REGULATION AND OPINION SHOPPING:

EVIDENCE FROM THE U.S. BROKER-DEALER INDUSTRY

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Regulation and Opinion Shopping: Evidence from the U.S. Broker-Dealer Industry

ABSTRACT

This study investigates the opinion shopping behavior of SEC-registered broker-dealers (BDs) and examines the changes in this behavior around recent regulatory interventions related to BD audits. Specifically, I report the following important findings. First, using a regulatory shock-based instrumental variable design (shock-IV design), I find empirical evidence suggesting that BDs successfully engage in opinion shopping. Second, BDs intensified their opinion shopping activities, at least in the short term, following the regulatory change that mandated BD auditors to register with the Public Company Accounting Oversight Board (PCAOB). Third, BD opinion shopping activities subsided to some extent after the PCAOB assumed the sole authority over the BD audit market. This effect was mainly driven by the elimination of the regulatory gap between public auditors, those who also engaged in public issuer audits and nonpublic auditors, those who do not engage in public issuer audits. Fourth, I find evidence suggesting that BD opinion shopping activities have significantly reduced after the adoption of the U.S. Securities and Exchange Commission (SEC) rules and PCAOB attestation standards for BDs in 2014. Finally, results from testing the association between BD audit opinions and Financial Industry Regulatory Authority (FINRA) enforcement actions against BDs suggest that the informational value of the internal control audit opinions has been significantly reduced after the implementation of these rules and standards.

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Chapter 1

INTRODUCTION

The broker-dealers (BD) industry serves the general investing public and is central to the functioning of financial markets.[1] Following the financial crisis, the highlighted frauds and collapses of many esteemed brokerage houses have raised extensive public concerns over the internal control and external monitoring of BDs. Auditors of BDs, the supposed gatekeepers of public investors, have been especially criticized for failing their "watchdog" function (e.g., in the Madoff, Peregrine Financial Group, and IMF Global cases). In an attempt to restore the public's confidence in the BD industry and prevent BD fraud, the Securities and Exchange Commission (SEC), along with the Public Company Accounting Oversight Board (PCAOB), has made a series of important regulatory changes to BD auditing and reporting.

The recent BD regulations are reflective of the "fire-alarm" perspective for legislative oversight, in which new regulations only arrive when scandals or major regulatory failures arise (Kinney, 2005). However, using a global sample over a period of more than 200 years, Hail, et al. (2018) show that, while regulatory changes are often delayed responses to past scandals, new regulations often lead to more future scandals. In the BD industry, despite the systematic overhaul, recent PCAOB inspection findings indicate that deficiencies in BD audits remain prevalent after recent regulatory interventions. These findings suggest that the BD

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[1] The Securities Exchange Act of 1934 defines broker-dealers as any entity or individual engaged in the business of effecting transactions in securities for the account of others (broker) or for its own account (dealer). The term broker-dealer can be refer to both firms and their employees. This study focuses on the broker-dealer firms. Most brokerage firms serve both as a broker and as a dealer.

industry may have been plagued by low audit quality and that recent regulatory interventions may not achieve regulators' desired outcomes.

What are the root causes of persistent BD audit failures? Why do recent regulations of BD audits appear to be ineffective? Moreover, the PCAOB findings are based on apparent violations of codes and thus only capture the more egregious cases.[2] Are BDs also able to exploit and circumvent the rules? This study offers some insights into these important, practical questions that remain unanswered and that are highly relevant to the ongoing debates over future regulations for the BD industry.[3]

Drawing on DeFond and Zhang's (2014) framework, I posit that both BDs and their auditors might have low incentives for high audit quality and that recent regulatory changes might not adequately increase these incentives. Due to the lack of incentives for high audit quality, BDs might seek ways to circumvent the regulation and to avoid external monitoring, leading to audit failures and regulatory failures.

In particular, this study focuses on the opinion shopping behavior of BDs and examines whether and how this behavior is affected by recent BD audit and reporting regulatory interventions. Opinion shopping, a long-held regulatory concern as a major threat to auditor independence (e.g. U.S. Senate, 1976; SEC, 1988; PCAOB, 2011), refers to the search for

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[2] For example, in 2016, PCAOB identified independence findings in 11 audits, in which [quote] "the auditors were involved in the preparation of the financial statements or performed bookkeeping or other prohibited services. One of these firm's independence also appeared to be impaired because the terms of the engagement letter for the audit stated that the broker-dealer would indemnify the firm from all claims, liabilities, losses, and all expenses arising in connection with the audit engagement when there was a knowing misrepresentation by the client's management" (pp.3, PCAOB Release No. 2017-004).

[3] For example, (1) until the completion of this manuscript, PCAOB continues to conduct inspections for BDs under the interim inspection program and work to develop a rule proposal for a permanent inspection program (PCAOB, 2017); (2) SEC has received bulks of comment letters with split opinions over its proposed rule on strengthening the disclosure and responsibility requirements for BDs (SEC Release No. 34-83062); (3) In a letter to the House Financial Services Committee on July 9, 2018, 803 small brokerages support the Small Business Audit Correction Act to seek legislative relief from annual audits.

successor auditors in order to receive a favorable opinion when the incumbent auditor threatens to issue an unfavorable one (DeFond and Zhang, 2014).

My examination of BD opinion shopping is motivated by the ongoing regulatory concerns over BD opinion shopping. For example, during the House hearing on the Madoff Ponzi scheme and BD regulatory failures, Harry Markopolos, an independent fraud examiner, questioned Greenwich Sentry's frequent auditor switching because he was suspicious that the broker had been "auditor shopping" (U.S. House of Representatives, 2009). In 2015, Michael Maloney, the Chief Accountant of SEC's Division of Enforcement, stated that BD audits were one of the three major independence-related SEC enforcement priorities (SEC Speaks, 2015). Regarding BD auditors, he stated in the same speech that SEC enforcements focused on the acquiescence to opinion shopping, especially for small accounting firms.

Nevertheless, to my knowledge, there is no empirical evidence of BD opinion shopping in the existing literature. To fill this gap, I start by examining whether BDs successfully engage in opinion shopping.

After the expiration of a series of SEC exemption orders, for fiscal years ending after December 31, 2008, all BDs are required to engage a public accounting firm that is registered with the PCAOB (PCAOB Rule 2100, 2019). For BDs that were engaging a non-registered auditor in fiscal year 2008, their auditor choices were significantly affected by this regulatory change, resulting in a spike in auditor switching in fiscal year 2009. This exogenous shock to auditor switching enables me to employ a shock-IV design that tests the effects of auditor switching on subsequent audit opinions.

It is possible that BD auditors might have anticipated the rule change and actively register with the PCAOB ahead of the switch, resulting in an assumption violation of the shock-

IV design. I use the registration status of an incumbent auditor in August 2006 to instrument for auditor switching in fiscal year 2009. On December 12, 2006, the SEC extended the exemption to cover financial statements for fiscal years ending before January 1, 2009 (SEC, 2006). In August 2006, BD auditors had no information about the expiration date of this exemption, and, therefore, were less likely to react beforehand.[4]

This is a good instrument because a BD auditor's pre-shock registration status has a direct and significant impact on the BD's post-shock auditor choice, but arguably does not have any direct effect on audit opinions. One might argue that registering with the PCAOB might directly affect the auditor's propensity for issuing a favorable opinion due to PCAOB scrutiny. To mitigate this concern, this study excludes BDs that are publicly traded and/or engaging an auditor who also audits public firms. In fiscal year 2009, audits of privately-held BDs were not subject to PCAOB inspection.[5] A BD auditor was not subject to PCAOB inspection unless it was a public auditor.

I test my prediction by analyzing all BDs with sufficient data in the year subsequent to the implementation of the registration rule. Consistent with my first hypothesis, results of the shock-IV tests suggest that BDs successfully lower the likelihood of receiving an unfavorable opinion through opinion shopping.

I next examine the changes in BD opinion shopping around recent regulatory changes related to BD audit and reporting. I focus on the following regulatory changes: (1) the aforementioned PCAOB-registration requirement for BD auditors; (2) the switch to PCAOB

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[4] BDs might also anticipate and react beforehand to this regulatory change. This behavior would produce a bias that increases the Type-II error, which is against finding the results.
[5] There are only 13 publicly traded BDs among the thousands of BDs. The list of publicly traded BDs can be found at: http://investsnips.com/list-of-publicly-traded-brokers/

oversight in the BD industry; and (3) the SEC rules and PCAOB attestation standards implemented in 2014 to reform the reporting and auditing of the BD industry.

Consistent with my second hypothesis, I find that BD opinion shopping activities become more intensive after the required PCAOB-registration for BD auditors. This study also documents a sharp decline in the total number of active BD auditors around this regulatory change. In the sample of this study, the number of small auditors operating in the BD industry dropped from 1,275 to 922, or 27.7 percent, from fiscal year 2008 to 2009. Taken together, these findings suggest that a regulation that forces small auditors out of the market encourages opinion shopping. This unfavorable regulatory outcome is particularly interesting because, in contrast, by driving small auditors out of the market, the Sarbanes-Oxley Act of 2002 (SOX) enhances the overall quality of public issuer audits (DeFond and Lennox, 2011).

This study provides an explanation for this difference in the regulatory outcomes. Specifically, SOX increases the incentives for the demand and supply of high audit quality through many of its provisions, whereas the sole change in the registration requirement of PCAOB does not. Other than requiring BD auditors to file a registration report and pay a small registration fee, the required PCAOB registration was not accompanied by any other incentive-related BD auditing or reporting regulatory changes. Rather, it provided a cover for the opinion shopping behavior of the BDs that were not engaging a registered auditor, because they could conceal their opinion shopping under the guise of rule compliance (Lu, 2006).

Consistent with my third hypothesis, I find that PCAOB's assumption of oversight to the BD industry overall has limited effects upon opinion shopping, potentially because of the limited capacity of the current PCAOB's interim inspection program. Rather than inspecting all BD audits, PCAOB has been inspecting only a small percentage of BD audits. The evidence

that I present suggests that a lengthy delay before the implementation of a permanent inspection program for BD audits is not costless.

Importantly, I find that opinion shopping was *incrementally* more successful for BDs that switched to a nonpublic auditor compared with those that switched to a public auditor before, but not after, PCAOB assumed oversight of the BD industry. In this study, I define a public auditor as a BD auditor who engages in audits of public firms. [6] This effect is statistically significant after controlling for the auditor size and BD characteristics.

This finding is consistent with the fact that the switch to PCAOB oversight has closed the regulatory gap between public and nonpublic auditors in the BD industry. Before this regulatory change, PCAOB were authorized by the SOX to inspect quality control of public auditors but not nonpublic auditors. As a result, nonpublic auditors were subject to less regulatory scrutiny than public auditors. The switch in the audit authority in the BD industry has closed this gap and therefore eliminated the opportunity for BDs to switch to a less regulated auditor in order to further lower the likelihood of receiving an unfavorable opinion.

Consistent with my fourth hypothesis, I find that the implementation of SEC rules and PCAOB attestation standards in 2014 curtails BD opinion shopping. This finding is consistent with the new rules and standards imposing additional costs to BD opinion shopping. As such, this study provides the first evidence, to the best of my knowledge, as to how the recent SEC rules and PCAOB standards affect the decision-making of the BD industry.

However, this study also documents a sharp decline in the frequency of material weakness internal control (IC) opinions occurring around the rule adoption. Specifically, while the total number of going concern (GC) opinions remains rather constant, the total number of

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[6] Note that a public auditor normally refers to an audit firm that engages in the examinations of the financial reporting of a client, no matter whether the client is a publicly traded firm. In this paper, I deviate from this common terminology.

unfavorable IC opinions dropped from 248 to 32, an 87% reduction, from the fiscal year 2013 to 2014. After this recent rule adoption, the audit examination of material inadequacies for most BDs was significantly reduced in both its scope and requirements. This potentially suggests a potential loss in the informational value of BD audits.

In additional analyses, I examine the association between BD audit opinions and subsequent disciplinary actions of FINRA against BDs. Consistent with my prediction, I find that IC opinions are able to predict FINRA disciplinary actions against BDs before, but not after, the new auditing and reporting requirement of BD industry implemented in 2014. I also find that GC opinions are able to predict FINRA disciplinary actions against BDs, both before and after the fiscal year 2014. Taken together, these findings suggest that IC opinions become less informative after the recent standards were adopted in the BD industry.

This study highlights the role of regulation in protecting the integrity of the audit process and may be of interest to regulators and investors. This project also makes several contributions to the existing body of auditing and accounting literature.

First, prior studies mostly focused on opinion shopping of public firms, and there is no empirical evidence on opinion shopping of BDs. Using a shock-IV design, this study provides important evidence of BD opinion shopping, thereby filling the gap between the regulators' ongoing concern and the lack of empirical evidence on whether BDs successfully engage in opinion shopping. Methodologically, the main advantage of the shock-IV design used in this study is that it produces reliable estimates even in the presence of reverse causation and omitted correlated variables (Wooldridge, 2010; Atanasov and Black, 2016). This advantage is particularly relevant to opinion shopping studies because of the endogenous nature of auditor switching (e.g. Krishnan, et al., 1996; Lennox, 2000). There exists a two-way causality

between switching and audit opinions (e.g. Krishnan, et al., 1996; Lennox, 2000), both of which co-vary with other factors (e.g. DeFond, 1992). The endogeneity makes it difficult to identify the causal effects of switching on audit opinions, thereby making it difficult to infer whether clients successfully engage in opinion shopping.

Second, this study finds that the change in the registration requirement for BD auditors led to both a significant reduction in the number of BD auditors and more intensive opinion shopping. DeFond and Lennox (2014) found that SOX improves the quality of the public audit market by driving small auditors out of the market. The findings in this study suggest that a regulation that reduces the number of auditors *per se* may not achieve a desirable regulatory outcome, if the incentives for high audit quality are not improved. Moreover, similar to mandatory auditor rotation, this regulatory change created an exogenous shock to the switching decision of clients. The results suggest that such a shock blurs the true intent of switching and provides a cover for opinion shopping and, therefore, shed light on the debate over mandatory auditor rotation (e.g. PCAOB 2011a; 2011b).

Third, this study extends the literature on the effects of PCAOB oversight on audit quality by providing evidence on how PCAOB oversight affects the audit market for BDs. The results also imply that PCAOB's oversight of public audits has a spillover effect on BD audits. In contrast, prior studies mostly focused on the effects of PCAOB oversight on public issuer audits (e.g. Lennox and Pittman, 2010; Lamoreaux, 2016; DeFond and Lennox, 2017). These findings also add to the stream of research on "regulator shopping", where firms are allowed to choose their regulators (e.g. Donelson and Zaring, 2010; Leuz, et al., 2008). This stream of research mostly focuses on the consequences of SEC deregistration (e.g. Leuz, et al. 2008) or the existence of multiple regulators for banks (e.g. Donelson and Zaring, 2010). This study

explores the auditing channel through which BDs may avoid external monitoring by switching to a less regulated auditor.

Lastly, this study contributes to the under-researched BD literature by providing evidence on auditing issues and regulatory consequences in the BD industry. This evidence is timely and relevant given the importance of the industry and the ongoing regulatory focus in the BD industry. In doing so, this study adds to the literature on the cost of unfavorable audit opinion by showing that IC opinion and GC opinion are associated with subsequent FINRA disciplinary actions. This is also consistent with increased regulatory scrutiny after receiving an unfavorable audit opinion.

The rest of the paper proceeds as follows. Chapter 2 describes the institutional background. Chapter 3 reviews relevant literature and develops hypotheses. Chapter 4 presents the empirical design. Chapter 5 describes the sample and presents the results. Chapter 6 provides additional analysis, and Chapter 7 concludes.

Chapter 2

INSTITUTIONAL BACKGROUND

In 2016, the Securities Industry and Financial Markets Association (SIFMA) reported that more than a million public customer accounts in the United States (US) are held by BDs. In these accounts, an excess of $15 trillion, or 41.4%, of the household liquid financial assets are invested in equities. This includes more than $3 trillion of retirement funds, which account for about 40% of total US assets in Individual Retirement Accounts (IRAs). Because of their expansive connection to the US financial market, both the internal controls and external monitoring of BDs are critically vital to investor protection and the wider public interest.

BD reporting has long been governed by the Securities Exchange Act of 1934 (the Act) and the Securities Acts Amendments of 1975 (SEC, 2011a). During the period between 1997 and 2007, stock market trading increased by four times. In the meantime, the business of brokering and dealing in debt products and derivatives has grown substantially (Greenwood and Scharfstein, 2013). This fast expansion resulted in the increased risk of the BD business, making existing BD regulations show signs of being outdated.

The most famous fraud case from the 2008 financial crisis is the Madoff Ponzi scheme, in which roughly $65 billion was mismanaged. Madoff's scheme not only directly affected its millionaire investors, but also harmed the financial well-being of numerous small clients of Bernard Madoff. All were invested with Bernard Madoff and his asset-management firm, and eventually, all would be exposed as a lie. Even while Madoff Investments managed tremendous

assets, they surprisingly hired Friehling & Horowitz, a little-known accounting firm with only three employees to serve as their company auditor. During the trial, Friehling & Horowitz were accused for their role in obscuring information from the public scrutiny, which partially enabled Madoff's falsification of financial reports. Investigators realized that the firm had only served as a "rubber stamp," and had thus betrayed its legal obligations to investors and regulators. As a small firm, the auditor was not peer-reviewed and therefore unknown for its quality control. This suggested that the regulatory framework for BDs required an urgent overhaul.

The issues in BD audits are not limited to small auditors. For example, in another high-profile case, bankruptcy investigators discovered that MF Global comingled about $1.6 billion of customer money with its own financial accounts. However, only three months before its bankruptcy, PricewaterhouseCoopers (PwC) expressed a favorable opinion on the internal control of MF Global. This failure resulted in a $3 billion negligence lawsuit for PwC and MF Global. Because the segregation of client assets is a basic compliance deficiency, the regulator's attention on PwC focused on the integrity of PwC's audit process (Raymond, 2012).

In this chapter, I first briefly summarize the prior regulatory system and describe the major changes in the regulations for BDs and their auditors since the millennium. I then review recent PCAOB's inspection observations of the BD industry.

2.1 The status quo of the BD regulatory regime before the financial crisis

The broker-dealer industry is subject to the scrutiny of multiple regulators including the SEC, state authorities, and self-regulatory organizations (SROs). Under Section 15 of the Act, most broker-dealers must register with the SEC to conduct business in the United States. For many years, the SEC has delegated the regulatory authority over BDs to the Financial

Industry Regulatory Authority (FINRA), the largest SRO in the U.S. securities industry. Previously, the SEC had delegated this authority to its predecessor.[7] It had also delegated the audit authority over BD audits to the American Institute of Certified Public Accountants (AICPA) before the recent switch to PCAOB oversight in the BD industry.

FINRA oversees more than 3,800 BDs as of 2017. To offer investor protections, especially for retail investors, FINRA frequently brings disciplinary actions against broker-dealers and their employees for a wide range of misconducts. In 2017, FINRA brought about 1,008 disciplinary actions against BDs and associated individuals, to which about $73 million fines, restitutions, and disgorgement were sanctioned.

In addition to FINRA, Securities Investor Protection Corporation (SIPC) offers investor protection through the insolvency of BDs. SIPC covers up to $500,000 per customer for all accounts at the same insolvent BD, including a maximum of $250,000 for cash. However, SIPC only protects investors by restoring their assets that are in their accounts when the brokerage firm gets liquidated. As such, SIPC does not cover fraud by non-carrying BDs that do not hold custody of customer accounts (e.g. in the Sanford Ponzi-scheme case).

As mandated by Rule 17a-10(a)(1) of the Act, registered BDs are mandated to periodically file audited reports (the Financial and Operational Combined Uniform Single report, a.k.a. the FOCUS report) to the SEC on financial and operating conditions. Section 17a-5 of the Act requires that [quote]

"The audit shall be made in accordance with generally accepted auditing standards and shall include a review of the accounting system, the internal accounting control and procedures for safeguarding securities including appropriate tests thereof for the period since the prior examination date. The audit shall include all procedures necessary under the circumstances to

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[7] FINRA is the successor of the National Association of Securities Dealers (NASD), the then largest SRO in the BD industry, and the New York Stock Exchange's enforcement and arbitration divisions.

enable the independent public accountant to express an opinion on the statement of financial condition, results of operations, cash flow, and the Computation of Net Capital under § 240.15c3-1, the Computation for Determination of Reserve Requirements for Brokers or Dealers under Exhibit A of § 240.15c3-3, and Information Relating to the Possession or Control requirements under § 240.15c3-3. The scope of the audit and review of the accounting system, the internal control and procedures for safeguarding securities shall be sufficient to provide reasonable assurance that any material inadequacies existing at the date of the examination in (a) the accounting system; (b) the internal accounting controls; (c) procedures for safeguarding securities; and (d) the practices and procedures whose review is specified [in Rule 17a-5] would be disclosed."

Several points are noteworthy in the excerpt above. First, the term "review" implies a moderate level of assurance, which is inconsistent with the "reasonable" assurance requirement stated later (Bedard, et al., 2014). Second, the term "material inadequacy" was not defined at that time. Third, the scope of the material inadequacies examination covered both the internal control over financial reporting (ICFR) and the controls over business operations. The broad scope for the internal control test, the ambiguity of auditor's responsibility, and the complexity of the BD business operations all increase the difficulty in the internal control audit examination. Appendix A provides a list of the various types of BD businesses, as categorized by FINRA.

2.2 Changes in the regulations related to BD auditing and reporting

Figure 1 summarizes the timeline of major BD regulatory events. I briefly describe these events as follows.

2.2.1 SOX. Except for about a dozen of publicly-traded BDs, most BDs are privately held firms and thus are not directly affected by the SOX.[8] Section 101 of the SOX mandated all SEC registrants to engage a public accounting firm that is registered with the PCAOB.

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[8] Publicly-traded BDs that are accelerated filers are also subject to SOX 404 requirements of auditor's assessment on management's assessment of the ICFR conditions of the firm.

While SOX established a deadline for the auditors of issuers to register with the PCAOB, it did not provide a registration deadline for auditors of privately owned BDs. As a result of a series of SEC exemption orders, the registration deadline for private BD auditors was extended more than 6 years after the passage of the SOX.

Through Regulation S-X, SOX strengthens the independence requirements of BDs by limiting the provision of non-audit services to the client. However, many other provisions are not applicable to BDs, such as the required disclosure of partner rotation, compensation, audit committee pre-approval, or the cooling-off period.
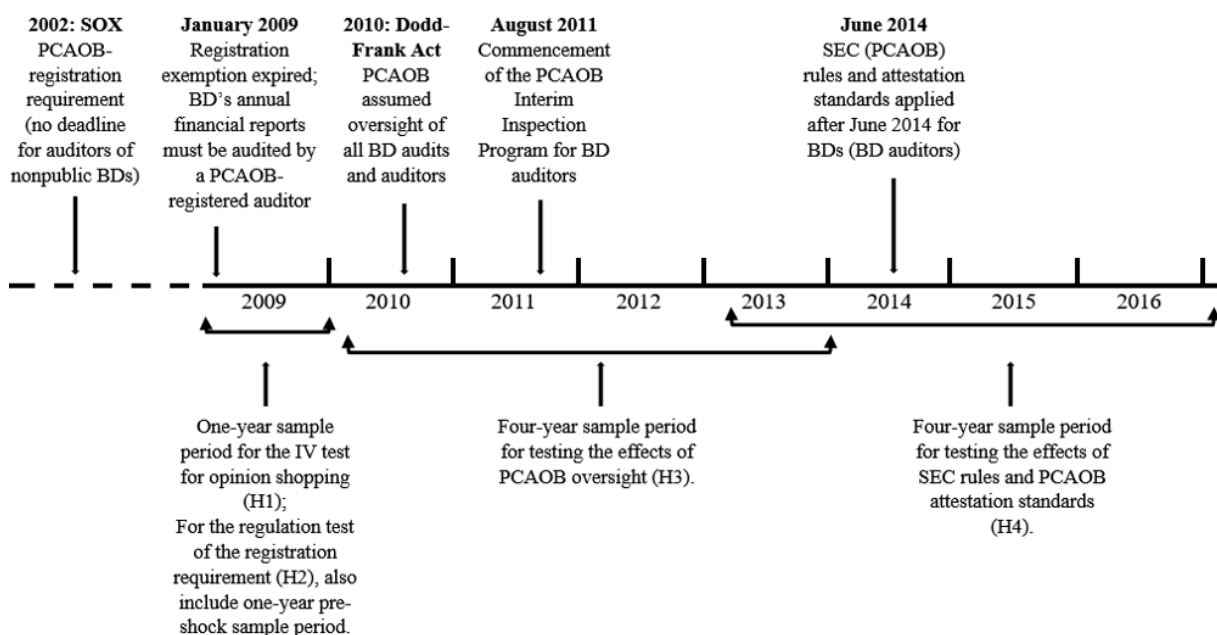
Figure 1: Timeline of Major Regulations and Sample Periods

2.2.2 Mandatory PCAOB-registration. After the financial crisis and many BD scandals, regulators began to be concerned about audit quality under this regulatory regime. Shortly after the arrest of Bernard Madoff, beginning January 1, 2009, the PCAOB-registration requirement became effective for all BD auditors, no matter whether their clients were publicly owned or

privately owned. Bedard, et al. (2018) found that the registration requirement significantly affected the audit market composition for BDs. Specifically, one year before this change, more than 70 percent of BD auditors were not registered with the PCAOB, and a significant number of these auditors exited the BD market around the mandatory registration.

This is somewhat surprising because this regulatory change *per se* arguably does not increase much the out-of-pocket cost to BDs and their auditors. According to the PCAOB's Rule 7102 (Allocation of Broker-Dealer Accounting Support Fee), only large BDs (with a net capital greater than $5 million during the preceding calendar year) are required to pay an accounting support fee. For auditors of BDs, in addition to the small amount of registration fee, they are required to file a registration report and an annual report to the PCAOB.[9]

Because SOX did not vest PCAOB with the authority to oversee BD audits, private BD audits were not subject to PCAOB inspections, standards and enforcements, even after the mandatory registration. Other BD audit regulations, such as the audit reporting requirements, independence requirement, and the "Material Inadequacy Statement" for private BD audits, were not affected by either the expiration of the exemption or registration with the PCAOB (SEC, 2009).

2.2.3 PCAOB oversight of the BD industry. SOX created a gap in the audit authority of the BD industry. Although all private BD audits were overseen by the AICPA, PCAOB has certain authority over the private BD auditors who also engage in the audits of public issuers (public auditors). Specifically, these BD auditors were subject to PCAOB firm-level inspections on the firm's system of quality control, including root-cause analyses, monitoring and maintaining independence, engagement quality review, and skepticism (PCAOB 2017b).

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[9] The current fee schedule for PCAOB registration is size-based. For firms with less than 50 clients, the fee is $500.

On the other hand, private BD auditors who do not engage in the audits of public issuers (nonpublic auditors) were not subject to any PCAOB oversight.

Through provisions in the Dodd-Frank Act of 2010, Congress vested more oversight to the SEC and gave PCAOB the sole authority to oversee the audit market for all BDs. As a result, the BD industry became the only sector in which PCAOB oversees both public and nonpublic auditors, as well as their audits.

In August 2011, the SEC approved PCAOB's rule on the interim inspection program for BD audits.[10] The program selected a small group of BD auditors and their BD audits each year to assess the compliance with the BD auditing standards of the American Institute of CPAs (AICPA). One objective of the interim inspection program is to help PCAOB determine the scope and elements of a permanent inspection program, including [quote] "whether and how to differentiate among classes of broker-dealers, whether to exempt any categories of firms, and the establishment of inspection schedules" (PCAOB 2017, pp. 1). In August 2012, PCAOB issued its first report discussing the results of its annual inspections on BD audits.

2.2.4 SEC's amendments to Rule 17a-5 and PCAOB's attestation standards. After 3 years of discussion and inquiry of public opinions, in July 2013, the SEC adopted final amendments to specific requirements for the reporting, auditing, and client notification of BDs (Rule 17a-5, Rule 17a-11). Three months later, PCAOB issued its final version of the attestation standards for BD audit engagements that follows the reporting structure by the SEC. These new SEC rules and PCAOB standards became effective for fiscal year ending on or after June 1, 2014. Since then, all BD audits and their auditors are subject to the revised PCAOB's

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[10] Until the completion of this draft, there is no fixed release date for a permanent inspection program.

standards and rules related to ethics and independence.[11]

Besides these requirements, the new rules have required additional disclosure that differentiates between carrying BDs (i.e., those that hold custody of clients' money) and non-carrying BDs (i.e., those that transmit funds to carrying BDs upon receipts).[12] Specifically, a carrying BD is required to file a compliance report that is examined by an auditor. Management is required to assert that the BD has established and has maintained internal control over compliance with SEC's Financial Responsibility Rule and provide reasonable assurance that noncompliance will be prevented or detected in a timely basis (PCAOB, 2013). The objective of this report is to inform regulators and other interested parties about the adequacy of internal controls related to the required minimum level net capital, the segregation and safeguarding of clients' assets, and the disclosure of internal controls to BD customers. On the other hand, a non-carrying BD is only required to file an exemption report asserting that the BD does not hold custody of customer assets.

Accordingly, auditors of carrying BDs must test and report on the operating effectiveness of internal controls over compliance (ICC). For non-carrying clients, auditors are mainly only required to perform a review of the client's statements regarding the exemption provisions and provide moderate assurance that the management's exemption report is fairly stated in all material aspects. For auditors of both carrying and non-carrying BDs, the responsibility in examining or reporting the material inadequacies in internal control over

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[11] Specifically, PCAOB Rule 3100, Compliance with Auditing and Related Professional Practice Standards, requires BD auditors to comply with the following standards: auditing standards; attestation standards; ethics and independence standards and rules; and quality control standards.
[12] As defined in SEC Release. No. 34-70073, the term "carry" is opposed to "introduce." An introducing broker is a broker-dealer who delegates the execution and settlement of orders from its clients or itself to a third-party clearing broker-dealer. Item 3 of the SEC Form Custody specifies that a "carried" customer account is the account that is not introduced on a fully disclosed basis to another broker-dealer.

financial reporting (ICFR) is explicitly omitted in the new rules and standards. Nevertheless, for carrying BDs, the rules implicitly require their auditors to examine material inadequacies in the accounting systems that may affect the ICC.

Overall, this differentiation in reporting requirements for the two types of BDs strengthens regulatory scrutiny over carrying BDs and alleviates the reporting burdens on the majority of BDs that are non-carring. However, this hides the fact that there is also substantial risk associated with most non-carrying BDs.[13] According to a PCAOB report in 2011, 66 of 77 examined liquidation cases were for non-carrying BDs, most of which were involved in fraud and theft of client assets (Gustafson, 2012).

2.3 PCAOB inspection results on BD audits

Until May 2019, the PCAOB has released 7 reports on the results of the PCAOB's interim inspection program related to audits of BDs. Table 1 provides a summary of these annual inspections.

PCAOB only inspected a small percentage of BD auditors and their audits under the interim inspection program. The inspection pool takes into account whether audits were conducted by public auditors or nonpublic auditors, as well as other factors, in order to include a cross-section of firms that audit BDs. PCAOB did not exclude any BDs from being eligible for selection and considered factors such as the BD's minimum net capital requirement and whether the BD maintained a Special Reserve Bank Account (PCAOB, 2013a). [14]

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[13] As of December 31, 2012, about 93% of the BDs are carrying BDs (Bedard, 2014).

[14] Under SEC Rule 15c3-3, BDs are generally required to maintain a "Special Reserve Bank Account for the Exclusive Benefit of Customers" (for the purpose of "carrying") if they do not claim exemption to the rule.

In every report, PCAOB found deficiencies in most of the inspected audits and their auditors. For example, in its first inspection, PCAOB found deficiencies in all 23 inspected audits performed by 10 distinct audit firms. Later inspections suggest that the potential low audit quality perseveres over time. In the 2016 inspection, PCAOB found deficiencies in 73 of the 75 covered BD audit firms and 96 of the 115 covered BD audits, (PCAOB Release No. 2017-004, pp. 4).

Table 1

List of PCAOB's Annual BD Inspection Reports

Year of the inspection	# of inspected BD audits	# of inspected auditors	# (%) of audits found to have deficiencies	# (%) of auditors found to have deficiencies in their audits	# (%) of independence findings
2011	23	10	23 (100%)	10 (100%)	2 (7%)
2012	60	43	57 (95%)	10 (23%)	22 (37%)
2013	90	60	70 (78%)	56 (93%)	21 (23%)
2014	106	66	92 (87%)	66 (100%)	26 (24%)
2015	115	75	89 (77%)	72 (96%)	8 (7%)
2016	115	75	96 (83%)	73 (97%)	11 (10%)
2017	116	75	88* (69%)	68 (91%)	4 (8%)**

*: The number or percentage is derived from the percentage reported by PCAOB.
**: For 2017, PCAOB only chose 48 audits in the inspection of independence. According to PCAOB: "the selection of independence as a focus area was risk-based, taking into consideration the characteristics of the audit firm, as compared to 2016 when independence was a focus area for all inspections" (PCAOB 2018, pp.2).

Nevertheless, independence deficiency findings have significantly dropped since the 2015 inspection, potentially suggesting an improvement in auditor independence. From 2014 to 2015, the percentage of independence deficiency findings in inspected reports dropped from 24 percent to 7 percent, a 70.8 percent reduction.

Although PCAOB started inspecting BD audits in 2011, they continued to evaluate inadequacies using AICPA standards until 2015. The 2015 inspection was also the first to be

conducted under the new PCAOB attestation standards, which, as mentioned earlier, have significantly increased (decreased) the requirement for the examination and reporting on the material inadequacies in the ICC (ICFR). Accordingly, the inspection findings reflect changes in BD auditing standards, which include the application of PCAOB independence requirements to auditors. Before this change, private BD auditors were not subject to AICPA independence rules, yet were still required to comply with SEC independence requirements.

Taken together, the PCAOB inspection findings potentially suggest that the recent regulatory interventions related to BD reporting and auditing did not significantly improve the overall audit quality of the BD market. Nevertheless, the recent standard setting may potentially increase the independence of BD auditors.

Chapter 3

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In this chapter, I draw on Defond and Zhang's (2014) economics-based framework, as well as existing research on audit practices for private firms to examine factors that may affect the demand and supply of audit quality in the BD industry. I then draw on the existing literature on opinion shopping and regulatory consequences in order to develop hypotheses.

3.1 The demand and supply of audit quality

In this framework, audit quality is viewed as an economic good that is jointly determined by the client demand and auditor supply, which are both affected by competencies and incentives. Competencies are determined by resources, such as human capital. The demand-side incentives are determined by agency conflicts. Supply-side incentives are determined by litigation risk, reputational scrutiny, and regulatory scrutiny. Regulation plays an important role in affecting both the demand and supply.

Auditor competency refers to an auditor's ability to deliver high-quality audits and is determined by human resources and expertise (DeFond and Zhang, 2014), which are positively associated with the firm size (DeAngelo, 1981). The audit market for BDs is composed of small accounting firms.[15] For example, during 2011, approximately 800 public accounting firms audited BD filings (PCAOB, 2012). Most of these firms only have a handful of

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[15] Before 2009, BDs were allowed to engage an individual CPA to perform required audits.

employees who lack proper training to ensure engagement quality. Prior to the recent adoption of PCAOB standards, BD auditors were not subject to AS 1220 (Engagement Quality Review), and therefore their audit personnel who participated in BD audit services were not subject to any training requirements (except for a CPA certificate).

The supply-side incentives for high audit quality arise from litigation risk, reputational costs, and regulatory concerns (DeFond and Zhang, 2014), which are relatively low for the audits of private firms (e.g. St. Pierre and Anderson, 1984; Johnstone and Bedard 2003). Most BD auditors are small in size and only have a handful of clients, whereas litigation risk is normally higher for firms "with deeper pockets" and reputational concerns are higher for auditors with more clients because audit failures may result in the loss of other clients (Skinner and Srinivasan, 2012).

Client competency is a client's ability to attain its desired audit quality (Defond and Zhang, 2014). Existing research finds that client competency can be enhanced with an independent and professional audit committee, which choose higher audit quality outputs (Krishnan, 2005). Most BDs are neither required nor have a designated audit committee, suggesting that BDs are lack of client competency to demand high audit quality.

The demand-side incentives for audit quality arise from agency conflicts (DeFond and Zhang, 2014). Prior studies argued that private firms were subject to different types of agency costs compared with public firms, and the incentives for high audit quality from the conflict between managers and investors could be low (Mehran and Stulz, 2007; Hope and Langli, 2010). Chaney, et al. (2004) found a significant, but small Big-N premium for private firms, which is consistent with cost-effectiveness outweighing the high audit quality for private firms. Due to concentrated ownership, BDs have relatively few external funding concerns and,

therefore, possess low conflict between managers and outside investors.

Instead, two other types of conflicts could be important in shaping the demand-side incentives for BDs. First, the agency conflicts between a controlling shareholder and minority shareholders may be relevant in the private market. Using a global sample of private firms, Guedhami and Pittman (2006) find evidence suggesting that minority shareholders do not value degrees of audit quality or better disclosures. Instead, they value legal institutions that protect them against financial failure. Second, in the financial service industry, the conflict of interests between a firm and its customers remain preeminently important due to an intrinsic conflict between the firm's interests and its duty to customers (e.g. Bolton, et al., 2007). It is unclear how these two types of conflicts would affect audit quality.

Prior studies found that the demand for audit quality was lower for private firms than for public firms. Hope et al. (2013) found that accrual quality and accounting conservatism were higher for public firms than for private firms. Badertscher et al. (2014) compared public firms with public debt to private firms holding debt and found that audit fees were substantially higher for public firms when compared to otherwise similar private firms. This is consistent with higher litigation risk giving rise to higher auditor efforts and risk pricing.

It appears that BD regulations did not strengthen the demand or supply of high audit quality. As mentioned in Chapter 2, Section 1, prior to the recent adoption of attestation standards in 2014 (I will later discuss the effects of recent regulatory changes on BD audit quality), the BD audit quality was handicapped by the ambiguity of auditor's responsibility, the relatively low requirements for independence and competency, and lower regulatory scrutiny. The broad scope of the material inadequacies examination, along with the complexity in BD business operations, also increases the difficulty of audit examination.

In sum, compared with public firms, BDs may have low demand for high audit quality because of a lack of incentives and competencies that encourage high audit quality. BD auditors also have low incentives to supply high audit quality due to low litigation risk, reputational concerns and regulatory scrutiny. Moreover, BD regulations have not adequately increased incentives toward incentivizing high audit quality, at least before recent regulatory changes. Taken together, these discussions suggest that audit quality is relatively low in the BD market.

3.2 Detecting Opinion Shopping

It has been argued that an unfavorable audit opinion draws negative investor reaction and regulatory scrutiny (e.g. Chow and Rice, 1982; Chen, et al. 2016). Clients may use auditor switching to avoid receiving an unfavorable opinion. While little research has examined how regulators react to negative audit opinions,[16] prior studies found much evidence on the negative investor reactions to unfavorable audit opinions, lending support to this argument (e.g. Ashbaugh-Skaife, et al., 2009; Menon and Williams, 2010).

The investing public has a general interest in the IC audit opinions of BDs. Because IC deficiencies may suggest weaknesses in the prevention of fraud, compliance and/or the safeguarding of clients' funds, regulators of BDs are also likely to use IC opinion to screen high-risk BDs given the limited resources. For example, Susan Axelrod, a former senior advisor to FINRA's CEO, stated during an interview that FINRA's High-Risk Registered Rep Program team selects and examines high-risk BDs based on available information and data "pointing us to what we want to look at." (Zulz, 2018). Consequently, we observe that BDs

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[16] In additional analysis, I examine whether regulators react to unfavorable audit opinions.

possess incentives to engage in IC opinion shopping to avoid public and regulatory scrutiny.

Conceptually, a client may avoid unfavorable audit opinions in two ways (Teoh, 1992). It may switch auditors if the client believes that the new auditor is more likely than their incumbent auditor to issue a favorable opinion (opinion shopping). It can also threaten to switch in order to obtain more favorable treatment from the incumbent auditor (switch threat). The second argument relies on the assumption of the existence of client-specific auditor rents. This assumption is relatively less likely to be satisfied in the auditing for private firms than for public firms, because the rents for private auditing are relatively less (Chaney, et al., 2004).[17]

In the existing literature, more evidence was found to support the opinion shopping argument than the switch threat argument (e.g. Lennox, 2000; Newton et al., 2015; Chen, et al., 2016). In related literature, Hope and Langli (2010) used Norwegian private firms as the setting to examine auditor independence and failed to find any association between auditor fee dependence and the likelihood of issuing a qualified opinion. The switch threat is found to be more credible with higher fee dependence. This evidence is consistent with a less credible switch threat due to low client-specific auditor rent in the private firm setting.

The extant opinion shopping literature has extensively focused on detecting the existence of opinion shopping in the audit markets of public firms. Earlier studies mostly focus on GC opinion shopping (e.g. Chow and Rice, 1982, Lennox, 2000). Nevertheless, successful opinion shopping implies compromised independence, which may be reflected in other auditing outcomes (DeFond and Zhang, 2014). As such, more recent studies examine whether managers successfully shop for auditors who would acquiesce to other accounting practices

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[17] The opinion shopping argument assumes that auditors possess different propensities when it comes to issuing a favorable opinion. This assumption is relatively uncontroversial, because auditors have different incentives and expertise.

(e.g. Newton, et al., 2015; DeFond, et al., 2018).

Prior studies found relatively more evidence of opinion shopping in foreign markets (e.g. Lennox, 2000; Chan, et al., 2006; Chen, et al., 2016). Evidence on the U.S. markets was rather mixed (e.g. Chow and Rice, 1982; Krishnan, 1994; DeFond, et al., 2000; Lennox, 2002; Newton, et al., 2016). For example, while Lennox (2002) found evidence of successful GC opinion shopping pre-SOX, Newton, et al. (2016) did not find that U.S. issuers successfully engaged in GC opinion shopping after SOX. One way to explain these mixed results is that the SOX curtailed opinion shopping. However, Newton, et al. (2016) also found that U.S. issuers successfully engaged in IC opinion shopping after SOX. These scholars interpreted their evidential findings as suggesting that the effectiveness of internal controls was more difficult for outsiders to speculate compared to GC status. Therefore, firms are more likely to engage in IC opinion shopping to conceal IC weaknesses. An alternative explanation might be that auditors viewed acquiescing to GC opinion shopping as costly due to the litigation risk of potential bankruptcy. Overall, these explanations potentially suggest that clients are more likely to engage in and/or gain from IC opinion shopping.

In summary, BDs have a weak demand for high audit quality but have strong incentives for a favorable audit opinion. BD auditors face low litigation risk, have less reputation concerns, and experience sparse regulatory inspection. Therefore, I predict that BDs are likely to successfully engage in opinion shopping. I state the first hypotheses in its alternative form as followed.

Hypothesis 1: BDs successfully engage in opinion shopping.

3.3 The effects of regulation on opinion shopping

The literature on regulatory consequence has been expanding rapidly due to the recent

trend to switch from self-regulation to government regulation (e.g. DeFond and Lennox, 2011, 2017; Doogar, et al., 2010; Lennox and Pittman, 2010). Prior studies have mostly focused on the effects of regulations like SOX on public firms, whereas relatively less is known about how regulations impact private firms. [18]

In the BD setting, Bedard, et al. (2018) used a pre-post design to examine the effects of the switch to PCAOB oversight. Their post-switch sample period began in 2010 and ended in 2012. However, this period does not fully capture the transition in oversight, because the PCAOB standards were not fully implemented until 2014. Nor does it provide a clean setting to examine specific regulatory changes related to BD audit. Their post-switch sample period started in one year after the change in registration requirement, omitting a part of the effect of this regulatory change. Their post-switching sample also included a period of time before PCAOB's inspection. Not until the second half of 2011 was PCAOB's interim inspection program approved by the SEC. The first year of the PCAOB inspection also has the smallest sample size across all years — only 21 BD audits were selected to be inspected. In contrast, the number of inspected audits was around 100 in subsequent years.

Research on regulatory outcome faces the challenge in identifying a proper control group, because all U.S. public firms are subjected to the same regulatory changes by the SOX. To overcome this difficulty, recent studies exploited the time-series variation in the PCAOB inspections (DeFond and Lennox, 2017) or the variation between foreign and cross-listed firms (Lamoreaux, 2016).

Lennox's (2000) called for research on the effects of audit regulatory changes on

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[18] Badertscher, et al. (2013) show that, by reducing the overall industry information uncertainty, SOX imposes a positive externality on the efficiency of private firm investments.

opinion shopping. As I am not aware of any study that examines the effects of regulations on opinion shopping, my study provides a novel approach that adds understanding of how clients react to regulatory changes.

3.3.1 Mandatory PCAOB-registration.

As discussed in Chapter 2, Section 2.2, the enforcement of the PCAOB-registration requirement on January 1, 2009 happened right after the financial crisis and the arrest of Madoff. It reflects the SEC's preliminary revisions to the regulatory structure for BD reporting and auditing. In 2009, this regulatory change was not accompanied by any other BD auditing or reporting regulatory changes.

Consequently, this regulatory change *per se* only foreshadowed more regulatory scrutiny in the future. In the short-term, it did not have measurable effects on either the competencies or the incentives for audit quality of the demand side or the supply side. After this regulatory change, the audit quality may still remain low in the short-term.

For BDs that engaged non-registered auditors before this regulatory change, this regulatory change provided an opportunity for them to engage in opinion shopping.. This is because the regulatory change dampens the information content of auditor switching. Intuitively, switching is normally perceived negatively because of the suspicion of opinion shopping. However, this regulatory change also incentivizes the switching behavior of the "good" BDs, which do not have the intention of opinion shopping. Consequently, this regulatory change provided the "opinion shoppers" a chance to mingle with the good BDs to hide their true intent of switching under the excuse of rule compliance or moving to a more independent auditor (Lu, 2006).

Because the demand and supply of high audit quality could remain low after this standalone regulatory change in the BD industry, I predict that BDs might exploit this change to engage in opinion shopping.

I formally state the second hypothesis as follows:

Hypothesis 2: Opinion shopping activities in the BD industry are more intensive after the implementation of the requirement to engage a PCAOB-registered auditor.

I next examine how the change in the BD audit oversight structure affects opinion shopping. One interesting aspect of this regulatory change is that the rules and standards that guide BD reporting and auditing were unchanged during the first several years of the PCAOB inspections of BD audits. Therefore, this study is able to single out the effect of PCAOB inspections from the effects of the related changes in auditing rules and standards.

Compared with AICPA, PCAOB is commonly believed to be a stricter oversight body (DeFond and Lennox, 2017; Lamoreaux, 2016). Consequently, after PCAOB took over the oversight role of the BD industry, their potential power in increasing regulatory scrutiny may have reduced opinion shopping activities. However, the effect of PCAOB oversight may be undermined by the fact that the PCAOB's current interim inspection program only covers a very small proportion of all BD auditors. Although the possibility of being inspected is an *ex-ante* threat, the low *ex-post* inspection probability may tamper its effect on enhancing audit quality, including deterring opinion shopping. As such, I do not offer directional predictions on the overall regulatory effect of the PCAOB on all BD audits.

The effect of changing oversight structures on opinion shopping can be less significant for public auditors than for nonpublic auditors. There are a few reasons for this difference.

First, the effect of PCAOB's oversight on public auditors may be mitigated by the fact that public auditors and their audits for public issuers were already subject to PCAOB inspections after the SOX. PCAOB inspects both the quality control of an accounting firm and its specific audits. Supposedly, the firm-level inspection would affect all audits of the inspected auditor, including BD audits. Moreover, Aobdia (2017) found that audit firm effort increases with inspected and non-inspected engagements after the firm's engagements are inspected by the PCAOB. Therefore, the PCAOB's inspection on issuer audits may have a spillover effect on the BD audits performed by the same auditor.

Second, DeFond and Lennox (2011) found that the SOX had its significant effect on audit quality through imposing disproportional costs on small, low-quality auditors, which forced them to exit the public audit market. As such, the remaining public auditors arguably have high audit quality, at least high enough to meet the regulators' minimum requirement. Therefore, if the Dodd-Frank Act leads to a similar influence on BD markets by driving low-quality auditors to exit the market, this influence may only affect nonpublic auditors.

Overall, as a shock to the supply side, the switch to PCAOB oversight might impose more regulatory scrutiny on BD auditors and their audits, and this effect could be more pronounced for nonpublic auditors than for public auditors. Consequently, this regulatory change would potentially lead to a greater increase in the supply of high audit quality of nonpublic auditors than of public auditors. I expect that nonpublic BD auditors were likely, but is no more likely, to acquiesce to opinion shopping than public auditors.

Hypothesis 3a: Opinion shopping in the BD industry was more pronounced for non-public auditors than for public auditors.

Hypothesis 3b: The difference in opinion shopping between public and non-public auditors

disappears after the PCAOB assumed the oversight role for the BD industry audits.

I next examine how the 2014's SEC rules and PCAOB standards affect the demand and supply of audit quality and hence, affect BD opinion shopping. The new rules and standards differentiate the reporting requirements for carrying and non-carrying BDs. Therefore, the overall effect of these rules and standards is a weighted effect on both types of BDs. Kowaleshi, et al. (2018) used the number of BDs with special reserve bank accounts to approximate the number of carrying BDs. In the PCAOB's (2013a) inspection report, the number of BDs holding that account was 311, or about 7 percent of all BDs. This small percentage suggests that the effects of the 2014's rules and standards on non-carrying BDs dominated the overall effects.

For carrying BDs, the ICC (ICFR) examination and reporting requirements have increased (decreased) after the regulatory change. The overall effect of these changes on carrying BD's demand for audit quality is unclear. For non-carrying BDs, the new rules and standards have significantly reduced the requirement for the examination and reporting on the material inadequacies. This reduction potentially reduces the demand for audit information, because the audit information may no longer be useful to outsiders. Consequently, the demand for audit quality and the demand for opinion shopping may both reduce.

The application of PCAOB independence requirements has been instituted along with these rules and standards. This could potentially have a positive effect on the independence of BD auditors. In addition, these new rules and standards overall have reduced the auditor's difficulty in assessing the IC material weakness and clarified the ambiguity in previous rules and standards. These changes have potentially increased the competencies of BD auditors. Because these independence rules and attestation standards were simultaneously adopted, it is

difficult to discern which change could be linked to a potential improvement in audit quality.

Furthermore, PCAOB inspection findings potentially reflect these changes in BD reporting and auditing regulations. Table 1 shows data around the adoption of new rules and standards. While PCAOB continued to find deficiencies in most inspected reports, the percentage of inspected audits with independence findings reduced from 24% in 2014 to 7% in 2015, the first year of the inspection under the new rules and standards.

Based on the discussion above, I predict that the changes in SEC rules and PCAOB standards are likely to discourage opinion shopping. The overall loss of information content in BD reporting and audit are likely to reduce the usefulness of both ICC and ICFR audit opinions and therefore reduce the incentives for opinion shopping. The increase in independence is likely to increase the difficulty of successful opinion shopping.

However, PCAOB inspections only cover a small proportion of BD auditors and their audits. The increased costs for opinion shopping could be low and therefore might not be able to deter opinion shopping. Therefore, it is uncertain whether BD opinion shopping activities would be reduced after the regulation.

I state the last hypothesis in its alternative form as follows.

Hypothesis 4: BDs are less likely to engage in opinion shopping after 2014's regulatory change to implement the new auditing and reporting standards for the BD industry.

Chapter 4

RESEARCH DESIGN

4.1 Detecting opinion shopping

4.1.1. Lennox's (2000) method.

To examine whether BDs engage in opinion shopping (Hypothesis 1), I begin by applying Lennox's (2000) framework to estimate both an audit reporting model and an auditor switching model. The audit reporting model is listed as followed.

$$gc_{it} = \gamma_0 + \gamma_1 switch_{it} + \gamma_2 gc_{it-1} + \gamma_3 ic_{it-1} + \gamma_4 gc_{it-1} * switch_{it} + \gamma_5 ic_{it-1} \qquad (1a)$$
$$* switch_{it} + \sum controls_{it} + \varepsilon_{it}$$

$$ic_{it} = \gamma_0 + \gamma_1 switch_{it} + \gamma_2 gc_{it-1} + \gamma_3 ic_{it-1} + \gamma_4 gc_{it-1} * switch_{it} + \gamma_5 ic_{it-1} \qquad (1b)$$
$$* switch_{it} + \sum controls_{it} + \varepsilon_{it}$$

I draw on the existing literature to build my empirical model and include both internal control (IC) audit opinions and going concern (GC) audit opinions as audit outcomes. I base my equation on Defond and Zhang's (2014) economics-based framework in order to include control variables that may affect the demand and supply of audit quality in the BD industry.

The dependent variable is an indicator variable that equals 1 if the BD receives an unfavorable GC (IC) opinion in the current fiscal year, and 0 otherwise. *Switch*$_{it}$ is an indicator variable that equals 1 if the BD's annual report is audited by a newly engaged auditor in the fiscal year t, and 0 otherwise. I also include interaction terms between auditor switching and lagged audit opinions. A significantly negative coefficient suggest that auditor switching

reduces the likelihood of receiving an unfavorable opinion for BDs with an unfavorable audit opinion in the last fiscal year.

Auditor opinion is widely considered to capture auditor independence and is relatively strong evidence of poor reporting quality (e.g. Defond and Zhang, 2014). I primarily focus on IC opinion to test opinion shopping for the following reasons. First, it is similar in the mechanism to the GC opinion, so it may shed light on auditor independence issues (Newton, et al., 2016). More importantly, in the BD auditing, the scope of IC examination not only includes the internal control in financial reporting (ICFR) but also describes inadequacies in company operations such as the safeguarding of customer assets. Therefore, IC opinion can be directly linked to potential weaknesses in preventing BD's fraudulent activities or excessive risk-taking behavior. Also, reporting and auditing for BD's internal controls are a major focus within the important regulatory changes of the last decade. Lastly, IC opinion has a relatively high rate of incidence compared with the GC opinion. This feature allows me to examine opinion shopping behavior within a short period of time.

I augment the model with a vector of control variables which are defined in detail in Appendix B. Auditor size is directly related to the litigation risk and reputation cost of an auditor (DeAngelo, 1981). Accordingly, I control for whether the auditor is a Big-4 auditor. I also control for whether the auditor has issuer clients (*nonpub*). As mentioned earlier, public auditors and nonpublic auditors are subject to different reporting requirements and have different exposure to litigation risk, reputational cost, and regulatory scrutiny. Because nonpublic auditors are normally smaller in size compared with public auditors. This variable also captures the size difference among auditors.

I also control for the cross-sectional differences in a set of BD characteristics. I include

the *size* of a BD to control for differences in the incentives and competencies (e.g. the potential increased litigation risk when the client is relatively large). I add several variables to the estimation to consider the cross-sectional differences in the agency conflicts related to BDs. As mentioned earlier, the conflicts between owners and minority shareholders can be an important factor to drive the demand for audit quality in private firms. Therefore, I include *ownership* and *leverage* (e.g. Francis and Wilson, 1988). Moreover, the conflicts between a firm and its customers may be important in the financial industry. Retail customers of BDs can lack information sources, making them less able to make professional investment-related decisions than institutional customers. I thus include the indicator variable whether the BD has retail businesses (*retail*) to control for the potential higher agency conflicts between the BD and its retail clients.

To account for regulation differences, I control for whether the BD is registered as a *foreign* subsidy, has non-security businesses, or is a clearing house.[19] All clearing houses are carrying BDs, and therefore the variable *clearing_house* also partially controls for the potential differential effects for carrying BDs. In addition, I control for whether the BD is affiliated with another financial institution because affiliates may not have the right to decide about their auditor choice (*affiliated*). Affiliated BDs may have different incentives compared with independent BDs. To control for the reporting complexity of a BD, I add the following three variables to the estimation: types of business of the BD (*num_busi*), as defined by FINRA,[20] a dummy of whether it has non-security business (*non_sec_busi*), and a dummy of whether it has fair value estimates in the annual reports (*fv_di*). In addition, because BDs that are closer

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[19] A non-security is a type of investment that is not freely marketable or transferable. A clearing house helps to facilitate clearance of transactions.

[20] In Appendix B, I provide a list of the types of broker-dealer business, as defined by FINRA.

to falling below the minimum net capital requirement may have more incentive to manipulate reporting outcomes, I include the decile ranking of the tightness to the minimum net capital requirement. Lastly, I include year dummies and state dummies to control for variations across fiscal years and differences in the business environments across states. All continuous variables are winsorized at 1 percent level and 99 percent level. In all tests, I cluster standard errors by BD to adjust for autocorrelation.

Hypothetically, one would like to compare the audit opinion with the unobserved opinion the client would have received had it made the opposite switch decision (Lennox, 2000). I estimate the following auditor switching model by plugging the opinion shopping variables (*os_gc* and *os_ic*) calculated from estimating equation (1a) and (1b). I use the difference between predicted conditional probabilities of receiving an unfavorable GC (IC) opinion if under the switch or non-switch scenario as the independent variable. A higher value of os_gc and os_ic suggests that the probability of receiving an unfavorable auditor opinion is higher if the BD switches the auditor than if it does not. A significantly negative coefficient on the opinion shopping variable suggests that BDs' auditor switch decision minimize the probability of receiving an unfavorable opinion.

$$switch_{it} = \beta_0 + \beta_1 os\_gc_{it-1} + \beta_2 os\_ic_{it-1} + \sum controls_{it} + \varepsilon_{it} \qquad (1c)$$

4.1.2 Shock-IV design

To draw causal inference through an ideal experiment, a researcher would randomly assign the auditor switching decision to clients, thus allowing us to attribute any differences between the treatment and control group to the effect of switching. In the BD industry, a regulatory shock provides a strong source of exogenous variation in auditor switching, bringing this study closer to a natural experiment.

To provide causal evidence on the effect of auditor switching on subsequent audit opinions, I use an IV design that exploits the exogenous auditor switching made by the regulatory change in the registration requirement of BD auditors. To construct the instrumented variable, I regress the variable $switch_{it}$ on the instrumental variable $shock_{it}$, which is an indicator that equals 1 if a BD engaged an auditor who was not registered with the PCAOB before the registration requirement, and 0 otherwise. The instrumental variable captures the treatment effect of the regulatory change, which requires BDs to engage an auditor who is registered with the PCAOB.

 Specifically, I estimate the following first-stage equation:

$$switch_{it} = \beta_0 + \beta_1 shock_{it} + \beta_2 regdate_{it} + \beta_3 regdate^2_{it} + \beta_4 gc_{it-1} + \beta_5 ic_{it-1} \quad (2a)$$
$$+ \sum controls_{it} + \varepsilon_{it}$$

In this probit model, I include the PCAOB registration date of an auditor ($regdate_{it}$) and its square form to control for any remaining continuous effects of the regulatory shock, which may have a less pronounced effect for earlier PCAOB-registered auditors. Earlier PCAOB registrants are often larger audit firms. Audit firm size can be used as a proxy for reputation concerns. As a result, these variables also absorb some differences in the reputational concerns among auditors.

I next estimate the second-stage equation to examine whether an auditor's reporting decision is affected by the client's switching choice. The only difference between this equation and the model used in the Lennox's reporting model in equation (1b) is that the auditor switching variable is replaced by the instrumented variable (predicted value) estimated from the first-stage equation. The second-stage estimation model is specified as follows:

$$ic_{it} = \gamma_0 + \gamma_1 \widehat{switch}_{it} + \gamma_2 gc_{it-1} + \gamma_3 ic_{it-1} + \gamma_4 gc_{it-1} * \widehat{switch}_{it} + \gamma_5 ic_{it-1} \quad (2b)$$
$$* \widehat{switch}_{it} + \sum controls_{it} + \varepsilon_{it}$$

As mentioned earlier, the strength of the IV design lies in its ability to isolate the effect of auditor switching on subsequent audit opinions, even in the presence of reverse causality and potential omitted correlated variables (Wooldridge, 2010). Nevertheless, for the shock-IV design to be valid, several assumptions are required. I next discuss these assumptions in the context of regulatory shock.

A. Regulatory impacts. This design assumes that an auditor's PCAOB-registration status has its effect on audit opinions only through its effects on auditor switching. This regulatory change apparently affects the auditor switching choice, especially for BDs that engaged a nonpublic auditor. As mentioned earlier, this registration requirement was a standalone change, and other changes related to BD reporting were made after the Dodd-Frank Act of 2010. Except for filing a registration report and paying a small fee to the PCAOB, auditors were not subject to any changes in their engagements after this regulation. Therefore, it is unlikely that this registration requirement had any direct impact on audit quality.

Nevertheless, an auditor's pre-shock registration status with the PCAOB could be correlated with a propensity for issuing a favorable audit opinion. Most auditors who registered before the regulatory change also audited public firms. Taking this information into account would have allowed the PCAOB to inspect the quality control of these auditors, which potentially increases the auditor's independence. To mitigate this concern, I exclude 1,751 observations for BDs that engaged an auditor who also audits public firms (public auditors). In fiscal year 2009, audits of privately-held BDs were not subject to PCAOB inspection. A BD auditor was only subject to PCAOB inspection as a public auditor. This reduction in the sample size reduces the power of the test but largely increases the covariate balances.

The effect of the shock on auditor switching should be relatively strong for the

following reasons. First, it gave BDs a cover for opinion shopping, especially for those that engaged a non-registered auditor. The intuition is that, to a certain extent, this regulatory change resembles a mandatory auditor rotation, which may suppress the information content of auditor switching and encourage aggressive audit reporting (Lu, 2006). Consequently, BDs might engage in opinion shopping under the guise of switching to a more independent auditor. Second, this was the first audit regulatory change in a relatively long time period. It was also potentially a response to the scandals during the financial crisis. Therefore, BDs and their auditors may view this shock as a signal of more frequent changes and more scrutiny in the regulatory environment in the future. Consequently, BDs may respond to this change by switching to a new auditor who may be more suitable for their need in the future, and auditors may exit the BD audit market to avoid a high cost in the future.

B. Rule Anticipation. This effect can be referred to as the *exogeneity* condition. In other words, the assignment of observations to the treatment group should be exogenous, implying that BDs and their auditors did not choose to be treated. However, because this regulatory change is a result of the expiration of a series of temporary SEC exemption orders, BDs and their auditors might anticipate that the SEC would not renew the exemption after 2008. This anticipation of regulation is possible because regulations are often the remediation after major fraudulent activities (Palmrose, 2013). Consequently, BDs might actively switch to a PCAOB-registered auditor beforehand to reduce the regulatory impacts, and non-registered auditors might register to the PCAOB before the shock to avoid losing clients.

To address this potential issue, I use an auditor's PCAOB-registration status in August 2006 to instrument for auditor switching in the fiscal year 2009. The last exemption order was issued on December 12, 2006, in which the SEC extended the deadline for PCAOB-registration

to the fiscal year ending before 2009. Therefore, BDs in August 2006 had no information about the expiration date of the new exemption order, and their auditor's PCAOB-registration status in August in the year 2006 is unlikely to be caused by the auditor's accommodating the regulatory shock. Therefore, this IV choice would attenuate potential biases arisen from BD's rule anticipation and auditor's rule accommodation.

C. Rule Compliance. The *exogeneity* condition also assumes that all BDs are fully compliant with the rules. This means that the shock fully explains the way in which BDs are treated. In reality, a small proportion of BDs continued to use a non-public auditor after the regulation change. Most of these BDs switched to a public auditor during the second year after the regulation. Thus, these BDs are presumably regarded as misinterpreting and thus being unintentionally non-compliant to the rule.[21] Misinterpreting the rule is not uncommon for BD auditors. For example, the SEC prohibits auditors to provide bookkeeping services to the firm chosen to be audited. However, many BD auditors fail to comply, because they believe that they are exempt from this rule (Norris 2012).

One disadvantage of this design is the limited time period of observations, as the effect of the rule shock on auditor switching should be concentrated among the first annual audits after the regulation. Because the effect of this shock on auditor switching should only apply to the first annual audits after the regulation, I only use the observations during the fiscal year 2008 (the pre-shock year) and 2009 (the post-shock year). Because of the low frequency of GC opinions, this short time period of data is insufficient to test for GC opinion shopping. Thus, only the results related to IC opinion shopping are interpreted in the shock-IV tests.

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[21] Untabulated tests suggest that the main results do not change significantly after I remove these observations.

4.2 The effects of regulation on BD opinion shopping

4.2.1 The effects of the change in PCAOB registration requirement

The IV test can be used to examine the effects of the requirement to engage a PCAOB-registered auditor on BD opinion shopping. However, this test provides limited insights into the severity of opinion shopping activities before and after the regulation. Therefore, I also use a difference-in-difference (DiD) approach to test Hypothesis 2. Specifically, I estimate the following audit reporting model:

$$ic_{it} = \gamma_0 + \gamma_1 switch_{it} + \gamma_2 gc_{it-1} + \gamma_3 ic_{it-1} + \gamma_4 gc_{it-1} * switch_{it} + \gamma_5 ic \qquad (2c)$$
$$* switch_{it} + \gamma_6 shock_{it} + \gamma_6 shock_{it} * switch_{it} + \gamma_7 shock_{it} * gc_{it-1}$$
$$+ \gamma_8 shock_{it} * ic_{it-1} + \gamma_9 shock_{it} * gc_{it-1} * switch_{it} + \gamma_{10} shock_{it} * ic_{it-1}$$
$$* switch_{it} + \sum Controls_{it} + \varepsilon_{it}$$

In this test, I use BD reports in both the year before and the year after the regulatory change. Similar to IV tests, I only focus on the IC opinion shopping due to the limited number of observations. The variable *shock* is an indicator that equals 1 if the BD engages a non-registered auditor before the regulatory change. The interactions between audit opinions and auditor switching capture the scope for opinion shopping (Newton, et al., 2016), and the three-way interaction term ($\gamma_{10} shock_{it} * ic_{it-1} * switch_{it}$) captures the change in the BD opinion shopping caused by the regulatory change. To support my prediction in Hypothesis 2, the coefficients on the three-way interaction term should be significantly negative.

4.2.2 The effects of PCAOB oversight to the audit market of BDs

I test the effects of PCAOB's oversight (Hypothesis 3a and 3b) by augmenting the previous audit reporting model and auditor switching model as follows.

$$gc_{it} = \gamma_0 + \gamma_1 switch_{it} + \gamma_2 gc_{it-1} + \gamma_3 ic_{it-1} + \gamma_4 gc_{it-1} * switch_{it} + \gamma_5 ic_{it-1} \qquad (3a)$$
$$* switch_{it} + \gamma_6 nonpub_{it} + \gamma_6 nonpub_{it} * switch_{it} + \gamma_7 nonpub_{it} * gc_{it-1}$$
$$+ \gamma_8 nonpub_{it} * ic_{it-1} + \gamma_9 nonpub_{it} * gc_{it-1} * switch_{it} + \gamma_{10} nonpub_{it}$$
$$* ic_{it-1} * switch_{it} + \sum Controls_{it} + \varepsilon_{it}$$

$$ic_{it} = \gamma_0 + \gamma_1 switch_{it} + \gamma_2 gc_{it-1} + \gamma_3 ic_{it-1} + \gamma_4 gc_{it-1} * switch_{it} + \gamma_5 ic \qquad (3b)$$
$$* switch_{it} + \gamma_6 nonpub_{it} + \gamma_6 nonpub_{it} * switch_{it} + \gamma_7 nonpub_{it} * gc_{it-1}$$
$$+ \gamma_8 nonpub_{it} * ic_{it-1} + \gamma_9 nonpub_{it} * gc_{it-1} * switch_{it} + \gamma_{10} nonpub_{it}$$
$$* ic_{it-1} * switch_{it} + \sum Controls_{it} + \varepsilon_{it}$$

$$switch\_nonpub_{it} = \beta_0 + \beta_1 os\_gc_{it-1} + \beta_2 os\_ic_{it-1} + \sum controls_{it} + \varepsilon_{it} \qquad (3c)$$

To compare the BD opinion shopping behavior around the regulatory change, I run both a pre-shock test and a post-shock test, using observations within t years before or after the treatment. A 2-year sample provides adequate GC opinions for a proper statistical inference. To support my prediction in Hypothesis 2, the coefficients on the three-way interaction term should be significantly negative before, but insignificant after, the regulatory change.

The audit report model is similar to the difference-in-difference-in-difference (DDD) approach. Note that I do not use a shock-IV design because PCAOB inspection presumably may have direct effects on audit reporting. In the auditor switching models (3c), the dependent variable is an indicator that equals 1 if the BD switch to a nonpublic auditor in the current fiscal year, and 0 otherwise. The coefficients β_1 and β_2 is expected to be significantly negative in equation (3c) and significantly positive in equation (3b).

Specifically, I include an indicator *nonpub$_{it}$* that equals 1 if the auditor was not having any issuer clients, and 0 otherwise. I also include interaction terms between *nonpub$_{it}$* and auditor switching and audit opinions. The three-way interaction term is the variable of interest, which captures the differences in the likelihood of receiving an unfavorable audit opinion between switching to a public auditor and nonpublic auditor for BDs that received an unfavorable opinion in the last fiscal year.

PCAOB commenced its inspection program in August 2011. In its first year, 23 audits conducted by 10 auditors were reviewed. PCAOB made its first inspection results publicly

available in August 2012. Given that opinion shopping is a rather lengthy process, I assume that the influence of this regulation on opinion shopping had begun since fiscal year ending after 2011. This bifurcation may underestimate the promptness of the regulatory effects and lead to underestimated coefficients.

Note that I do not rely on Lennox's (2000) framework in the regulation test, because one of its maintained assumptions is that the scope for opinion shopping should be constant across the estimation period. The reason is that Lennox's (2000) method imitates the decision-making process of clients, who first use past information to estimate the likelihood of receiving a favorable opinion conditioning on switching choice, and then make switching decision based on whether switching would increase the likelihood of receiving a favorable opinion. This use of past information requires the opinion shopping environment to be relatively stable in order to make a relevant prediction, whereas a regulatory change that affects the opinion shopping environment would reduce the likelihood of a useful estimation.

4.2.3 The effects of the SEC rules and PCAOB standards

To examine the effect of the recent standard setting on opinion shopping, I augment equation (1a), (1b), and (1c) with an indicator that equals 1 if the fiscal year ends after June 1, 2014, the effective date of the new rules and standards, and 0 otherwise. Specifically, the probit regression equations are listed as follows:

$$
\begin{aligned}
gc_{it} = \gamma_0 &+ \gamma_1 switch_{it} + \gamma_2 gc_{it-1} + \gamma_3 ic_{it-1} + \gamma_4 gc_{it-1} * switch_{it} + \gamma_5 ic * switch_{it} \\
&+ \gamma_6 post_{it} + \gamma_6 post_{it} * switch_{it} + \gamma_7 post_{it} * gc_{it-1} + \gamma_8 post_{it} * ic_{it-1} \\
&+ \gamma_9 post_{it} * gc_{it-1} * switch_{it} + \gamma_{10} post_{it} * ic_{it-1} * switch_{it} \\
&+ \sum controls_{it} + \varepsilon_{it}
\end{aligned} \tag{4a}
$$

$$
\begin{aligned}
ic_{it} = \gamma_0 &+ \gamma_1 switch_{it} + \gamma_2 gc_{it-1} + \gamma_3 ic_{it-1} + \gamma_4 gc_{it-1} * switch_{it} + \gamma_5 ic_{it-1} * switch_{it} \\
&+ \gamma_6 post_{it} + \gamma_6 post_{it} * switch_{it} + \gamma_7 post_{it} * gc_{it-1} + \gamma_8 post_{it} * ic_{it-1} \\
&+ \gamma_9 post_{it} * gc_{it-1} * switch_{it} + \gamma_{10} post_{it} * ic_{it-1} * switch_{it} \\
&+ \sum controls_{it} + \varepsilon_{it}
\end{aligned} \tag{4b}
$$

$$switch_{it} = \beta_0 + \beta_1 os\_gc_{it-1} + \beta_2 os\_ic_{it-1} + \beta_3 post_{it} + \beta_5 os\_gc_{it-1} * post_{it}$$
$$+ \beta_6 os\_ic_{it-1} * post_{it} + \sum controls_{it} + \varepsilon_{it} \tag{4c}$$

$$switch_{it} = \beta_0 + \beta_1 gc_{it-1} + \beta_2 ic_{it-1} + \beta_3 post_{it} + \beta_5 os\_gc_{it-1} * post_{it} + \beta_6 os_{ic_{it-1}}$$
$$* post_{it} + \sum controls_{it} + \varepsilon_{it} \tag{4d}$$

Similar to the tests for the effects of PCAOB oversight, I use observations that are within 2 years before or after the regulatory change and compare the coefficients in the pre-shock and post-shock tests to provide support to Hypothesis 3a and 3b.

Chapter 5

SAMPLE SELECTION AND RESULTS

5.1 Sample selection and descriptive statistics

I obtain information on BD annual financial reports and auditor information from BD Focus Reports (SEC form X-17A-5) provided by SEC EDGAR and obtain information on BD characteristics that are not shown in the financial statement and FINRA disciplinary actions from FINRA's BrokerCheck. Information on PCAOB registration status comes from PCAOB's Reports on Registration for Public Accounting Firms. SEC Edgar provides BD focus reports since 2001.

The sample starts from the fiscal year 2002 in order to compute one-year lagged variables. I remove any observations with a fiscal ending date before August 2002, when SOX is enacted, to allow for a clearer interpretation of the recent regulatory effects. I then exclude duplicated filings or amended filings. I construct the sample at the intersection of data provided by FINRA's BrokerCheck and SEC EDGAR, which provide information on BDs registered with FINRA and SEC respectively. This procedure excludes 231 BDs from the sample. The remaining samples include BDs that are registered with the SEC and FINRA at the time of the report. Lastly, I remove all observations with missing values. These procedures result in a final sample of 57,143 audited reports for 7,530 BDs. Panel A of Table 2 provides a description of sample selection procedures.

Table 2: Sample Selection, Descriptive Statistics and Correlations

Panel A: Sample Selection

	broker-dealer-years	broker-dealers
All annual reports (X-17A-5) of SEC-registered broker-dealers in the SEC EDGAR Broker Dealer Focus Reports database	78,591	8,716
Less:		
Reporting date before the passage of SOX	(5,423)	(420)
Duplicated filings and amended reports	(5,023)	(2)
Observations that cannot be matched to BrokerCheck	(1,256)	(231)
Observations with missing data related to auditor identities, auditor opinions, and client characteristics	(9,746)	(533)
Final Sample	**57,143**	**7,530**

Panel B: Descriptive Statistics

Variable Name	Mean	Std Dev	P25	Median	P75
affiliated	0.428	0.495	0.000	0.000	1.000
nonpub	0.546	0.498	0.000	1.000	1.000
big4	0.184	0.387	0.000	0.000	0.000
clearing_house	0.012	0.110	0.000	0.000	0.000
dereg	0.077	0.267	0.000	0.000	0.000
expel	0.005	0.068	0.000	0.000	0.000
fine	0.065	0.246	0.000	0.000	0.000
foreign	0.014	0.117	0.000	0.000	0.000
fv_di	0.277	0.447	0.000	0.000	1.000
gc	0.016	0.124	0.000	0.000	0.000
ic	0.059	0.236	0.000	0.000	0.000
leverage	2.273	3.994	1.065	1.270	1.813
retail	0.473	0.499	0.000	0.000	1.000
non_sec_busi	0.387	0.487	0.000	0.000	1.000
num_busi	5.753	4.417	2.000	4.000	9.000
ownership	2.760	0.614	3.000	3.000	3.000
post	0.131	0.338	0.000	0.000	0.000
size	13.677	2.811	11.714	13.248	15.161
switch	0.144	0.352	0.000	0.000	0.000
tight	4.470	2.871	2.000	4.000	7.000

Panel C: Descriptive Statistics by Fiscal Year

Fiscal year	Number of broker-dealers	Number (%) of audit firms	Number (%) of GC opinions	Number (%) of IC opinions	Number (%) of auditor switching
2002	3585	1265 (35.3%)	55 (1.5%)	134 (3.7%)	562 (15.7%)
2003	4435	1479 (33.3%)	63 (1.4%)	231 (5.2%)	599 (13.5%)
2004	4401	1425 (32.4%)	58 (1.3%)	233 (5.3%)	624 (14.2%)
2005	4091	1316 (32.2%)	46 (1.1%)	235 (5.7%)	527 (12.9%)
2006	4278	1327 (31.0%)	45 (1.1%)	292 (6.8%)	533 (12.5%)
2007	4338	1310 (30.2%)	54 (1.2%)	382 (8.8%)	574 (13.2%)
2008	4307	1275 (29.6%)	68 (1.6%)	357 (8.3%)	517 (12.0%)
2009	4232	922 (21.8%)	79 (1.9%)	339 (8.0%)	901 (21.3%)
2010	4143	854 (20.6%)	76 (1.8%)	301 (7.3%)	531 (12.8%)
2011	3999	792 (19.8%)	66 (1.7%)	321 (8.0%)	478 (12.0%)
2012	3906	756 (19.4%)	58 (1.5%)	249 (6.4%)	590 (15.1%)
2013	3747	717 (19.1%)	71 (1.9%)	248 (6.6%)	477 (12.7%)
2014	3626	588 (16.2%)	72 (2.0%)	32 (0.9%)	629 (17.3%)
2015	3576	510 (14.3%)	69 (1.9%)	16 (0.4%)	636 (17.8%)
2016	498	169 (33.9%)	10 (2.0%)	4 (0.8%)	83 (16.7%)

Panel D: Descriptive Statistics by Broker-dealers within the sample period

	Number (percentage) of BDs
Total	7,530 (100%)
Active as of 01/01/2016	3,111 (41.3%)
Has ever received at least 1 GC opinion	479 (6.4%)
Has ever received at least 1 IC opinion	1,348 (17.9%)
Has ever used Big-4 auditors	1,703 (22.6%)
Has ever used auditors without any issuer clients	5,010 (66.5%)
Has ever switched its auditor	4,553 (60.5%)
Has ever been fined by FINRA	1,697 (22.5%)
Was expelled from FINRA membership	265 (3.5%)

Panel E: Pearson Correlations of Major Variables

		GC_t	IC_t	GC_{t-1}	IC_{t-1}	$SWITCH_t$
1	GC_t	1				
2	IC_t	0.036***	1			
3	GC_{t-1}	0.522***	0.019***	1		
4	IC_{t-1}	0.022***	0.601***	0.025***	1	
5	$SWITCH_t$	0.026***	0.022***	0.039***	0.016***	1

*$p<0.10$, ** $p<0.05$, *** $p<0.01$

Descriptive statistics in Table 2 Panel B show that the average size of BDs is relatively small, with a mean of about $870,000 in total assets *(size)*. About 42 percent of BDs are affiliates of other financial institutions (*affiliated*). More than a half of all BDs have a controlling owner that holds more than 50 percent of the firm (*ownership*). The audit market for BDs is comprised of small accounting firms. The percentage of BD reports that were audited by a Big-4 auditor is only 18.4 percent. In addition, about 55 percent of BD audits were performed by auditors who do not have any issuer clients. On the other hand, the auditor switching frequency is on average 14.4 percent each year, which is much higher than in the public market.[22] A potential reason for this difference is the outsider perception of auditor switching. Because auditor switching is normally read negatively by outside observers, public issuers are more reluctant to do so in the fear of negative market reactions. This conjecture is consistent with the findings in prior studies showing that private firms normally have a higher switching rate than public firms.[23] The occurrence rate of the GC (IC) opinions is 1.6 (5.9) percent. For IC opinion, the reason for the higher rate could be that the broad scope of the internal control examination for BDs. Every year, an average of 7.7 percent of BDs stop registering with the SEC, which may be the result of financial distress, regulatory actions (such as being expelled by FINRA), or voluntary deregistration due to other concerns.

Panel C provides yearly descriptive statistics. It shows that the total number of active BDs gradually drops across the sample period. Interesting, this number did not dramatically drop after the financial crisis. On the other hand, the total number of auditors in the BD market

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[22] In this section, the information source on the public market audits are from descriptive statistics in Newton, et al. (2015). For example, the switching rate is less than 3 percent in the sample in Newton, et al. (2015).

[23] For comparison, Hope and Langli (2010) reports a mean of 16% for auditor switching in their sample of private firms. In his sample of publicly traded U.S. firms, Krishnan (1994) reports a mean of 7% for auditor switching in a sample of public firms.

has dropped dramatically by about 28 percent in 2009, potentially due to the mandatory requirement of PCAOB registration. Among all years, the switching rate in the fiscal year 2009 is the highest (21.8%), much higher than any other years. This spike in the auditor switching is likely due to the mandatory PCAOB registration. For other fiscal years, the switching rate significantly increased from 12.0 percent to 15.1 percent from 2011 to 2012, and from 12.7 percent to 17.3 percent from 2013 to 2014. These two time periods coincided with the switch to PCAOB oversight and the implementations of the SEC rules and PCAOB standards. Since fiscal year 2014, the incidence of IC opinions for each year has also sharply dropped. This is consistent with the implementation of the rules and standards reducing the requirement for IC examination. In the meantime, the rules related to GC examination remain largely unchanged after the regulation. Accordingly, the frequency of GC opinions remains relatively stable throughout the sample period. [24]

Panel D provides descriptive statistics at the BD firm level. It shows that, from 2002 to 2016,[25] there are 7,530 BDs in the sample period. At the end of 2016, only 3,111 BDs are active, and the rest BDs are no longer registered with the SEC and/or FINRA. More than 60 percent of the BDs have engaged at least two different audit firms as their engagement auditor. It also shows that more than 20 percent of the BDs were fined by FINRA, suggesting that a large proportion of BDs were once involved in fraud and/or non-compliance of rules.

Lastly, Panel E presents the Pearson correlations between the switching variable and audit opinion variables, all of which are positively correlated and are significant at the 1 percent level. The high correlations between the current and lagged audit opinions reflect the

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[24] The slightly higher frequency of GC opinions after 2008 is partly due to the more severed financial distress of BDs after the 2008 financial crisis.

[25] The sample does not cover all reports in fiscal year 2016 because of data availability.

persistence of IC and GC variables.

5.2 Testing the existence of successful BD opinion shopping (Hypothesis 1).

5.2.1 Lennox's (2000) approach. This section examines opinion shopping using Lennox's (2000) framework. Table 3 presents the probit regression results for the audit reporting model (first two columns) and the auditor switching model (last two columns). The final numbers of observations that are used in each estimation may vary, because certain observations predict failure perfectly when state fixed effects are included. State fixed effects are included in order to control for regulatory differences across states.[26] The GC opinion and IC opinion are used as the independent variable in Column (1) and (2), respectively. The lagged auditor opinions are used as the independent variables in Column (3). In Column (4), the "GC opinion shopping" variable (*os_gc*) and the "IC opinion shopping" variable (*os_ic*) are estimated from the audit reporting models in Column (1) and Column (2), respectively, using the method in Lennox (2000).

In Column (1) and (2), the coefficients on lagged opinions are significantly positive, suggesting the high persistence of the audit opinions. The coefficient on $switch_t$ is significantly positive, suggesting that BDs are more likely to switch if they received a GC (IC) opinion in the last fiscal year. The coefficient on the interaction between gc_{t-1} (ic_{t-1}) and $switch_t$ is significantly negative, indicating that BDs are less likely to receive a GC (IC) opinion if they received a GC (IC) opinion in the last fiscal year *and* they switch in the current year. These results suggest that the BD market has the scope for opinion shopping.

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[26] In untabulated tests, regression results are qualitatively similar to the main results when state fixed effects are excluded.

Table 3: Opinion Shopping Models – Lennox's (2000) Approach

	Audit Reporting Model		Auditor Switching Model	
	(1)	(2)	(3)	(4)
	gc	ic	switch	switch
switch	0.109**	0.421***		
	(2.33)	(14.56)		
lag_gc	2.702***	0.037	0.281***	
	(40.37)	(0.40)	(5.28)	
lag_gc*switch	-0.589***	-0.030		
	(-4.82)	(-0.16)		
lag_ic	0.055	2.407***	0.076***	
	(0.77)	(62.61)	(2.69)	
lag_ic*switch	-0.002	-1.223***		
	(-0.01)	(-17.30)		
os_gc				-4.608***
				(-5.37)
os_ic				-0.368***
				(-3.22)
affiliated	-0.238***	-0.107***	0.025	0.019
	(-5.26)	(-3.88)	(1.63)	(1.23)
nonpub	-0.185***	-0.001		
	(-4.56)	(-0.04)		
big4	0.114*	-0.017		
	(1.67)	(-0.42)		
lag_nonpub			-0.188***	-0.189***
			(-11.84)	(-11.92)
lag_big4			-0.343***	-0.343***
			(-13.70)	(-13.72)
clearing_house	0.281*	0.106	0.017	0.029
	(1.70)	(0.94)	(0.24)	(0.42)
foreign	0.126	-0.261	-1.190***	-1.195***
	(0.61)	(-0.64)	(-16.30)	(-16.34)
fv_di	-0.031	0.075***	0.020	0.021
	(-0.68)	(2.71)	(1.24)	(1.26)
leverage	0.006	0.007**	0.003	0.003
	(1.17)	(1.97)	(1.38)	(1.45)
non_sec_busi	-0.002	-0.020	-0.020	-0.021
	(-0.05)	(-0.80)	(-1.37)	(-1.40)
num_busi	-0.010	-0.010**	0.003	0.002

	(-1.54)	(-2.35)	(1.01)	(0.89)
ownership	0.052	-0.016	0.022*	0.022*
	(1.60)	(-0.85)	(1.88)	(1.87)
retail	0.185***	0.107***	0.024	0.031
	(3.35)	(2.94)	(1.10)	(1.45)
size	-0.049***	-0.041***	-0.026***	-0.028***
	(-4.49)	(-5.90)	(-6.26)	(-6.85)
tight	0.087***	0.024***	0.006**	0.007***
	(11.18)	(4.85)	(2.05)	(2.63)
_cons	-2.273***	-1.760***	0.510***	0.809***
	(-9.09)	(-4.46)	(6.78)	(8.97)
state, year FE	Y	Y	Y	Y
PSEUDO R²	0.375	0.400	0.021	0.021
N	55584	57068	57143	57143

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Standard errors are cluster-robust at the BD level.

In terms of control variables, the coefficients on *affiliated, retail, size and tight* are significant in both GC opinion shopping and IC opinion shopping estimations. The coefficients on *nonpub, big4, and clearing_house* are significant in estimating the GC reporting model but insignificant in estimating the IC reporting model. Coefficients on *fv_di, leverage and num_busi* are insignificant in estimating the GC reporting model but significant in estimating the IC reporting model. One potential explanation for these differences is that auditors may view a Type II error in a GC opinion as relatively risky, and material inadequacies are more likely to exist for BDs that have higher reporting or operational complexity.

Column 4 of Table 3 shows that coefficients on *os_gc* and *os_ic* are both significantly negative, suggesting that BDs would be more likely to receive a GC opinion or IC opinion had they made opposite switching decisions. These results are in accordance with the findings of the audit reporting model, which provide supportive evidence that the BD audit market has the scope for GC opinion shopping and IC opinion shopping. Overall, these results suggest that BDs engage in opinion shopping by switching auditor or threating the incumbent auditor for

more favorable treatment.

In Column 3, the coefficients on *lag_gc* and *lag_ic* are both significantly positive, suggesting that BDs are more likely to switch if they received an unfavorable audit opinion in the last fiscal year. Untabulated tests suggest that these findings are robust if I (a) augment the model to the full specification in Lennox (2000), in which control variables also interact with *switch*, or (b) remove annual reports that are audited by a PCAOB annually inspected firm.

For control variables, the coefficients on *lag_nonpub and lag_big4* are significantly negative, suggesting that a BD is less likely to switch if their incumbent auditor is either a big-4 auditor or an auditor who does not have issuer clients, suggesting that the switching behavior of BDs may be different based on the firm *size* of their incumbent auditors. In addition, smaller BDs (those BDs that have higher ownership concentration or who are close to the minimum net capital requirements) are more likely to switch auditors. These characteristics are associated with a lower level of agency conflicts between managers and investors, as well as a more financially distressed business. Also, *foreign* BDs are less likely to switch auditors when compared to domestic BDs.

5.2.2 The shock-IV approach. This section examines opinion shopping using the shock-IV design. Results are presented in Table 4. Panel A of Table 4 presents the results of the first-stage estimation. In column 1, I use an auditor's PCAOB registration status in 2009 as an instrument to measure audit switching. The coefficient on the main explanatory variable *Shock* is significantly negative, which is because I also added *regdate* and the square of *regdate* in the estimation. These two variables are highly correlated with the variable *shock.* In untabulated test, I remove the *regdate* and *regdate_sq* from the first-stage estimation, and then the coefficient on *shock* turns significantly positive. The pseudo R-square (32.2%) is rather

large compared with the R-squares in the auditor switching models of other tests, indicating the high explanatory power of this regulatory shock on the switching choice. The partial F-statistic for the instrumental variable is 43.63, much larger than the minimum threshold of 10 for a reliable statistical inference based on the IV estimates.

Table 4: Opinion Shopping Models – Shock IV Estimation

Panel A: First-stage estimation

	(1) *switch*	(2) *switch*	(3) *switch*
shock	-0.880***	-0.792***	-0.480***
	(-6.61)	(-6.31)	(-3.24)
regdate	-0.007***	-0.005***	-0.008***
	(-14.08)	(-9.05)	(-11.42)
regdate_sq	0.000***	0.000***	0.000***
	(22.00)	(18.40)	(19.31)
lag_gc	-0.072	-0.071	-0.400
	(-0.34)	(-0.33)	(-1.39)
lag_ic	0.010	0.020	0.016
	(0.10)	(0.21)	(0.13)
affiliated	0.009	0.010	0.053
	(0.15)	(0.18)	(0.70)
lag_nonpub	0.062	0.128	–
	(0.67)	(1.43)	–
lag_big4	-0.734***	-0.678***	–
	(-7.07)	(-6.48)	–
clearing_house	-0.522	-0.504	–
	(-1.54)	(-1.50)	–
foreign	0.214	0.265	0.440
	(0.49)	(0.61)	(0.78)
fv_di	-0.011	-0.005	-0.067
	(-0.18)	(-0.08)	(-0.81)
leverage	0.011	0.012	0.000
	(1.35)	(1.45)	(0.02)
non_sec_busi	-0.075	-0.062	-0.023
	(-1.33)	(-1.09)	(-0.32)
num_busi	-0.011	-0.012	-0.002

	(-1.10)	(-1.18)	(-0.14)
ownership	0.012	0.017	0.027
	(0.27)	(0.39)	(0.51)
retail	0.214***	0.223***	0.119
	(2.66)	(2.76)	(1.11)
size	-0.047***	-0.045***	0.006
	(-2.83)	(-2.74)	(0.25)
tight	0.011	0.013	0.020
	(0.96)	(1.17)	(1.38)
_cons	-0.136	-0.357	-0.840
	(-0.29)	(-0.76)	(-1.52)
State FE	Y	Y	Y
Partial F-statistic for the instrument	43.63	39.86	10.47
pseudo R^2	0.322	0.320	0.403
N	4196	4196	2460

t statistics in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Panel B: Second-stage estimation

	(1) ic	(2) ic	(3) ic	(4) ic
	Shock=1 if non-registered before 2009	Shock=1 if non-registered before 2006	Shock=1 if non-registered before 2009	Yhat=switch (Not instrumented)
	2009 Sample	2009 sample	2009 Non-pub auditor sample	2009 sample
switch_hat	0.668***	0.677***	0.729***	0.583***
	(4.76)	(4.75)	(4.88)	(6.74)
lag_gc	-0.071	-0.047	-0.066	0.234
	(-0.19)	(-0.13)	(-0.17)	(0.77)
lag_gc_yhat	0.112	0.036	-0.139	0.000
	(0.11)	(0.04)	(-0.12)	–
lag_ic	2.381***	2.409***	2.756***	2.367***
	(19.56)	(19.66)	(17.39)	(22.57)
lag_ic_yhat	-1.483***	-1.580***	-1.858***	-1.347***
	(-5.01)	(-5.28)	(-5.83)	(-7.09)
affiliated	-0.137*	-0.137*	-0.200*	-0.165**

	(-1.67)	(-1.67)	(-1.94)	(-1.98)
nonpub	0.276***	0.276***	0.209	0.286***
	(3.18)	(3.18)	(1.41)	(3.27)
big4	-0.021	-0.019	0.778	0.004
	(-0.13)	(-0.12)	(1.13)	(0.03)
clearing_house	0.388	0.384	–	0.397
	(1.14)	(1.12)	–	(1.15)
foreign	-0.412	-0.421	-0.297	-0.414
	(-1.01)	(-1.03)	(-0.51)	(-1.01)
fv_di	-0.025	-0.025	-0.086	-0.013
	(-0.28)	(-0.28)	(-0.79)	(-0.15)
leverage	0.002	0.002	0.007	0.004
	(0.12)	(0.14)	(0.31)	(0.30)
non_sec_busi	0.006	0.008	-0.052	0.018
	(0.08)	(0.11)	(-0.56)	(0.23)
num_busi	-0.010	-0.010	-0.017	-0.015
	(-0.74)	(-0.76)	(-0.96)	(-1.10)
ownership	-0.059	-0.060	-0.031	-0.058
	(-1.07)	(-1.09)	(-0.46)	(-1.05)
retail	-0.027	-0.021	-0.041	-0.005
	(-0.25)	(-0.19)	(-0.30)	(-0.05)
size	-0.010	-0.011	-0.001	-0.018
	(-0.43)	(-0.45)	(-0.04)	(-0.74)
tight	0.029*	0.029*	0.031*	0.028*
	(1.91)	(1.90)	(1.66)	(1.84)
_cons	-1.292***	-1.282***	-1.482**	-1.199***
	(-2.89)	(-2.86)	(-2.56)	(-2.68)
State FE	Y	Y	Y	Y
pseudo R^2	0.352	0.353	0.368	0.369
N	4136	4136	2385	4155

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01

In addition, the coefficient on *lag_big4* is significantly negative, suggesting that BDs are less likely to switch if the incumbent auditor was a Big-4 auditor. The coefficient on *retail* is significantly positive, suggesting that a BD is more likely to switch its auditor if it has retail clients. In addition, the significantly negative coefficient on *Size* suggests that smaller BDs are more likely to switch. Other control variables are no longer significant.

Results from the second-stage estimation are presented in Table 4, Panel B. The coefficient on the interaction between the instrumented variable and lagged IC opinion is significantly negative. This result provides important evidence on opinion shopping by suggesting that if BDs received an unfavorable opinion in the last fiscal year, then auditor switching would increase the likelihood of receiving a favorable opinion in the current fiscal year. The coefficient on *switch_hat* is significantly positive, similar to the findings in Lennox (2000).

These results potentially suggest that switching auditors would reduce the likelihood of receiving an unfavorable audit opinion only for BDs that are more likely to be the suspect for opinion shopping. For other BDs, there could be many reasons for switching, such as seeking for higher audit quality, complying with the rules,

In the second column, to mitigate concerns that BDs and their auditors may self-select into treatment, I use an auditor's PCAOB registration status in 2006 to instrument for audit switching. In column 3, I further reduce the sample to include only audits that were performed by a nonpublic auditor in order to improve the covariate balance between the treated group and the control group. Overall, results in column 2 and 3 are qualitatively similar to the results in column 1. Lastly, as a baseline regression, I present results using the un-instrumented variable (*switch*) as the independent variable. Results are presented in column (4). These results, however, should be interpreted with caution because the coefficients also absorb the reverse-causal effect of audit opinions on auditor switching.

5.3 Testing the effects of the requirement to engage a PCAOB-registered auditor (Hypothesis 2)

The test in the previous section provides relatively robust evidence suggesting that BD

successfully engage in opinion shopping. The shock-IV test also sheds light on whether the implementation of the required PCAOB-registered auditor affected opinion shopping for BDs. In Panel B of Table 4, the significantly negative coefficient on the interaction between lagged IC opinion and the instrumented variable suggests that BDs that received an unfavorable IC opinion before the regulatory change are also less likely to receive an unfavorable IC opinion after the change. This potentially suggests that these BDs gain from the regulatory change. Interestingly, the significantly positive coefficient on the instrumented variable (*switch_hat*) suggests that BDs that received a favorable IC opinion before the regulatory change are more likely to receive an unfavorable IC opinion after the change. This potentially suggests that the audit quality of these BDs improved after the regulatory change.

To offer more insights into the pre-post changes in the BD opinion shopping behavior, I estimated a DiD model, the results of which are presented in Table 5. The coefficient on the interaction between lagged IC opinion and switching is significantly negative, suggesting that the scope for IC opinion shopping was significantly existent before the regulatory change. More importantly, the three-way interaction variable *switch*lag_ic*shock* suggest that IC opinion shopping was even more intensive immediately after the change. This finding is consistent with the findings in the shock-IV tests, suggesting a more intensive BD opinion shopping after the regulation. Overall, these results show that, perhaps unintentional to the regulators, the requirement for BDs to engage a PCAOB-registered auditor motivated opinion shopping, at least for the short term.

Table 5: The Effects of Mandatory PCAOB-Registration

	(1)
	ic
switch	0.446***

	(3.28)
shock	0.073
	(0.84)
switch*shock	0.110
	(0.64)
lag_ic*shock	0.188
	(1.10)
switch*lag_ic*shock	-0.715**
	(-2.05)
regdate	0.000***
	(3.40)
lag_gc	-0.452
	(-1.42)
lag_gc*switch	1.167**
	(2.27)
lag_ic	2.538***
	(23.12)
lag_ic*switch	-1.169***
	(-4.46)
affiliated	-0.113
	(-1.53)
auditor_nonpub_di	–
	–
big4	–
	–
clearing_house	0.544
	(1.39)
foreign	-0.312
	(-0.60)
fv_di	0.077
	(1.02)
leverage	0.019
	(1.31)
non_sec_busi	-0.035
	(-0.53)
num_busi	-0.032**
	(-2.56)
ownership	-0.001
	(-0.02)
retail	0.182*
	(1.88)

size	-0.040*
	(-1.80)
tight	0.024*
	(1.76)
carry	-0.299
	(-0.57)
_cons	-1.724***
	(-4.81)
pseudo R²	0.409
N	4882

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the BD level.

5.4 Testing the effects of PCAOB's assumption of oversight to BD audits (Hypothesis 3a and 3b)

Table 6 presents the testing results for Hypothesis 3a and 3b. Panel A of Table 6 shows the probit regression results for the audit reporting models used for testing the effect of PCAOB's oversight in 2012 on BD opinion shopping. Results for the GC opinion shopping tests are listed in the first three columns. In the first column, the sample covers all observations before the regulatory change. Column (2) and (3) report testing results using observation data from two years before and after the regulatory change. In all three columns, the coefficients on the three-way interaction term $nonpub_{it} * gc_{it-1} * switch_{it}$ are not statistically significant at any reasonable level, suggesting that there are no significant difference in issuing GC opinions between audits of public and nonpublic auditors before and after the regulatory change. The coefficient on the interaction term between gc_{it-1} and $switch_{it}$ remains significantly negative, and the coefficient on gc_{it-1} remains significantly positive after the regulatory change, suggesting that GC opinion shopping continue to be significantly present in the BD market.

Results for the IC opinion shopping tests are listed in the columns (4)-(6) of Table 6.

The coefficient on the interaction term between mw_{it-1} and $switch_{it}$ remains significantly negative, and the coefficient on mw_{it-1} remains significantly positive across all columns. Importantly, the coefficients on $nonpub_{it} * mw_{it-1} * switch_{it}$ are negative and statistically significant in Column (4) and (5) but not statistically significant in Column (6). These results suggest that switching to a nonpublic auditor would further reduce the likelihood of receiving an unfavorable IC opinion before, but not after, the PCAOB assumed authority over BD audits in 2012.

Table 6: The Effects of the PCAOB's Oversight on Opinion Shopping

Panel A: Audit Reporting Models

	(1)	(2)	(3)	(4)	(5)	(6)
		gc			*ic*	
	2002-2011	*2010-2011*	*2012-2013*	*2002-2011*	*2010-2011*	*2012-2013*
switch	0.049	-0.129	0.320*	0.336***	0.806***	0.377***
	(0.56)	(-0.59)	(1.80)	(6.61)	(7.70)	(3.50)
switch*nonpub	0.046	0.090	0.096	0.135**	-0.058	0.192
	(0.40)	(0.30)	(0.39)	(2.03)	(-0.40)	(1.27)
lag_gc	2.739***	2.447***	3.380***	0.056	-0.060	-0.050
	(23.35)	(9.44)	(9.34)	(0.58)	(-0.28)	(-0.22)
lag_gc*switch	-0.648***	-0.205	-1.201**			
	(-2.86)	(-0.37)	(-1.96)			
lag_gc*nonpub	-0.121	0.345	-0.855**			
	(-0.79)	(1.03)	(-2.00)			
lag_gc*switch*nonpub	0.215	-0.374	0.904			
	(0.73)	(-0.54)	(1.10)			
lag_ic	0.113	0.041	-0.033	1.985***	2.205***	2.206***
	(1.55)	(0.25)	(-0.18)	(34.69)	(18.32)	(18.44)
lag_ic*switch				-0.770***	-0.795**	-1.423***
				(-5.91)	(-2.53)	(-4.80)
lag_ic*nonpub				0.789***	0.642***	-0.106
				(11.13)	(4.20)	(-0.70)
lag_ic*switch*nonpub				-0.693***	-0.969**	0.063
				(-4.32)	(-2.54)	(0.16)
big4	0.101	0.444**	0.378*	0.004	0.015	-0.091

	(1.25)	(2.53)	(1.89)	(0.08)	(0.13)	(-0.77)

	(1)	(2)	(3)	(4)	(5)	(6)
nonpub	-0.196***	-0.138	-0.090	-0.125***	-0.106	-0.140*
	(-3.60)	(-1.18)	(-0.68)	(-3.48)	(-1.24)	(-1.73)
foreign	0.226	0.468	-1.141*	-0.303	-0.190	-0.685*
	(0.86)	(1.06)	(-1.80)	(-0.61)	(-0.40)	(-1.82)
retail	0.164***	0.165	0.335**	0.092**	0.038	0.078
	(2.65)	(1.19)	(2.33)	(2.45)	(0.42)	(0.87)
ownership	0.037	0.035	0.028	-0.019	-0.060	-0.020
	(1.07)	(0.44)	(0.33)	(-0.99)	(-1.36)	(-0.42)
num_busi	-0.006	-0.006	-0.026	-0.008*	0.009	-0.009
	(-0.82)	(-0.33)	(-1.36)	(-1.84)	(0.79)	(-0.79)
affiliated	-0.260***	-0.229**	-0.357***	-0.126***	-0.059	-0.073
	(-4.99)	(-2.13)	(-3.09)	(-4.41)	(-0.93)	(-1.18)
non_sec_busi	-0.026	-0.083	-0.089	-0.009	-0.020	-0.039
	(-0.60)	(-0.85)	(-0.82)	(-0.34)	(-0.32)	(-0.63)
clearing_house	0.371**	0.179	–	0.142	0.412*	-0.083
	(2.19)	(0.41)	–	(1.20)	(1.84)	(-0.27)
size	-0.047***	-0.058**	-0.046	-0.039***	-0.058***	-0.064***
	(-3.61)	(-1.97)	(-1.46)	(-5.06)	(-3.20)	(-3.46)
leverage	0.004	-0.024	0.012	0.006	-0.001	0.008
	(0.55)	(-0.97)	(0.76)	(1.52)	(-0.08)	(0.83)
fv_di	-0.014	-0.003	-0.018	0.045	0.137**	0.204***
	(-0.26)	(-0.03)	(-0.15)	(1.49)	(1.98)	(3.10)
tight	0.086***	0.089***	0.099***	0.024***	0.040***	0.024**
	(9.70)	(4.49)	(4.60)	(4.73)	(3.36)	(2.02)
_cons	-2.318***	-1.984***	-2.258***	-1.708***	-1.392***	-0.553
	(-8.10)	(-3.32)	(-4.26)	(-3.41)	(-2.86)	(-1.36)
state, year FE	Y	Y	Y	Y	Y	Y
PSEUDO R^2	0.363	0.375	0.401	0.410	0.466	0.348
N	40424	6526	5856	41729	8008	7445

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the broker-dealer level.

Panel B: Auditor Switching Models

	(1)	(2)	(3)	(4)	(5)	(6)
			switch_nonpub			
	2002-2011	2010-2011	2012-2013	2002-2011	2010-2011	2012-2013
lag_ic	0.275***	0.213	0.201			
	(3.77)	(1.29)	(1.31)			
lag_gc	0.578***	1.128***	0.269			
	(5.18)	(5.15)	(0.94)			

os_gc				-10.165***	-19.290***	-3.944
				(-5.48)	(-5.46)	(-0.75)
os_ic				-1.207***	-1.049	-0.886
				(-4.13)	(-1.57)	(-1.40)
ownership	-0.055*	-0.051	-0.071	-0.056*	-0.054	-0.073
	(-1.73)	(-0.67)	(-1.03)	(-1.76)	(-0.71)	(-1.05)
num_busi	-0.006	-0.011	0.023	-0.007	-0.011	0.023
	(-0.97)	(-0.62)	(1.37)	(-1.06)	(-0.64)	(1.35)
foreign	-0.036	-0.017	–	-0.040	-0.032	–
	(-0.11)	(-0.03)	–	(-0.13)	(-0.06)	–
size	-0.120***	-0.098***	-0.137***	-0.125***	-0.106***	-0.140***
	(-11.24)	(-3.84)	(-5.20)	(-11.78)	(-4.12)	(-5.38)
lag_big4	-0.170***	-0.650***	-0.280**	-0.172***	-0.666***	-0.283**
	(-3.50)	(-3.99)	(-1.98)	(-3.55)	(-4.01)	(-1.99)
leverage	0.006	0.003	0.029**	0.006	0.002	0.029**
	(0.94)	(0.14)	(2.49)	(1.01)	(0.10)	(2.54)
fv_di	0.089*	0.032	0.058	0.091**	0.017	0.061
	(1.92)	(0.30)	(0.54)	(1.97)	(0.16)	(0.57)
retail	0.200***	0.079	-0.094	0.214***	0.096	-0.088
	(3.74)	(0.56)	(-0.64)	(4.00)	(0.68)	(-0.60)
non_sec_bu si	0.014	0.077	0.202**	0.014	0.083	0.203**
	(0.36)	(0.85)	(2.28)	(0.36)	(0.90)	(2.28)
affiliated	-0.133***	0.102	-0.107	-0.147***	0.088	-0.114
	(-3.25)	(1.07)	(-1.17)	(-3.56)	(0.91)	(-1.23)
tight	0.003	-0.008	0.015	0.004	-0.003	0.017
	(0.36)	(-0.42)	(0.88)	(0.59)	(-0.16)	(0.96)
clearing_ho use	0.042	–	–	0.059	–	–
	(0.24)	–	–	(0.33)	–	–
_cons	0.022	-0.237	0.019	0.731**	0.945	0.370
	(0.07)	(-0.38)	(0.03)	(2.15)	(1.47)	(0.56)
state, year FE	Y	Y	Y	Y	Y	Y
pseudo R²	0.107	0.130	0.130	0.107	0.132	0.130
N	18308	3366	3174	18308	3366	3174

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the broker-dealer level.

Panel B of Table 6 shows the probit regression results for the auditor switching models. In column (1) and (2), the coefficients on lagged audit opinions are significantly positive, suggesting a positive relationship between the unfavorable audit opinions and the subsequent

auditor switching. However, in column (3), the coefficients on the lagged opinions are no longer significant. In column (4) to column (6), similar results were found using Lennox's (2000) method. Taken as a whole, these results can be interpreted to mean that nonpublic auditors have a higher likelihood than public auditors to issue a favorable IC opinion before, but not after, the regulatory change. Accordingly, BDs are more successful at opinion shopping when they switch to a nonpublic auditor before, but not after, the regulatory change.

Overall, these findings provide supportive evidence for Hypothesis 3b and imply that the "shopping for a laxer regulated auditor" behavior has come to an end after PCAOB assumed oversight authority. However, even after the regulatory change, audit opinions appear to be consistently correlated with the client's switching decision. These results suggest that the opinion shopping behavior still remains prevalent in the BD market.

These findings also have the following implications. Although regulators made a series of changes to the roles and responsibilities of BD auditors, most of these changes only focus on auditors and do not impose any direct changes to the auditor's clients. The results of this paper suggest that a sole shock to the supply side does not significantly reduce the overall BD opinion shopping activities. This finding is different from the findings in Defond and Lennox (2011), in which the authors find that the positive effect of the SOX on audit quality is driven by low-quality auditors exiting the public market. For them, a decline in the small auditors is mainly driven by the supply side.

A possible explanation for this difference is that, because of the low entry barrier, BD auditors face more intense competition, which may negatively affect the auditor independence (Newton, et al., 2015). The minimum requirements for auditing BDs are much lower than those more extensive requirements required for public firms. Consequently, the audit market for BDs

is comprised of small auditors. At any given time, numerous other small auditors wait to enter the market. Yet, the demand for high audit quality in the BD audit market remains much lower than in the public audit market.

5.4 Testing the Effects of the Adoption of SEC rules and PCAOB's Standards (Hypothesis 4)

This section presents results for testing Hypothesis 4 in Table 7. Column (1) reports results on the audit reporting model used for testing GC opinion shopping. The variable *post* is an indicator that equals to 1 if the fiscal year end for the BD financial report is no earlier than June 1, 2014. The coefficient on *switch* is significantly positive, and the coefficient on *lag_gc*switch* is significantly negative. In the last two columns reporting on auditor switching models, the coefficient on *os_gc* is significantly negative, and the coefficient on the lagged GC opinion is significantly positive. Overall, these results suggest that, before the recent regulatory change, GC opinion shopping behavior had been significantly present in the BD market.

Table 7: The Effects of the 2014 adoption of SEC rules and PCAOB standards on Audit Reporting and Auditor Switching

	(1)	(2)	(3)	(4)
	Audit Reporting Model		Auditor Switching Model	
	gc	ic	switch	switch
switch	5.143***	0.178		
	(20.12)	(0.56)		
lag_gc	0.622**	1.384***	0.532**	
	(2.52)	(11.00)	(2.55)	
lag_gc*switch	-1.553***	-2.252*		
	(-2.59)	(-1.90)		
lag_ic	0.126	4.255***	-0.084	
	(0.38)	(34.73)	(-0.73)	
lag_ic*switch	-0.440	- 2.720***		

	(-0.46)	(-9.70)		
post	0.245	-1.663***	0.515***	-0.217
	(0.48)	(-3.22)	(3.83)	(-0.54)
*switch*post*	-0.239	-0.417		
	(-0.49)	(-0.80)		
*lag_gc*post*	-0.973	-0.542	-0.899**	
	(-1.45)	(-0.84)	(-2.18)	
*lag_gc*switch*post*	0.829	–		
	(1.60)	–		
*lag_ic*post*	–	–	0.061	
	–	–	(0.12)	
*lag_ic*switch*post*	-0.698	–		
	(-0.61)	–		
affiliated	0.632**	-0.232	0.114**	0.108**
	(2.18)	(-1.17)	(2.23)	(2.09)
nonpub	-0.390**	-0.248**	-0.668***	-0.674***
	(-2.18)	(-2.43)	(-12.85)	(-12.96)
big4	0.561	-1.171*	0.515***	-0.217
	(0.52)	(-1.77)	(-15.63)	(-15.57)
clearing_house	0.130	-0.049	0.081	0.089
	(0.81)	(-0.65)	(0.32)	(0.36)
foreign	-0.058*	-0.012	-0.329	-0.323
	(-1.75)	(-0.69)	(-1.04)	(-1.02)
fv_di	-0.586***	-0.196**	-0.068	-0.070
	(-3.15)	(-1.97)	(-1.17)	(-1.21)
leverage	-0.167	-0.061	0.015**	0.015**
	(-0.88)	(-0.63)	(2.36)	(2.34)
non_sec_busi	–	0.206	0.015	0.016
	–	(0.54)	(0.28)	(0.30)
num_busi	0.724***	0.145	-0.001	-0.001
	(2.87)	(1.06)	(-0.08)	(-0.07)
ownership	-0.117**	-0.145***	0.023	0.024
	(-2.54)	(-4.98)	(0.58)	(0.60)
retail	0.022	0.023	-0.014	-0.010
	(1.05)	(1.59)	(-0.19)	(-0.13)
size	0.068	0.391***	0.004	0.003
	(0.32)	(3.73)	(0.26)	(0.18)
tight	0.213***	0.068***	0.021**	0.024**
	(5.53)	(3.41)	(2.15)	(2.35)
os_ic				0.264
				(0.60)
os_gc				-9.731***
				(-2.73)
osic_post				0.392
				(0.19)

osgc_post				17.032***
				(2.66)
_cons	-4.816***	-0.865	-1.647***	-1.293***
	(-3.70)	(-1.44)	(-4.96)	(-3.56)
state, year FE	Y	Y	Y	Y
PSEUDO R²	0.410	0.417	0.050	0.050
N	14121	15453	15699	15699

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the broker-dealer level.

More importantly, the coefficient on *lag_gc*post*switch* is positive and marginally significant at the 10 percent alpha level, suggesting that the opinion shopping has been reduced, at least to a certain extent, after the adoption of SEC rules and PCAOB standards. In the last two columns, the coefficient on *lag_gc*post* is significantly negative, and the coefficient on *os_gc*post* is significantly positive, suggesting that a BD's switching decision is no longer dependent on audit opinions. This also signifies a significant reduction in opinion shopping behavior. Overall, these results suggest that the adoption of recent standards has reduced the opinion shopping behavior of BDs.

Results for the IC opinion reporting are shown in Column (2) of Table 7. From these results, it is apparent that this regulatory change has significantly affected the incidence of IC audit opinion. After including the variable *post* and other control variables, the interaction terms *post*lag_ic* and *lag_ic*switch*post* are only the linear combinations of other independent variables. Therefore, it is difficult to interpret the results for the IC opinion shopping test. Nevertheless, based on the available information in these tests, it is safe to conclude that the sharp reduction in the frequency of the IC opinion after the regulatory shock has made IC audit opinion less important to its potential users. Consequently, the BD IC opinion shopping behavior is likely to be less frequent after the regulatory shock.

Chapter 6

ADDITIONAL ANALYSIS

6.1 The informativeness of BD audit opinions

A potential unintended consequence of the 2014's regulatory changes is the reduced information value of IC audit opinions. However, an alternative explanation is that BDs' internal control has been greatly improved after the regulation. One way to eliminate this alternative explanation is to investigate the informativeness of the IC opinions around the regulatory changes.

BD IC opinions may be used by regulators for the purpose of fraud prevention and detection. For the following reasons, both the GC opinion and the IC opinion are associated with subsequent FINRA disciplinary actions. First, an unfavorable audit opinion may help FINRA to identify potentially high-risk BDs, as a poor audit result may draw FINRA's attention. Moreover, not only IC opinion but also GC opinion could be indicative of conditions often leading to BD misconduct. This is because GC opinions may contain information that is correlated with the risk factor of a BD. For example, as mentioned earlier, Susan Axelrod, a former senior advisor to FINRA's CEO, stated that FINRA's High-Risk Registered Rep Program team selects and examines high-risk BDs based on available information and data [quote] "pointing us to what we want to look at … some of the FINRA firms that have gone out of the business are exactly those 'bad' firms that no one wants to do business with" (pp.2

Zulz, 2018).

Therefore, I examine the association between audit opinions and FINRA disciplinary actions. These tests are not intended to establish causation. Rather, the purpose of these tests is to examine whether audit opinions can be a leading indicator of future BD misconduct.

Specifically, I estimate the following probit model:

$$DepVar_{it+1} = \beta_0 + \beta_1 gc_{it} + \beta_2 ic_{it} + \sum Controls_{it} + \varepsilon_{it}$$

In this test, I use two dependent variables to measure FINRA disciplinary actions. The first outcome variable, *fine*, is an indicator that equals 1 if the BD is fined by FINRA within one year after the current annual reports, and 0 otherwise. Most FINRA fines result from BD misconducts and/or violations of certain SEC rules, such as the Customer Protection and Net Capital Rules. Descriptive statistics in Table 1 show that, in this sample, FINRA on average fined about 6 percent of all BDs each year. The second outcome variable, *expel*, captures more severe BD misconducts which lead to the bar from the BD industry. *Expel* equals 1 if the BD is expelled by FINRA from the industry within one year from the current annual report, and 0 otherwise. Based on the descriptive statistics in Table 2, on average 0.5% of BDs are expelled by FINRA each year.

In addition, because the above two outcome variables have a relatively low frequency, I also use a third outcome variable that has a higher rate of incidence. Specifically, I use BD's deregistering with the SEC. *Dereg* equals 1 if the BD is no longer registered with the SEC during the current period but was registered with the SEC during the prior period, and 0 otherwise. A BD may voluntarily cease to register with the SEC. However, in many cases, deregistration signals reasons such as insolvency, fraudulent activities, or regulatory

enforcement. Prior research finds that the reasons for SEC deregistration of public firms include, but are not limited to, financial distress, poor future prospects, high compliance costs, high outside scrutiny and the protection of private control (Leuz, et al., 2008). The same research also finds that the last two reasons are particularly important when governance and investor protection are weak. If unfavorable audit opinions are informative to these potential conditions, we would likely observe an association between unfavorable opinions and subsequent SEC deregistration.

Table 8: The Antecedents of SEC-Deregistration and FINRA Regulatory Actions

Panel A: Full Sample Regression Results

	(1)	(2)	(3)
	dereg	*fine*	*expel*
switch	0.095***	-0.021	0.184***
	(4.23)	(-0.77)	(3.24)
gc	0.757***	0.343***	0.826***
	(14.53)	(5.00)	(10.06)
ic	0.011	0.132***	0.249***
	(0.31)	(2.98)	(3.45)
affiliated	-0.551***	-0.123***	-0.839***
	(-26.98)	(-4.25)	(-8.84)
nonpub	-0.075***	0.015	0.001
	(-3.73)	(0.53)	(0.03)
big4	0.237***	-0.063	-0.352*
	(7.87)	(-1.62)	(-1.85)
clearing_house	-0.180*	0.307***	0.339
	(-1.92)	(4.07)	(1.45)
foreign	0.044	-0.501***	0.407
	(0.55)	(-4.08)	(0.80)
fv_di	-0.037*	0.108***	0.016
	(-1.79)	(4.54)	(0.28)
leverage	0.002	-0.005*	0.006
	(0.78)	(-1.90)	(0.87)
non_sec_busi	0.081***	0.038	0.138***
	(4.55)	(1.36)	(2.78)
num_busi	-0.031***	0.050***	0.020***

	(-9.77)	(12.27)	(2.59)
ownership	0.006	0.036*	0.032
	(0.48)	(1.86)	(0.86)
retail	0.119***	0.095**	0.314***
	(4.68)	(2.41)	(4.44)
size	0.001	0.191***	-0.029*
	(0.22)	(26.43)	(-1.71)
tight	0.031***	0.051***	0.051***
	(8.98)	(10.88)	(4.55)
_cons	-1.510***	-4.470***	-3.523***
	(-15.68)	(-31.72)	(-7.95)
State, year Fe	Y	Y	Y
pseudo R^2	0.084	0.214	0.176
N	56643	56964	54237

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the BD level.

Panel B: Matched Sample Regression Results

	(1)	(2)	(3)
	dereg	*fine*	*expel*
switch	0.098***	-0.030	0.168
	(2.66)	(-0.65)	(1.08)
gc	0.759***	0.554***	1.340***
	(8.98)	(3.86)	(6.00)
ic	-0.042	0.197**	0.554**
	(-0.71)	(2.55)	(2.35)
affiliated	-0.014	0.055	0.294
	(-0.40)	(1.16)	(0.89)
nonpub	0.025	0.085*	-0.074
	(0.74)	(1.83)	(-0.51)
big4	0.088*	0.103*	0.005
	(1.77)	(1.75)	(0.01)
clearing_house	0.070	0.038	0.795
	(0.41)	(0.45)	(1.34)
foreign	0.029	-0.266	0.000
	(0.11)	(-0.81)	(.)
fv_di	-0.006	0.021	-0.022
	(-0.18)	(0.55)	(-0.15)
leverage	0.000	-0.002	-0.022
	(0.03)	(-0.57)	(-1.26)
non_sec_busi	0.021	0.019	0.314**

		(0.70)	(0.43)	(2.41)
num_busi	-0.001	0.006	-0.001
	(-0.25)	(0.94)	(-0.07)
ownership	-0.014	0.023	-0.023
	(-0.63)	(0.77)	(-0.25)
retail	0.069*	0.082	-0.382**
	(1.65)	(1.29)	(-1.98)
size	-0.009	0.009	0.054
	(-1.05)	(0.87)	(1.27)
tight	-0.007	0.013	-0.052*
	(-1.27)	(1.63)	(-1.83)
_cons	0.013	-0.420	0.021
	(0.05)	(-1.28)	(0.02)
State, year Fe	Y	Y	Y
pseudo R^2	0.014	0.019	0.127
N	8837	7370	502

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the BD level.

Panel C: Regression results using pre-2014 and post-2014 observations

	(1)	(2)	(3)	(4)	(5)	(6)
		2002-2013			2014-2016	
	dereg	fine	expel	dereg	fine	expel
switch	0.110***	-0.040	0.170***	0.036	0.057	0.279*
	(4.39)	(-1.29)	(2.76)	(0.70)	(0.82)	(1.81)
gc	0.787***	0.356***	0.845***	0.609***	0.316*	0.790***
	(13.40)	(4.74)	(9.51)	(4.96)	(1.84)	(3.47)
ic	0.005	0.137***	0.264***	0.191	-0.531	0.489
	(0.14)	(3.10)	(3.60)	(0.74)	(-1.40)	(0.99)
affiliated	-0.586***	-0.144***	-0.790***	-0.432***	0.027	-1.318***
	(-25.00)	(-4.84)	(-7.84)	(-9.92)	(0.41)	(-5.93)
nonpub	-0.068***	0.002	-0.002	-0.103**	0.113	0.076
	(-3.05)	(0.07)	(-0.04)	(-2.23)	(1.55)	(0.45)
big4	0.261***	-0.041	-0.525**	0.125*	-0.259***	0.557*
	(7.89)	(-1.01)	(-2.27)	(1.76)	(-2.82)	(1.85)
clearing_house	-0.187**	0.296***	0.347	-0.131	0.776	–
	(-1.96)	(3.94)	(1.49)	(-0.21)	(1.39)	–
foreign	-0.350	-0.568***	0.442	0.237	0.277	–
	(-0.97)	(-4.34)	(0.86)	(0.66)	(0.60)	–
fv_di	-0.052**	0.109***	0.006	0.031	0.104*	0.017
	(-2.26)	(4.41)	(0.10)	(0.63)	(1.66)	(0.11)

leverage	0.002	-0.006**	0.009	0.005	-0.004	-0.028
	(0.57)	(-1.96)	(1.24)	(0.79)	(-0.63)	(-1.38)
non_sec_busi	0.096***	0.021	0.136**	0.010	0.156**	0.198
	(4.93)	(0.73)	(2.53)	(0.24)	(2.54)	(1.39)
num_busi	-0.037***	0.048***	0.016*	-0.005	0.067***	0.046**
	(-10.31)	(11.75)	(1.89)	(-0.62)	(7.46)	(2.20)
ownership	0.012	0.040**	0.057	-0.026	0.005	-0.120
	(0.85)	(2.04)	(1.33)	(-0.77)	(0.10)	(-1.18)
retail	0.118***	0.125***	0.323***	0.122*	-0.132	0.274
	(4.25)	(3.09)	(4.26)	(1.92)	(-1.50)	(1.27)
size	0.007	0.191***	-0.029	-0.034***	0.203***	-0.031
	(1.30)	(25.33)	(-1.57)	(-2.70)	(11.93)	(-0.71)
tight	0.032***	0.049***	0.045***	0.023***	0.062***	0.119***
	(8.50)	(10.18)	(3.80)	(2.83)	(5.51)	(3.12)
_cons	-1.241***	-4.404***	-3.496***	-1.100***	-5.688***	-2.135**
	(-3.42)	(-29.95)	(-7.61)	(-2.86)	(-11.07)	(-2.18)
State, year FE	Y	Y	Y	Y	Y	Y
pseudo R^2	0.063	0.212	0.169	0.119	0.246	0.273
N	49592	49482	45874	6983	7324	5530

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the BD level.

Results in Table 8 Panel A show that the coefficient on the variable *gc* is significantly positive using each of the three outcomes as the dependent variable. Results also show that the coefficient on the variable *ic* is significantly positive when using *fine* or *expel* as the dependent variable. When using *dereg* as the dependent variable, the coefficient on the variable *ic* is positive but insignificant. One potential explanation for this insignificance is that the information in the IC opinion is not directly related to the reasons for SEC deregistration. Rather, it suggests the existence of conditions that could lead to the SEC deregistration. In this case, it may take more time for a BD that has material weaknesses in internal control to eventually deregister with the SEC. Overall, these results suggest that both GC opinion and IC opinion are positively associated with future SEC-registration and FINRA disciplinary actions, implying that both types of audit opinions can be informative.

One potential weakness of this analysis is that the firms that received FINRA disciplinary actions could be systematically different from those who did not receive disciplinary actions. This would be particularly problematic if this difference was able to be correlated with audit opinions. This potential spurious correlation would produce biased estimates. To address this concern, I follow Lennox, et al. (2013) and use a propensity score matched sample by matching each firm-year observation receiving a FINRA disciplinary action with a firm-year observation that does not receive FINRA disciplinary action. The purpose of this matching technique is to ensure that the covariates with non-audit characteristics are similar between these two types of observations (Lennox, et al., 2013).

To conduct the match, I first estimate a probit regression of FINRA disciplinary actions using all non-audit variables in the full sample test above as the independent variables and then use generate the propensity score for each observation in the sample. I next rerun the previous test using the matched sample. The results, presented in Panel B, are qualitatively similar to the results using the full sample.

I next evaluate the effect of the 2014's regulatory changes. To do so, I separate the full sample into the pre-change period (2002-2013) and post-change period (2014-2016). In Panel C, the coefficient on *gc* is significantly positive in each of the six columns. These results suggest that the GC opinion was informative before, and remains informative after the regulatory change. However, the coefficient on *ic* is significantly positive in Column (2) and (3) during the 2002-2013 period, but not significant in the last three columns during the 2014-2016 period. These results suggest that IC opinions are no longer informative about future FINRA disciplinary actions. I further test whether the coefficients of the pre-regulation test are significantly different from the coefficients of the post-regulation tests. Results show that,

while the coefficients on GC are not significantly different at 5% level between Column 1 and 4, or between Column 2 and 5, or between Column 3 and 6. The coefficients on IC between Column 2 and 5 is significantly different (χ^2=5.05; p value=0.0246). This result suggests that the informativeness of IC opinion in predicting subsequent FINRA fines has significantly changed after the new SEC rules and PCAOB standards. The coefficients on IC between Column 1 and 4 and the coefficients on IC between Column 3 and 6 are not statistically significant at any meaningful level.

6.2 The cross-sections of BD opinion shopping

This section examines whether BD opinion shopping is concentrated in a subgroup of BDs or BD auditors. First, I examine whether Big 4 auditors' clients successfully engage in opinion shopping. In the BD industry, engaging a small auditor is seen by many as a "red flag." For example, besides Madoff's Ponzi scheme, regulators questioned the role of the tiny auditor in PFGBest's misappropriation of approximately $200 million customer funds (Lynch and Carey, 2012). In contrast to small auditors, Big 4 auditors have higher audit quality (DeAngelo, 1981). Nevertheless, Newton et al. (2015) find that, in additional to switching to small auditors, public firms successfully engage in opinion shopping by switching to Big 4 auditors. DeFond and Lennox (2017) also find that PCAOB inspections for public firms have identified more frequent internal control deficiencies than going concern deficiencies in Big 4 clienteles.

I bifurcate the full sample into two groups, depending on whether the BD report is examined by a Big 4 auditor. Panel A of Table 9 presents the testing results using the sample that only includes reports that are audited by a Big 4 auditor. The coefficient on the interaction between the lagged GC(IC) opinion and switching in Column 1(Column 2) is negatively significant at the 5% level. In the switching model (Column 3), the coefficient on the lagged

GC opinion is marginally significant. Taken together, these results suggest that BDs successfully engage in opinion shopping by switching to a Big 4 auditor.

Similarly, results shown in Panel B suggest that BDs also successfully engage in opinion shopping by switching to a non-Big 4 auditor. I next exclude BD reports that audited by Big 4 auditors.

I next examine whether the opinion shopping behavior is only driven by small BDs by dividing the sample into two roughly equal-sized groups by the size of a BD. Results of the test using the larger (smaller) BD group is shown in Panel C (Panel D). Results suggest that both larger BDs and smaller BDs successfully engage in opinion shopping. Overall, these results suggest that the successful BD opinion shopping behavior is not driven by a subgroup of auditors or clients.

Table 9: Audit Reporting Model and Auditor Switching Model – Subsample Tests

Panel A: Big-4 Auditors Sample

	Audit Reporting Model		Auditor Switching Model
	(1)	(2)	(3)
	gc	*ic*	*switch*
lag_ic	-0.404	2.868***	-0.041
	(-0.27)	(10.99)	(-0.14)
lag_gc	6.303***	0.045	0.714*
	(10.17)	(0.07)	(1.65)
switch	-1.374	1.040***	
	(-1.34)	(4.99)	
lag_ic_switch	–	-2.620**	
	–	(-2.52)	
lag_gc_switch	1.033	1.247	
	(0.77)	(0.79)	
Control Variables	Y	Y	Y
state, year FE	Y	Y	Y

PSEUDO R²	0.388	0.180	0.044
N	7086	8687	9102

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the broker-dealer level.

Panel B: Non-Big-4 Auditors Sample

	Audit Reporting Model		Auditor Switching Model
	(1)	(2)	(3)
	gc	*ic*	*switch*
lag_ic	4.580***	0.332*	0.166***
	(60.11)	(1.86)	(2.98)
lag_gc	0.104	5.076***	0.576***
	(0.43)	(34.93)	(5.71)
switch	0.409***	0.971***	
	(3.08)	(14.35)	
lag_ic_switch	-0.227	-2.351***	
	(-0.54)	(-17.63)	
lag_gc_switch	-1.009***	-0.185	
	(-3.62)	(-0.47)	
Control Variables	Y	Y	Y
state, year FE	Y	Y	Y
PSEUDO R²	0.368	0.415	0.020
N	38904	40217	40282

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the broker-dealer level.

Panel C: Large Broker-Dealers Sample

	Audit Reporting Model		Auditor Switching Model
	(1)	(2)	(3)
	gc	*ic*	*switch*
lag_ic	0.273**	2.125***	0.106**
	(2.27)	(33.72)	(2.15)
lag_gc	2.565***	0.060	0.345***
	(20.41)	(0.29)	(3.72)
switch	0.062	0.361***	
	(0.76)	(7.77)	
lag_ic_switch	0.041	-1.000***	

	(0.14)	(-7.57)	
lag_gc_switch	-0.355	0.384	
	(-1.41)	(1.16)	
Control Variables	Y	Y	Y
state, year FE	Y	Y	Y
PSEUDO R²	0.352	0.322	0.028
N	26246	28284	28412

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the broker-dealer level.

Panel D: Small Broker-Dealers Sample

	Audit Reporting Model		Auditor Switching Model
	(1) *gc*	(2) *ic*	(3) *switch*
lag_ic	-0.053	2.557***	0.071**
	(-0.64)	(53.93)	(2.04)
lag_gc	2.769***	0.038	0.260***
	(34.26)	(0.34)	(3.98)
switch	0.105*	0.477***	
	(1.80)	(12.51)	
lag_ic_switch	0.019	-1.386***	
	(0.10)	(-16.18)	
lag_gc_switch	-0.679***	-0.352	
	(-4.64)	(-1.54)	
Control Variables	Y	Y	Y
state, year FE	Y	Y	Y
PSEUDO R²			
N			

t statistics in parentheses. * p<0.10, ** p<0.05, *** p<0.01. Stand errors are cluster-robust at the broker-dealer level.

Chapter 7

CONCLUSION

This study highlights the important role played by regulation in protecting the integrity of audit reporting process. By providing evidence on the existence of opinion shopping and the perhaps unintentional consequences of recent regulatory changes, this study may be of interest to regulators and other stakeholders.

Specifically, I conduct a quasi-natural experiment to examine opinion shopping in the BD market and find important evidence that BDs successfully engage in both GC opinion shopping and IC opinion shopping. I also examine the effects of three recent regulatory changes related to BD reporting and auditing on opinion shopping. Results suggest that (1) a regulatory shock that drives auditors out of the market motivated opinion shopping, (2) when there existed differences in the regulatory scrutiny among auditors, BDs switched to a less regulated auditor for a more favorable treatment, and (3) BD opinion shopping behavior is not significantly reduced after the implementation of the 2014's SEC rules and PCAOB's standard setting. Moreover, IC opinion for BDs was, but is no longer, informative in predicting future FINRA fines and expulsions.

Studying broker-dealer opinion shopping sheds light on factors affecting the demand and supply of audit quality. For example, in most public and private markets, outside shareholders act as principals and may impose litigation cost and reputation cost to the firm.

Therefore, they are normally one of the major users of financial information, thereby defining the demand for auditor independence. However, when the agency conflict between outside shareholders and insiders is low, can other types of agency conflicts provide enough market-based incentives for auditor independence? The findings in this study suggest that the market forces may not be sufficient and that regulations can play an important role in controlling the agency conflicts between broker-dealers and various stakeholders.

This study is subject to the following limitations. The regulation tests may produce bias estimates due to endogeneity and other issues. First, the selection into treatment groups, namely the nonpublic auditors and the non-carrying broker-dealers, may be nonrandom but rather self-selection made by careful decision. Second, there may exist anticipations and non-compliance with the regulatory changes, the effects of which may result in biased estimates of the regulatory effects. Third, as regulations are oftentimes the outcomes of corporate misconducts, the regulations examined in this study may not be exogenous to the behavior of broker-dealers or their auditors.

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Appendix A: Types of Broker-Dealer Businesses

	Business Type
1	Exchange member engaged in exchange commission business other than floor activities
2	Exchange member engaged in floor activities
3	Broker or dealer making inter-dealer markets in corporate securities over-the-counter
4	Broker or dealer retailing corporate equity securities over-the-counter
5	Broker or dealer selling corporate debt securities
6	Underwriter or selling group participant (corporate securities other than mutual funds)
7	Mutual fund underwriter or sponsor
8	Mutual fund retailer
9	U.S. government securities dealer
10	U.S. government securities broker
11	Municipal securities dealer
12	Municipal securities broker
13	Broker or dealer selling variable life insurance or annuities
14	Solicitor of time deposits in a financial institution
15	Real estate syndicator
16	Broker or dealer selling oil and gas interests
17	Put and call broker or dealer or option writer
18	Broker or dealer selling securities of only one issuer or associate issuers
19	Broker or dealer selling securities of non-profit organizations (e.g., churches, hospitals)
20	Investment advisory services
21	Broker or dealer selling tax shelters or limited partnerships in primary distributions
22	Broker or dealer selling tax shelters or limited partnerships in the secondary market
23	Non-exchange member arranging for transactions in listed securities by exchange member
24	Trading securities for own account
25	Private placements of securities
26	Broker or dealer selling interests in mortgages or other receivables
27	Broker or dealer involved in a networking kiosk or similar arrangement with a bank, savings bank or association, or credit union
28	Broker or dealer involved in a networking kiosk or similar arrangement with an Insurance company or agency
29	Other non-security business

Appendix B: Variable Definitions

Name	Definition
affiliated	1 if the client is controlled by other financial institution, and 0 otherwise.
nonpub	1 if the auditor does not conduct any audits for public issuers and 0 otherwise.
big4	1 if the auditor is a Big4 auditor, and 0 otherwise.
clearing_house	1 if the client involves in the activity as a clearing house or claim to be self-clearing, and 0 otherwise.
dereg	1 if the client deregisters from the SEC in the next fiscal year, and 0 otherwise.
expel	1 if the client is expelled by FINRA in the next fiscal year and 0 otherwise.
fine	1 if the client is fined by FINRA in the next fiscal year, and 0 otherwise.
foreign	1 if the client registers in a foreign address, and 0 otherwise.
fv_di	1 if the annual report includes fair value estimates, and 0 otherwise.
gc	1 if the client is issued a going concern opinion and 0 otherwise.
ic	1 if the auditor notes a material weakness or any other deficiency in the broker-dealer's internal controls, and 0 otherwise.
leverage	The ratio of total liability to total assets.
non_sec_busi	1 if the client involves in non-security businesses, and 0 otherwise.
num_busi	The total number of security businesses the broker-dealer involves in.
os_ic	IC opinion shopping variable estimated using the method in Lennox (2000).
os_gc	GC opinion shopping variable estimated using the method in Lennox (2000).
ownership	Ownership concentration that takes the value of 4, 3, 2, or 1 if the percentage of ownership of the largest owner is 75% or more, more than 50% but less than 75%, more than 25% but less than 50%, or less than 25%, respectively.
post	1 if the fiscal year end is later than June 1, 2014, when the annual reporting is subject to SEC's and PCAOB's new reporting and auditing standards, and 0 otherwise.
regdate	The rank of the audit firm's PCAOB registration date. The earlier it registered, the larger the ranking number.
size	The natural log of the sum of 1 and total assets.
switch	1 if the client switches auditor, and 0 otherwise.
tight	The decile ranking of the tightness to the minimum net capital requirement, measured as the difference between current net capital and the minimum net capital requirement, scaled by the minimum net capital requirement.