<0*) and unsigned pre-audit discretionary accruals (i.e., *ABSPreDA*). Untabulated results using either the full sample or the PSM sample suggest that the Stock Connect does not have a significant impact on pre-audit earnings quality.

Second, we investigate whether the internal control of the connected firms, relative to that of the control firms, experiences salient change after the Stock Connect. We obtain data of clients' internal control index from the DIB internal control and risk management database. Again, we observe non-significant results when using *IC Index* as the dependent variable in the full sample.

Third and most important, we rerun our baseline model while controlling for firms' *pre-audit* earnings quality as well as internal control level to investigate this alternative explanation. Table 11 provides the results controlling for the natural logarithm of the internal control index plus 1 (*IC Index*) and pre-audit discretionary accruals (*PreDA*). The coefficients on *Post×Treat* are still significantly negative in the upward adjustment category (-0.4217, z=-1.86 in Column

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[30] We also use whether the firms' *pre-audit* earnings are more (or less) likely to meet or beat earnings benchmarks to examine earnings-management incentives, in spirit of Lennox et al. (2018) regarding the discretionary accruals. Specifically, we check the probability that firms' pre-audit earnings meet or beat the analyst consensus forecast and the probability of small positive pre-audit earnings-per-share. We observe similar results, showing that the pre-audit financial reporting quality does not change significantly after the Stock Connect.

[31] We first calculate pre-audit accruals using the data of pre-audit earnings from CICPA and then estimate *PreDA* as the residual estimated using the modified Jones model:

$ACC_{PRE,it} = a_0 + a_1(1/TA_{PRE, it-1}) + a_2(\Delta REV_{it} - \Delta REC_{it} / TA_{PRE, it-1}) + a_3(PPE_{it}/ TA_{PRE, it-1}) + \varepsilon$

$ACC_{PRE,it} = (E_{PRE,it} - CFO_{it}) / TA_{PRE, it-1}$

$E_{PRE,it}$: Pre-audit earnings in year t for firm i

CFO_{it}: Operating cash flow in year t for firm i

$TA_{PRE, it-1}$: Pre-audit total assets in year t-1 for firm i

ΔREV_{it}: Revenues in year t less revenues in year t - 1

ΔREC_{it}: Receivables in year t less revenues in year t - 1

PPE_{it}: Gross property, plant, and equipment in year t for firm i.

(2); -0.5098, z=-2.06 in Column (4)) while the coefficients on *Post×Treat* are insignificant for the downward adjustments. These results are consistent with our main results, indicating that our inferences are not driven by the clients' internal control or pre-audit earnings quality.

9. Conclusion

The relation between the government and the "invisible hand" of the market has long been debated. External auditors are supervised by both regulatory authorities and the market. However, while prior literature has extensively examined the role of government-led regulatory supervision on auditing, previous evidence about whether and how the increased participation of market forces influences auditor behavior often suffers from some endogeneity issues. Moreover, few studies examine the detailed decisions of auditors in their professional practices and, in particular, their adjustments to their clients' financial statements.

The establishment of the Shanghai-Hong Kong Stock Connect in 2014 provides a unique opportunity to investigate this question. Specifically, the Stock Connect program allows Hong Kong investors to enter the Shanghai stock market and trade on a group of stocks. Consequently, the commencement of this program can enhance the market forces faced by the auditors of the connected companies by introducing more sophisticated market participants such as institutional investors, analysts, and media from the Hong Kong capital market. However, the relatively weak institutional environment in China (and the informational disadvantages of foreign investors) and the fierce competition of audit market may dampen the market-supervision effects induced by the Stock Connect.

Using a difference-in-differences PSM research design with firm fixed effects, as well as a unique and detailed audit-adjustment dataset, we find that the Stock Connect influence auditors' professional judgments and decision making. Specifically, the Stock Connect significantly decreases the frequency and magnitude of upward audit adjustments, but its effect on downward audit adjustments is largely insignificant. These results suggest that auditors make a trade-off between the benefits and costs of changing adjustment strategy. Further evidence shows that the market supervision effect is more pronounced for companies with high trading volume by Hong Kong investors, for companies audited by Big-10 audit firms, and for companies with low financial transparency. Additional analyses exclude alternative possibilities that our findings are driven by changes in clients' pre-audit financial reporting quality, internal control, or auditor changes.

Appendix 1. Time Trend of Hong Kong Investors' Investment in Mainland China

Figure A. The frequency of Hong Kong Securities Clearing Company Limited (HKSCC) appearing in the top-10 shareholders (all listed firms)
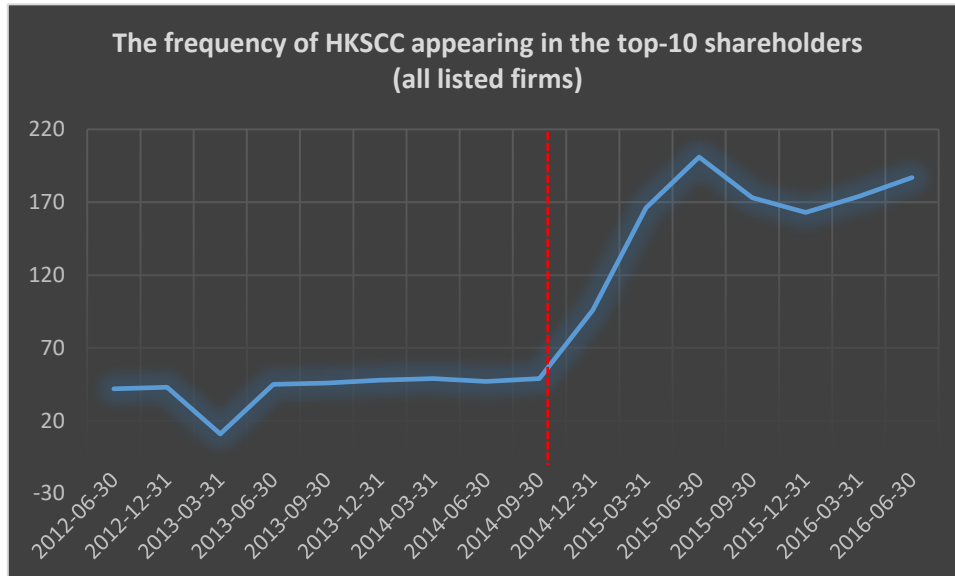
Figure B. The frequency of Hong Kong Securities Clearing Company Limited (HKSCC) appearing in the top-10 shareholders (A-shares in circulation)
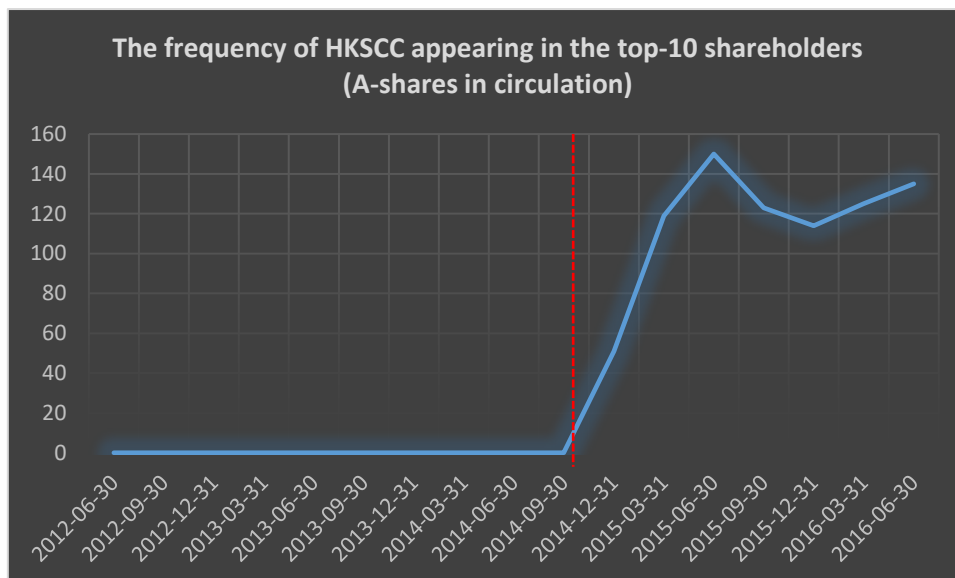
Appendix 2. Univariate Analyses of Media Attention

Panel A. The number of news reports that the company is mentioned in the title (Short Window)

		Treatment Group	Control Group	Treatment-Control Difference (t-value)
Pre	*Newsnum_title*	16.913	16.382	0.531
	N	1,002	3,734	(0.53)
Post	*Newsnum_title*	18.586	15.577	3.009***
	N	1,002	3,734	(3.02)
	Post-pre Difference	1.673	-0.806	2.478*
	(t-value)	(1.34)	(-1.24)	(1.76)

Panel B. The number of news reports that the company is mentioned in the content (Short Window)

		Treatment Group	Control Group	Treatment-Control Difference (t-value)
Pre	*Newsnum_cont*	48.912	30.725	18.187***
	N	1,002	3,734	(6.60)
Post	*Newsnum_cont*	56.555	29.504	27.051***
	N	1,002	3,734	(9.82)
	Post-pre Difference	7.643**	-1.221	8.864**
	(t-value)	(2.21)	(-0.68)	(2.28)

Panel C. The number of news reports that the company is mentioned in the title (Long Window)

		Treatment Group	Control Group	Treatment-Control Difference (t-value)
Pre	*Newsnum_title*	17.136	13.553	3.584***
	N	14,538	58,835	(14.34)
Post	*Newsnum_title*	23.838	20.278	3.560 ***
	N	6,173	28,462	(9.40)
	Post-pre Difference	6.702***	6.725***	-0.023
	(t-value)	(16.34)	(34.51)	(0.05)

Panel D. The number of news reports that the company is mentioned in the content (Long Window)

		Treatment Group	Control Group	Treatment-Control Difference (t-value)
Pre	*Newsnum_cont*	47.855	26.944	20.910***
	N	14,538	58,835	(26.82)
Post	*Newsnum_cont*	62.767	34.437	28.331***
	N	6,173	28,462	(23.97)
	Post-pre Difference	14.913***	7.492***	7.420***
	(t-value)	(11.66)	(12.33)	(5.24)

Notes: This table reports the univariate analysis of media coverage before and after the Stock Connect. *Short Window* refers to a four-month analysis period (i.e., two months before the event and two months after the event). Similarly, *Long Window* refers to a four-year analysis period. *Newsnum_title* and *Newsnum_cont* represent the number of news reports that the company is mentioned in the title and the content of media coverage, respectively. The media coverage data is collected from the Chinese Research Data Services Platform (CNRDS). ***, **, and * represent significance at the 1%, 5%, and 10% levels.

Appendix 3. Litigation Risks for Auditors in China

We present evidence supporting that investors can successfully sue auditors and auditors indeed face considerable litigation risks by investors in China. The first civil litigation against a disaffiliated auditor in China took place in 1998. Many other cases where investors sued companies and their auditors have followed since then. Hereafter, we provide some legal provisions and some civil litigation cases where the investors sue the auditors and successfully recovered their losses in China.

One representative case in the Chinese capital market is the financial fraud of Lantian Co., Ltd. At the end of 2005, 83 shareholders claimed about 6.17 million yuan from Lantian Co., Ltd for its fraudulent financial statements. In July 2006, Wuhan Intermediate People's Court made a judgment, supporting the lawsuit claims of 79 shareholders and ordering Lantian Co., Ltd, Hualun Accounting Firm, and other defendants to compensate more than 5.4 million yuan. In November 2007, the Wuhan Intermediate People's Court ordered Lantian Co., Ltd and the Hualun Accounting Firm to pay another 40 plaintiffs a total amount of 2.6 million yuan.

On June 5, 2007, the Supreme People's Court of China promulgated and implemented Several Provisions of the Supreme People's Court on Hearing Civil Tort Compensation Cases Invoking Accounting Firms in Auditing Activities (Legal Interpretation [2007] No. 12) (henceforth, "the Provisions"). Based on the previous stipulations, the Provisions further clarified the legal responsibilities undertaken by accounting firms. For example, Article 5 of the Provisions stipulates six circumstances under which an accounting firm shall bear joint and several liabilities for compensation with the audited entity if it produces false audit reports and causes losses to interested parties. Article 6 stipulates that if a public accounting firm causes losses to interested parties due to its negligence, the court shall determine its liability for compensation according to the magnitude of its negligence. Article 6 also stipulates ten circumstances of negligence. The Provisions provides a legal guarantee for investigating the legal liability of accounting firms.

In June 2016, a lawsuit brought by 49 investors was settled in a lawsuit filed by more than 60 investors against Xiaxin Electronics Co., Ltd (now Xiangyu Co., Ltd) over their liability for false statements. Finally, of the total amount of claims involved (2.21 million RMB), Xiaxin was ruled to pay about 1.012 million RMB to the 49 investors. Similarly, in 2018, the Shanghai Higher People's Court ordered Dazhihui Co., Ltd to compensate four investors for the losses caused by false statements, totaling 252,132.74 yuan. Meanwhile, it also ordered Lixin Accounting Firm (Special General Partnership) to assume joint liability for Dazhihui's obligations.

In January 2020, 166 investors sued Huaze Cobalt&Nickel, Guoxin Securities Co., Ltd, and Ruihua Accounting Firm over liability for false statements in securities. The claims of the investors got successful support from the court. The defendant, Chengdu Huaze Cobalt&Nickel, should compensate for the loss caused to the plaintiff, totaling RMB 49,055,400.25, within ten days from the effective date of the judgment. The defendant named Ruihua Accounting Firm shall assume joint indemnity liabilities within 60% range.

Appendix 4. Variable Definitions

Variable		Definition
Dependent Variables:		
Adjust	=	1 if auditors make downward adjustments, 2 if auditors make upward adjustments, and 0 otherwise;
Up Amount	=	natural logarithm of the magnitude of audit adjustment if the audit adjustment is upward, and 0 otherwise;
Down Amount	=	natural logarithm of the magnitude (absolute value) of audit adjustments if the audit adjustment is downward, 0 otherwise;
Independent Variables:		
Post	=	1 if year=2014/2015, and 0 if year=2012/2013;
Treat	=	1 if the company is on the list of the connected stocks after the opening of Shanghai-Hong Kong Stock Connect during year 2014-2015, and 0 otherwise;
Post×Treat	=	the interaction between *Post* and *Treat*;
Post1	=	1 if year=2014, and 0 otherwise;
Post2	=	1 if year=2015, and 0 otherwise;
Post1×Treat	=	the interaction between *Post1* and *treat*;
Post2×Treat	=	the interaction between *Post2* and *treat*;
Size	=	the natural logarithm of total assets;
LEV	=	total liabilities divided by total assets;
ROA	=	net income divided by average total assets;
Board Size	=	the natural logarithm of the number of board members;
Dual	=	1 if the CEO is also the chairman, and 0 otherwise;
OCF	=	operating cash flow divided by average total assets;
BM	=	the ratio of book value of equity to closing market value of equity at the end of the year
Growth	=	the difference between the sales revenue of the current period and that of the previous period divided by the sales revenue of the previous period
LagMAO	=	1 if the company received a modified audit opinion the previous year, and 0 otherwise;
Big10	=	1 if the auditor is a Big-10 audit firm, and 0 otherwise;
Partner	=	1 if at least one of the signing auditors is a partner of the audit firm, and 0 otherwise;
Degree	=	1 if at least one of the signing auditors has a bachelor's or higher degree, and 0 otherwise;
Female	=	1 if at least one of the signing auditors is female, and 0 otherwise;
Firm Change	=	1 when audit firm of the listed company is different from that in the last period (audit firm rotation takes place), and 0 otherwise;
LnFee	=	the natural logarithm of audit fees;
PreDA	=	pre-audit discretional accruals estimated by the modified Jones model;

| *ABSPreDA* | = | the absolute value of *PreDA*; |
| *IC Index* | = | the natural logarithm of internal control index from DIB internal control and risk management database. |

Appendix 5. Parallel Trend Analysis

	Panel A: Full Sample DID Design		Panel B: PSM Sample DID Design	
	(1)	(2)	(3)	(4)
Dep.Var= *Adjust*	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Y2013×Treat	0.0023	-0.1807	0.0181	-0.3080
	(0.01)	(-0.66)	(0.07)	(-1.01)
Post×Treat	-0.2056	-0.5405**	-0.1883	-0.6797**
	(-0.86)	(-1.97)	(-0.72)	(-2.26)
Y2013	0.0064	0.0988	0.0177	0.2710
	(0.07)	(0.80)	(0.12)	(1.52)
Y2014	-0.2519**	-0.1517	-0.1660	0.1375
	(-2.02)	(-1.00)	(-0.93)	(0.63)
Y2015	-0.3244*	-0.1706	-0.3121	-0.0200
	(-1.94)	(-0.85)	(-1.34)	(-0.07)
Size	-0.2868*	-0.3210	-0.5137*	-0.6684**
	(-1.77)	(-1.58)	(-1.86)	(-2.09)
LEV	0.7104	0.6926	0.9863	0.5870
	(1.36)	(1.11)	(1.11)	(0.60)
ROA	0.7381	1.7767	-2.2329	1.0861
	(0.69)	(1.36)	(-1.11)	(0.45)
Board Size	-0.5367	-1.2249**	0.0356	-1.2937
	(-1.29)	(-2.30)	(0.06)	(-1.56)
Dual	-0.1626	-0.2641	-0.1112	-0.3384
	(-1.01)	(-1.26)	(-0.41)	(-1.01)
OCF	-1.3680**	-0.7985	-0.5052	-0.3623
	(-2.02)	(-0.99)	(-0.52)	(-0.32)
BM	-0.2335	-0.1812	-0.2952	-0.5334
	(-0.65)	(-0.44)	(-0.68)	(-1.10)
Growth	0.0677	0.0475	0.3060	0.2514
	(0.76)	(0.46)	(1.60)	(1.11)
LagMAO	-0.1084	-0.0870	0.0635	0.2582
	(-0.40)	(-0.26)	(0.14)	(0.48)
Big10	-0.2230	-0.8135***	-0.4861	-0.6228
	(-0.98)	(-2.67)	(-1.52)	(-1.51)
Partner	-0.0197	0.0407	0.1162	-0.1693
	(-0.11)	(0.18)	(0.46)	(-0.51)
Degree	0.0578	-0.1134	-0.2307	-0.2132
	(0.35)	(-0.56)	(-1.01)	(-0.77)
Female	-0.0507	-0.1435	0.0452	-0.1725
	(-0.48)	(-1.08)	(0.30)	(-0.98)
Client firm FE	Yes	Yes	Yes	Yes

Observations	5,540	3,120
Wald chi^2	64.36***	57.54**

Notes: This table reports the results of parallel trend analysis of the full sample and PSM sample used in Table 3. Panel A (Panel B) shows the results of full (PSM) sample. The dependent variable is *Adjust*, which equals 1 if auditors make downward adjustments, equals 2 if auditors make upward adjustments, and equals 0 otherwise. *Y2013* (*Y2014*) [*Y2015*] is a binary variable, which equals 1 if the year is 2013 (2014) [2015], and 0 otherwise. *Y2013×Treat* is the interaction between *Y2013* and *Treat*. All the other variables are defined in Appendix 4. Z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. Some observations are dropped because only firms with varied values as dependent variable remain in such regressions with firm fixed effects. ***, **, and * represent significance at the 1%, 5% and 10% levels.

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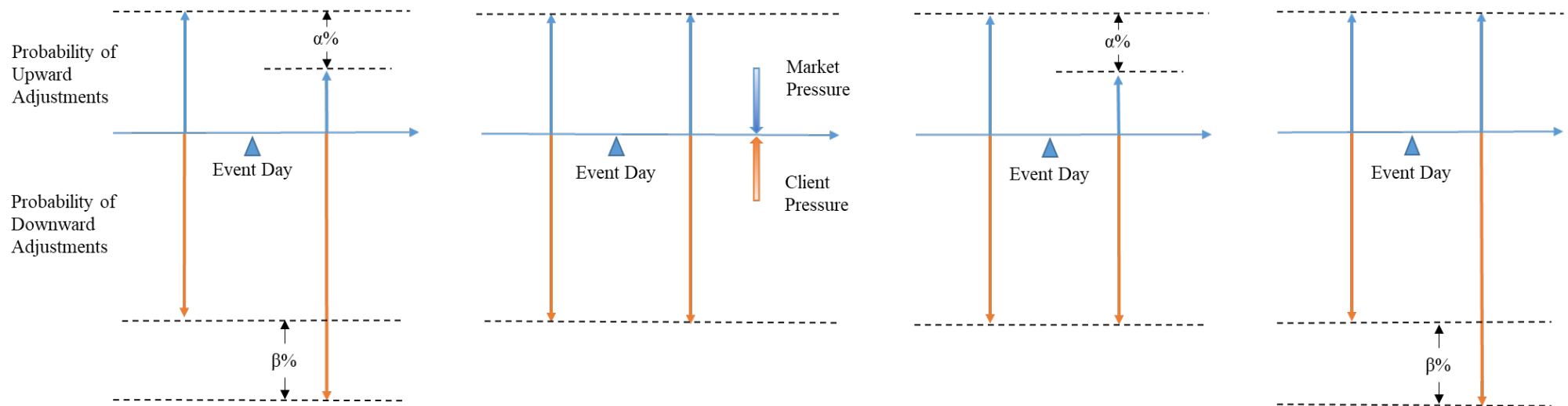Liu, C, Wang, S, Wei, K. C. 2020. Demand Shock, Speculative Beta, and Asset Prices: Evidence from

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Figure 1. Changes of Upward/Downward Adjustments after the Event

Kernel density estimate

kernel = epanechnikov, bandwidth = 0.2603
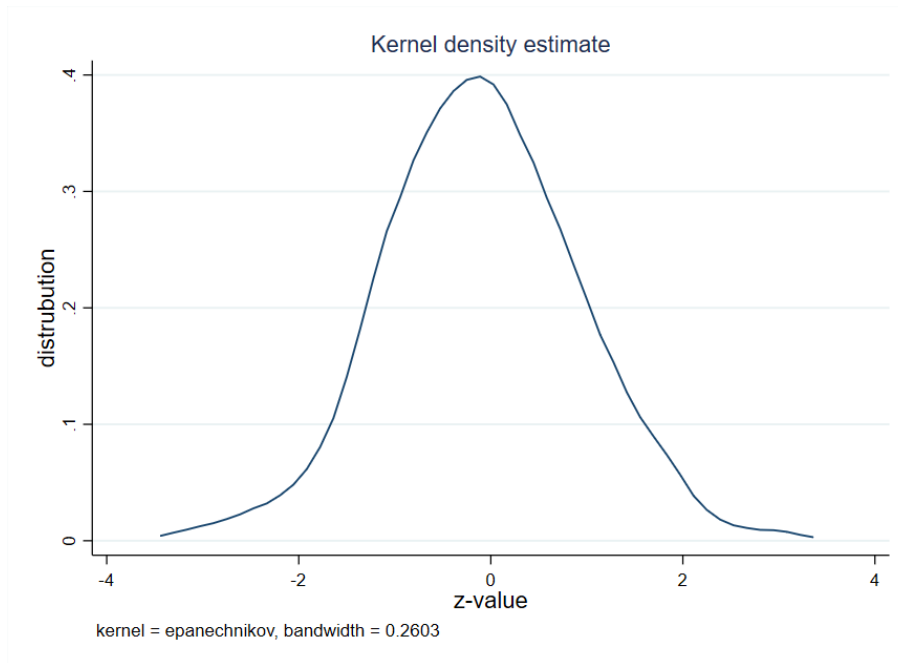
Notes: This figure shows the distribution of Z-values on the interaction term *Pseudo-Post×Treat* in the upward-adjustment category in 500 placebo tests using pseudo Stock Connect identities.

Figure 2. Placebo Test

Table 1. Sample Selection and Descriptive Statistics

Panel A. Sample Selection

Observations during 2012-2015	10,888
- Stocks that appear on the connected stock list for just a while but not stay on the list throughout the sample period	634
- Stocks that belong to the financial industry	173
- Observations if any variable in the main regression model is missing	953
- Stocks that have missing observations during the sample period	864
Final Observation	8,264

Panel B. Audit Adjustment Variable

	N	Adjust Up	Adjust Down	No Adjust
Pre	4132	15.22%	41.46%	43.32%
Post	4132	14.23%	37.85%	47.92%
Entire Period	8264	14.73%	39.65%	45.62%

Panel C. Control Variables

	Pre			Post			Post - Pre	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	（8）
Variables	Treatment Group	Control Group	Diff.	Treatment Group	Control Group	Diff.	Diff. in Diff.	
	(N=824)	(N=3,308)		(N=824)	(N=3,308)		Mean	|t-value|
Size	23.154	21.570	1.585***	23.410	21.866	1.544***	-0.041	0.66
LEV	0.522	0.417	0.105***	0.517	0.431	0.086***	-0.018	1.53
ROA	0.052	0.037	0.014***	0.044	0.031	0.012***	-0.002	0.59
Board Size	2.238	2.141	0.097***	2.210	2.113	0.097***	-0.001	0.05
Dual	0.104	0.284	-0.180***	0.129	0.274	-0.145***	0.035	1.47
OCF	0.058	0.038	0.019***	0.057	0.040	0.017***	-0.003	0.71
BM	0.651	0.474	0.177***	0.472	0.301	0.171***	-0.007	0.44

Growth	0.159	0.158	0.001	0.091	0.166	-0.075***	-0.076	2.86
LagMAO	0.005	0.049	-0.045***	0.004	0.044	-0.040***	0.004	0.39
Big10	0.748	0.668	0.079***	0.743	0.679	0.064***	-0.015	0.60
Partner	0.930	0.925	0.005	0.930	0.946	-0.017*	-0.021	1.55
Degree	0.902	0.877	0.025**	0.900	0.886	0.014	-0.011	0.61
Female	0.532	0.478	0.053***	0.525	0.501	0.025	-0.029	1.04

Notes: This table shows the descriptive statistics of the dependent variable and control variables. All the variables are defined in Appendix 4. ***, **, and * represent significance at the 1%, 5%, and 10% levels.

Table 2. Full Sample Univariate Analyses

Panel A. Univariate analysis of Adjust Up

		Treatment Group	Control Group	Treatment-Control Difference (t-value)
Pre	*Adjust Up*	0.169	0.148	0.021
	N	824	3308	(1.49)
Post	*Adjust Up*	0.131	0.145	-0.014
	N	824	3308	(-1.02)
	Post-pre Difference	-0.038**	-0.003	-0.035*
	(t-value)	(-2.16)	(-0.35)	(-1.77)

Panel B. Univariate analysis of Adjust Down

		Treatment Group	Control Group	Treatment-Control Difference (t-value)
Pre	*Adjust Down*	0.313	0.440	-0.127***
	N	824	3308	(-6.69)
Post	*Adjust Down*	0.284	0.402	-0.118***
	N	824	3308	(-6.23)
	Post-pre Difference	-0.029	-0.038***	0.009
	(t-value)	(-1.22)	(-3.16)	(0.32)

Notes: This table reports univariate analyses of *Adjust Up* and *Adjust Down*, which are binary variables. *Adjust Up* equals 1 if there exist upward audit adjustments, and 0 otherwise. *Adjust Down* equals 1 if there exist downward audit adjustments, and 0 otherwise. ***, **, and * represent significance at the 1%, 5%, and 10% levels.

Table 3. The Effect of Capital Market Liberalization on Asymmetric Audit Adjustments

Dep.Var= *Adjust*	Panel A: Full Sample DID Design		Panel B: PSM Sample DID Design	
	(1)	(2)	(3)	(4)
	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Post×Treat	-0.2068	-0.4499**	-0.1974	-0.5227**
	(-1.06)	(-2.01)	(-0.93)	(-2.14)
Size	-0.2859*	-0.3213	-0.5109*	-0.6659**
	(-1.76)	(-1.58)	(-1.85)	(-2.08)
LEV	0.7095	0.6925	0.9763	0.5942
	(1.35)	(1.11)	(1.10)	(0.60)
ROA	0.7327	1.7519	-2.2548	1.0380
	(0.69)	(1.34)	(-1.12)	(0.43)
Board Size	-0.5383	-1.2313**	0.0353	-1.3026
	(-1.29)	(-2.32)	(0.06)	(-1.57)
Dual	-0.1631	-0.2653	-0.1130	-0.3522
	(-1.01)	(-1.27)	(-0.42)	(-1.06)
OCF	-1.3728**	-0.7961	-0.5248	-0.3464
	(-2.03)	(-0.99)	(-0.54)	(-0.30)
BM	-0.2356	-0.1976	-0.2965	-0.5489
	(-0.65)	(-0.48)	(-0.68)	(-1.14)
Growth	0.0677	0.0486	0.3075	0.2523
	(0.76)	(0.48)	(1.60)	(1.12)
LagMAO	-0.1096	-0.0910	0.0636	0.2420
	(-0.40)	(-0.27)	(0.14)	(0.45)
Big10	-0.2224	-0.8127***	-0.4849	-0.6226
	(-0.98)	(-2.68)	(-1.52)	(-1.52)
Partner	-0.0191	0.0454	0.1177	-0.1603
	(-0.11)	(0.20)	(0.47)	(-0.49)
Degree	0.0577	-0.1097	-0.2307	-0.2062
	(0.35)	(-0.54)	(-1.02)	(-0.75)
Female	-0.0509	-0.1450	0.0454	-0.1785
	(-0.48)	(-1.09)	(0.31)	(-1.01)
Year FE	Yes	Yes	Yes	Yes
Client firm FE	Yes	Yes	Yes	Yes
Observations	5,540		3,120	
Wald chi^2	63.88***		56.37***	

Notes: This table reports the multinomial logit regression results of model (1). Panel A (Panel B) shows the results of full (PSM) sample regression. The dependent variable is *Adjust*, which equals 1 if auditors make downward adjustments, equals 2 if auditors make upward adjustments, and equals 0 otherwise. Z-statistics

reported in parentheses are based on heteroscedasticity-robust standard errors. Some observations are dropped because only firms with varied values as dependent variable remain in such regressions with firm fixed effects. All the variables are defined in Appendix 4. ***, **, and * represent significance at the 1%, 5% and 10% levels.

Table 4. The Effect of Capital Market Liberalization on Asymmetric Audit Adjustments Considering Time Effect and Policy Intensity

Dep.Var= *Adjust*	*Panel A: Full Sample DID Design*		*Panel B: PSM Sample DID Design*	
	(1)	(2)	(3)	(4)
	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Post1×Treat	-0.2362	-0.2506	-0.3007	-0.3992
	(-1.15)	(-1.05)	(-1.34)	(-1.52)
Post2×Treat	-0.1762	-0.6692**	-0.0904	-0.6661**
	(-0.72)	(-2.27)	(-0.34)	(-2.10)
Size	-0.2843*	-0.3305	-0.5120*	-0.6744**
	(-1.76)	(-1.63)	(-1.86)	(-2.10)
LEV	0.7105	0.6883	0.9971	0.6024
	(1.36)	(1.11)	(1.12)	(0.61)
ROA	0.7359	1.7441	-2.1971	1.0608
	(0.69)	(1.33)	(-1.09)	(0.44)
Board Size	-0.5386	-1.2360**	0.0334	-1.3330
	(-1.29)	(-2.32)	(0.06)	(-1.60)
Dual	-0.1612	-0.2649	-0.1089	-0.3579
	(-1.00)	(-1.27)	(-0.41)	(-1.08)
OCF	-1.3581**	-0.8202	-0.5107	-0.3741
	(-2.01)	(-1.01)	(-0.52)	(-0.33)
BM	-0.2393	-0.1545	-0.3066	-0.5140
	(-0.66)	(-0.37)	(-0.70)	(-1.06)
Growth	0.0673	0.0506	0.3081	0.2537
	(0.76)	(0.50)	(1.61)	(1.12)
LagMAO	-0.1120	-0.0880	0.0684	0.2439
	(-0.41)	(-0.26)	(0.15)	(0.45)
Big10	-0.2241	-0.8101***	-0.4865	-0.6212
	(-0.99)	(-2.66)	(-1.53)	(-1.52)
Partner	-0.0198	0.0492	0.1127	-0.1639
	(-0.11)	(0.21)	(0.45)	(-0.50)
Degree	0.0591	-0.1068	-0.2360	-0.2108
	(0.36)	(-0.53)	(-1.04)	(-0.76)
Female	-0.0503	-0.1487	0.0455	-0.1841
	(-0.48)	(-1.12)	(0.31)	(-1.04)
Year FE	Yes	Yes	Yes	Yes
Client firm FE	Yes	Yes	Yes	Yes
Observations	5,540		3,120	
Wald chi^2	65.91***		57.78**	

Notes: This table reports the multinomial logit regression results considering time effect and policy intensity. Panel A (Panel B) shows the result of full (PSM) sample regression. The dependent variable is *Adjust*, which

equals 1 if auditors make downward adjustments, equals 2 if auditors make upward adjustments, and equals 0 otherwise. *Post1* and *Post2* are indicator variables. *Post1* (*Post2*) equals one if the year is 2014 (2015), and zero otherwise. Z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. Some observations are dropped because only firms with varied values as dependent variable remain in such regressions with firm fixed effects. All the variables are defined in Appendix 4. ***, **, and * represent significance at the 1%, 5% and 10% levels.

Table 5. Entropy Balancing Method

Dep.Var= *Adjust*	(1) Downward Adjustment (*Adjust*=1)	(2) Upward Adjustment (*Adjust*=2)
Post×Treat	-0.1500	-0.2624*
	(-1.21)	(-1.66)
Constant	7.7053***	4.1986**
	(5.51)	(2.49)
Controls	Yes	
Year FE	Yes	
Industry FE	Yes	
Observations	8,264	
Wald Chi2/F	381.29***	

Notes: This table shows the results using Entropy Balancing method. The dependent variable is *Adjust*, which equals 1 if auditors make downward adjustments, equals 2 if auditors make upward adjustments, and equals 0 otherwise. Since we cannot weigh using multinomial logit model with firm fixed effect, we include industry fixed effect instead in Column (1) through Column (2). Z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All the variables are defined in Appendix 4. ***, **, and * represent significance at the 1%, 5%, and 10% levels.

Table 6. The Effect of Capital Market Liberalization on the Magnitude of Audit Adjustments

Dep.Var=	Full Sample		PSM Sample	
	(1)	(2)	(3)	(4)
	Down Amount	*Up Amount*	*Down Amount*	*Up Amount*
Post×Treat	0.1444	-0.5906**	0.2425	-0.7696**
	(0.40)	(-2.12)	(0.62)	(-2.52)
Constant	10.1723	10.4095**	9.2975	20.8056**
	(1.34)	(1.98)	(0.71)	(2.18)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Client firm FE	Yes	Yes	Yes	Yes
Observations	8,264	8,264	4,944	4,944
F	1.05	1.28	1.11	1.25

Notes: This table shows the effect of the capital market liberalization on the magnitude of audit adjustment. Columns (1) – (2) show the results of full sample, and Columns (3) – (4) show the results of PSM sample. The dependent variable in Columns (2) and (4) (*Up Amount*) is the natural logarithm of the magnitude of audit adjustment if the adjustment is upward, and 0 otherwise. The dependent variable in Columns (1) and (3) (*Down Amount*) is the natural logarithm of the absolute magnitude of audit adjustment if the adjustment is downward, and 0 otherwise. Standard errors are clustered by client firm. All the variables are defined in Appendix 4. ***, **, and * represent significance at the 1%, 5% and 10% levels.

Table 7. The Effect of Hong Kong Trading Activities

Panel A: PSM Sample DID Design - Based on Top-10 Shareholder Directory

Dep.Var= *Adjust*	Active Group		Less-Active Group	
	(1)	(2)	(3)	(4)
	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Post×Treat	-0.2399	-0.7609**	0.1381	0.2431
	(-0.88)	(-2.35)	(0.46)	(0.69)
Controls	Yes		Yes	
Year FE	Yes		Yes	
Client firm FE	Yes		Yes	
Observations	1,740		1,252	
Wald chi²	69.94***		57.01***	
Likelihood-ratio Chow test (LR chi2)	229.97***			

Panel B: PSM Sample DID Design - Based on Top-10 Active Shares

Dep.Var= *Adjust*	Active Group		Less-Active Group	
	(1)	(2)	(3)	(4)
	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Post×Treat	0.3249	-0.5570*	0.0212	-0.2469
	(1.46)	(-1.70)	(0.15)	(-1.33)
Treat	-0.5330**	-0.1586	-0.1462	0.1755
	(-2.03)	(-0.49)	(-1.03)	(0.98)
Controls	Yes		Yes	
Year FE	Yes		Yes	
Industry FE	Yes		Yes	
Observations	1,344		3,600	
Pseudo R2	0.10		0.04	
Likelihood-ratio Chow test (LR chi2)	95.96**			

Notes: This table reports the results of the active and less-active subsample regressions. We divide our sample into active and less-active groups based on the data of the daily top-10 active shares from CSMAR, as well as the data of top-10 shareholders of client firms. The dependent variable is *Adjust*, which equals 1 if auditors make downward adjustments, equals 2 if auditors make upward adjustments, and equals 0 otherwise. Only 112 firms appear in the daily top-10 active share list. And about half of observations are dropped in the active group based on top-10 active shares if firm fixed effects are controlled, because only firms with varied values as dependent variable remain in such regressions with firm fixed effects. Thus we control for industry fixed effects rather than firm fixed effects in Panel B. Z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. All the variables are defined in Appendix 4. ***, **, and * represent significance at the 1%, 5%, and 10% levels.

Table 8. Audit-Firm Size (Big-10 versus Smaller Audit Firms)

Panel A: Full Sample DID Design

	Big-10 Group		Non-Big10 Group	
	(1)	(2)	(3)	(4)
Dep.Var= *Adjust*	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Post×Treat	-0.3789	-0.5866**	-0.0304	-0.1077
	(-1.57)	(-2.15)	(-0.07)	(-0.23)
Controls	Yes		Yes	
Year FE	Yes		Yes	
Client firm FE	Yes		Yes	
Observations	3,396		1,556	
Wald chi^2	32.19		95.93***	
Likelihood-ratio Chow test (LR chi2)		85.55***		

Panel B: PSM Sample DID Design

	Big-10 Group		Non-Big10 Group	
	(1)	(2)	(3)	(4)
Dep.Var= *Adjust*	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Post×Treat	-0.3715	-0.6314**	0.5214	0.1413
	(-1.44)	(-2.14)	(1.03)	(0.26)
Controls	Yes		Yes	
Year FE	Yes		Yes	
Client firm FE	Yes		Yes	
Observations	2,136		768	
Wald chi^2	34.21		71.09***	
Likelihood-ratio Chow test (LR chi2)		68.50***		

Notes: This table reports the results of Big-10 and non-Big10 subsample regressions. The dependent variable is *Adjust*, which equals 1 if auditors make downward adjustments, equals 2 if auditors make upward adjustments, and equals 0 otherwise. Z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. Some observations are dropped because only firms with varied values as dependent variable remain in such regressions with firm fixed effects. All the variables are defined in Appendix 4. ***, **, and * represent significance at the 1%, 5%, and 10% levels.

Table 9. The Transparency Effect of the Listed Firms

Panel A: Full Sample DID Design

Dep.Var= *Adjust*	Low Transparency Group		High Transparency Group	
	(1)	(2)	(3)	(4)
	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Post×Treat	-0.4252	-1.0595**	-0.0381	-0.2507
	(-1.17)	(-2.43)	(-0.11)	(-0.64)
Controls	Yes		Yes	
Year FE	Yes		Yes	
Client firm FE	Yes		Yes	
Observations	1,424		1,460	
Wald chi^2	33.46		52.15**	
Likelihood-ratio Chow test (LR chi2)		52.31**		

Panel B: PSM Sample DID Design

Dep.Var= *Adjust*	Low Transparency Group		High Transparency Group	
	(1)	(2)	(3)	(4)
	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Post×Treat	-0.3720	-0.8300*	-0.0797	-0.2148
	(-0.97)	(-1.82)	(-0.22)	(-0.53)
Controls	Yes		Yes	
Year FE	Yes		Yes	
Client firm FE	Yes		Yes	
Observations	1,124		1,132	
Wald chi^2	37.71		882.10***	
Likelihood-ratio Chow test (LR chi2)		35.34		

Notes: This table reports the results of low transparency and high transparency subsample regressions. We divide our sample into low and high transparency groups according to the accuracy of analysts' forecasts (in 2013) of the client firms. The dependent variable is *Adjust*, which equals 1 if auditors make downward adjustments, equals 2 if auditors make upward adjustments, and equals 0 otherwise. Z-statistics reported in parentheses are based on heteroscedasticity-robust standard errors. Some observations are dropped because only firms with varied values as dependent variable remain in such regressions with firm fixed effects. All the variables are defined in Appendix 4. ***, **, and * represent significance at the 1%, 5%, and 10% levels.

Table 10. Control for Audit-Firm Changes and Audit Fees

	Dep.Var= *Adjust*			
	Full Sample		**PSM Sample**	
	(1)	(2)	(3)	(4)
	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Post×Treat	-0.1981	-0.4794**	-0.0935	-0.4792*
	(-1.00)	(-2.11)	(-0.43)	(-1.92)
Firm Change	0.1606	0.0365	-0.0756	0.1299
	(1.16)	(0.20)	(-0.35)	(0.52)
LnFee	0.0461	0.0344	0.1730	0.0895
	(0.17)	(0.11)	(0.45)	(0.19)
Controls	Yes		Yes	
Year FE	Yes		Yes	
Client firm FE	Yes		Yes	
Observations	5,404		2,988	
Wald chi^2	63.57***		68.60***	

Notes: This table reports the baseline regressions results controlling for *Firm Change* and *LnFee*. *Firm Change* is an indicator variable which takes 1 when audit firm of the listed company is different from that in last period (audit firm rotation takes place), and 0 otherwise. *LnFee* is the natural logarithm of audit fees. *Adjust* equals 1 if auditors make downward adjustments, equals 2 if auditors make upward adjustments, and equals 0 otherwise. Some observations are dropped because only firms with varied values as dependent variable remain in such regressions with firm fixed effects. ***, **, and * represent significance at 1%, 5% and 10% levels.

Table 11. Control for Internal Control and Pre-Audit Earnings Quality of Client Firms

Dep.Var= *Adjust*	Panel A. Full Sample DID Design		Panel B. PSM Sample DID Design	
	(1)	(2)	(3)	(4)
	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)	Downward Adjustment (*Adjust*=1)	Upward Adjustment (*Adjust*=2)
Post×Treat	-0.1652	-0.4217*	-0.1171	-0.5098**
	(-0.83)	(-1.86)	(-0.54)	(-2.06)
IC Index	-0.0771*	-0.0836	-0.1246*	-0.0084
	(-1.95)	(-1.63)	(-1.86)	(-0.08)
PreDA	3.9143***	-3.6421**	4.6857***	-5.0772**
	(3.72)	(-2.30)	(2.85)	(-2.51)
Controls	Yes		Yes	
Year FE	Yes		Yes	
Client firm FE	Yes		Yes	
Observations	5,404		3,064	
Wald chi^2	99.90***		98.16***	

Notes: This table shows the regressions results with *Adjust* as the dependent variable, controlling for the internal control (*IC Index*) and pre-audit earnings quality (*PreDA*) of client firms. Panel A reports the results of the full sample. Panel B reports the results of the PSM sample. All the variables are defined in Appendix 4. Some observations are dropped because only firms with varied values as dependent variable remain in such regressions with firm fixed effects. ***, **, and * represent significance at the 1%, 5% and 10% levels.