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The Association between PCAOB Inspection Reports and Seasoned Equity Offering Discounting

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SUMMARY: We examine the association between Public Company Accounting Oversight Board (PCAOB) inspection reports and a firm's cost of equity capital, measured using seasoned equity offering (SEO) discounting. SEO discounting occurs when the offer price is lower than the prior day's market price of the firm's shares and represents "money left on the table" for issuing firms. We document an economically significant, positive association between SEO discounting and the use of an auditor found to be deficient by the PCAOB for clients of triennially inspected auditors. Cross-sectional evidence suggests that this relation is stronger for clients with lower analyst following and disclosed material weaknesses in financial reporting controls, and weaker if the auditor issues a going concern modification. Our evidence is consistent with PCAOB inspections providing meaningful information about audit quality to market participants, particularly for clients of smaller, triennially inspected auditors.

Data Availability: All data are from publicly available sources.

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Keywords: PCAOB; audit quality; cost of capital.

I. INTRODUCTION

We examine the relation between findings in Public Company Accounting Oversight Board (PCAOB) inspection reports and a firm's cost of equity, measured through the cost of raising capital. A stated PCAOB goal is to "ensure the integrity of the audit function" to "enable public companies in our markets to benefit from a lower cost of capital" (Public Company Accounting Oversight Board (PCAOB) 2016). The PCAOB's main responsibility is inspecting the audits of public clients. It does so through annual or triennial inspections of selected workpapers of

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all PCAOB-registered auditors conducting audits of U.S. registrants.[1] Results of PCAOB inspections—notably audit deficiencies identified by inspectors—are summarized in inspection reports available on the PCAOB website. The accessibility, variation, and source credibility of the results suggest that the inspection reports are possible signals of inherently unobservable audit quality by the market. However, current research examining whether PCAOB inspection reports improve capital markets focuses either on benefits to foreign issuers employing international auditors (Lamoreaux, Mauler, and Newton 2020; Shroff 2020) or on market outcomes more directly related to the auditor (e.g., Abbott, Gunny, and Zhang 2013; Acito, Hogan, and Mergenthaler 2018; Aobdia 2018; Christensen, Lundstrom, and Newton 2021). We extend this research with evidence on whether, when, and to what extent the inspection report influences the cost of equity capital for U.S. clients of inspected auditors.

We measure firms' costs of equity capital using the pricing of seasoned equity offerings (SEOs). An SEO is an equity offering by a company that is already traded publicly. SEO discounting reflects the extent to which the SEO's offer price is lower than the prior day's market price of the firm's shares. In industry parlance, discounting represents "money left on the table." Consequently, SEO discounting provides a directly quantifiable, *ex post* measure of the cost of *raising* equity capital (Bowen, Chen, and Cheng 2008). Thus, our study fits into the broader PCAOB-capital markets literature by examining the linkage between PCAOB inspection report information and a specific capital market outcome. Importantly, the capital market outcome we study—SEO discounting—is a nontrivial cost to issuers that is increasing in both frequency and magnitude in the U.S. (K. Chan and Y.-C. Chan 2014).

Focusing on SEO discounting as a measure of the cost of capital also presents two research design advantages in investigating the potential relation between PCAOB inspection report information and SEO discounting. First, inspection reports at the auditor level are determined by a process unrelated to a specific firm's SEO. Second, SEO discounting is measured in a short two-day window, which allows us to obtain a relatively clean point estimate of the direct costs borne by issuers when there is unfavorable, inspection-related information corresponding to their auditors.

We premise our hypothesis on three theoretical linkages suggested by prior literature. First, SEOs are subject to information asymmetry between issuers (managers), who selectively disclose financial information used to value the SEO, and market participants (investors, underwriters), who determine the ultimate price of the offering (Jensen and Meckling 1976; Bowen et al. 2008). SEO participants recognize that (1) they cannot observe the financial reporting process and, (2) issuers have an incentive to sell shares when insiders believe them to be overvalued. Consequently, buyers are reluctant to purchase the shares due to apprehension about *ex post* information revelations that may subsequently indicate that the shares are overvalued. To compensate for this hesitancy and to incentivize investors to participate in the offering, underwriters "discount" offer prices (Kim and Park 2006; Bowen et al. 2008). This price concession is a form of agency costs commonly referred to as adverse selection costs (Jensen and Meckling 1976). Second, information intermediaries, such as auditors, can reduce adverse selection costs by increasing the perceived quality of firm-generated financial disclosures (Lee and Masulis 2009; Clinch, Stokes, and Zhu 2012; DeFond and Zhang 2014). Third, a higher quality information intermediary enhances the perceived reliability of financial disclosures, which incrementally reduces adverse selection costs (Teoh and Wong 1993). While the first two conditions are well established, prior research has generally used auditor brand name to test the third condition in a variety of settings (Pittman and Fortin 2004; DeFond and Zhang 2014).[2] We investigate whether unfavorable PCAOB inspection reports act as a signal of the quality of a firm's auditor. If so, this could impact the perceived reliability of the financial disclosures reported by the auditor's clients, thereby affecting the client's cost of raising equity capital.

To address our research question, we collect SEO data from the Securities Data Company's (SDC) Global New Issues database for a sample of 864 (2,776) SEOs during the period 2006–2019 for the clients of triennially (annually) inspected auditors. We stratify our sample into two categories: auditors inspected on an annual or triennial basis. Larger, annually inspected auditors possess established brand names and have a much lower percentage of their audit engagements inspected than triennially inspected auditors. Both factors could potentially reduce the audit quality signal provided by inspection outcomes for these large audit firms.

Prior research indicates the market uses publicly available, straightforward signals such as auditor brand name to infer audit quality at the audit firm level (DeFond and Zhang 2014). Similarly, we propose two simple audit quality signals derived from PCAOB inspection reports. First, we posit that investors utilize a base heuristic to proxy for audit

[1] The PCAOB performs its inspections on an annual (a triennial) basis for auditors that have at least (less than) 100 publicly held clients. In our sample, annually inspected auditors include "Big 4" auditors (Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers) and the "National 4" auditors (BDO, Crowe, Grant Thornton, and RSM).

[2] Prior research has also examined engagement-, partner-, and city-level audit quality proxies (DeFond and Zhang 2014). Audit firm industry specialization is generally the sole firm-level audit quality proxy (Hogan and Jeter 1999).

quality—the presence or absence of a clean inspection report.[3] Second, we measure the proportion of inspected engagements deemed deficient (i.e., the deficiency rate). This variable is also parsimonious, accessible, easily computed and is frequently cited in the financial media.[4]

Following prior research, we measure SEO discounting as the difference between the closing price on the day prior to the SEO and the opening price on the day of the SEO. For clients of triennially inspected auditors, we document a statistically significant, positive relation between the use of a deficient auditor and SEO discounting. Compared to clients of clean auditors, the SEO discount is 1.7 percent higher for clients of deficient triennial auditors, or nearly 17 percent of the mean SEO discount. We document a similar relation using the percentage of inspected engagements deemed deficient to measure inspection outcomes. However, we fail to find evidence that the percentage of inspected engagements deemed deficient relates to discounting for clients of annually inspected auditors.

We next examine whether the relation between inspection reports and SEO discounting varies predictably with certain cross-sectional factors. Given our previous results, we focus this supplemental analysis on the clients of triennially inspected auditors. We identify two broad dimensions: inspection report characteristics and client characteristics. With respect to inspection report characteristics, we predict that the SEO discounting-deficient auditor effect is magnified for more recently issued inspection reports. We test this prediction by splitting our variables of interest into three separate measures, depending on the recency of the report. Consistent with this prediction, our evidence suggests that deficient inspection results issued within the two years prior to the SEO positively relate to discounting, whereas older inspection results do not. This is intuitively appealing as more recent PCAOB inspection reports likely provide information more relevant to recent financial statements and reduce the window in which the auditor can remediate inspection deficiencies. However, we caveat that this evidence is statistically weak.

In terms of client characteristics, we test whether three client characteristics produce cross-sectional differences between SEO discounting and employing a deficient auditor. First, we examine analyst following since analysts can improve firms' information environments, reducing information risk and attenuating the role a higher quality auditor can have on SEO discounting (Piotroski and Roulstone 2004). Consistent with this notion, we find the relation between SEO discounting and deficient inspection reports is concentrated in the subsample with low analyst following. Second, we evaluate whether the presence of an internal control weakness moderates the association between inspection results and SEO discounting. Based on the audit risk model, we expect that a client with poorer internal controls has a higher likelihood of a pre-audit material misstatement and that a lower quality external auditor is less likely to detect the misstatement. Consistent with this prediction, we find the presence of a disclosed material weakness in internal controls over financial report magnifies the relation between a deficient PCAOB inspection report and SEO discounting. Third, we examine whether the presence of a going concern modification alters the relation between inspection findings and SEO discounting. Research suggests that (1) there is a disclaimer effect with regard to auditor effort in the presence of going concern report modification as auditors "walk away" from the engagement (Aobdia 2019; Bowler 2015), (2) a going concern report modification directs investors' concerns towards the insurance (rather than assurance) component of audit quality (Willenborg and McKeown 2000), and (3) the lack of going concern report modification likely intensifies investors' information search efforts about audit quality since there is the potential for a deleterious Type II report error.[5] Consistent with this, we find the presence of a going concern audit opinion attenuates the relation between a deficient PCAOB inspection report and SEO discounting.

Our paper contributes to the literature in two ways. First, we provide important, U.S.-based evidence linking information contained *within* PCAOB inspection reports to U.S. registrants' cost of raising equity capital. We note that the capital market effects of PCAOB inspections may take several forms such as indirect measures of cost of capital for domestic registrants (Gipper, Leuz, and Maffett 2020), lower *ex ante*, implied cost of capital for SEC registrants domiciled in foreign markets that allow PCAOB inspection (Lamoreaux et al. 2020), lower cost of capital for registrants listed on foreign exchanges allowing PCAOB inspection access (Shroff 2020), as well as higher rates of litigation against auditors (Christensen et al. 2021) and market share gains/losses for auditors (Abbott et al. 2013; Acito et al. 2018). Some of these studies speak to the PCAOB *regime* but not necessarily any signal of audit quality from inspection report information.[6] We believe our focus on domestic registrants and inspection report information is particularly relevant for two

[3] A clean inspection report has no disclosed audit deficiencies. In our sample, no annually inspected auditor has received a "clean" inspection report, so this measure only applies to triennially inspected auditors.

[4] This measure is consistent with that used by the financial press to "grade" annually inspected auditors (Heller 2016). The deficiency rate is presented early in the inspection report, making it particularly salient, as inspection reports can be voluminous (KPMG's 2016 inspection report is 75 pages long).

[5] A Type II report error occurs when the auditor fails to modify the audit opinion of a subsequently bankrupt client.

[6] Lamoreaux et al. (2020) consider whether their cost of capital results vary with inspection findings but find little evidence this is the case.

reasons. First, since the vast majority of PCAOB inspections are of domestic auditors, it is important to understand the capital market effects of PCAOB inspection report information on this group of auditors and their associated clients.[7] Second, and perhaps most important, the inspection process is the most controversial aspect of the PCAOB due to concerns about the competence, transparency, and motivation of PCAOB inspectors (Glover, Prawitt, and Taylor 2009; Abbott, Buslepp, and Notbohm 2018; Ege, Knechel, Lamoreaux, and Maksymov 2020).[8]

Second, we also add to the audit quality literature by providing evidence consistent with the market using inspection reports to differentiate audit quality amongst triennially inspected auditors. Additionally, unlike auditor choice studies, our setting allows us to quantify the benefits that accrue to issuers by employing a "clean," triennially inspected auditor. The relevance of this finding is underscored when noting the clientele of triennially inspected auditors (1) has a market capitalization in excess of $150 billion (Abbott and Buslepp 2021) and (2) exhibits higher information risk (Hogan and Martin 2009). Additionally, triennially inspected auditors (1) have few information sources related to their quality and reputation (Goelzer 2010), (2) continue to receive frequently adverse inspection reports (Tyson 2021), and (3) are increasingly the auditor associated with SEOs of small cap registrants.

The remainder of this paper is organized as follows. Section II reviews prior literature related to SEOs and the PCAOB inspection process and generates our hypotheses. Section III details sample selection and research design, while Section IV provides results. Section V offers additional analyses, and Section VI concludes.

II. PRIOR RESEARCH AND HYPOTHESES

Seasoned Equity Offerings and Audit Quality

An SEO refers to any public equity offering made after a firm's initial public offering (IPO). However, unlike an IPO, an SEO involves a company that already has a market for its equity, yielding an established market price and benchmark for valuation of the newly issued shares. Both IPOs and SEOs are subject to information asymmetry (Jensen and Meckling 1976). This asymmetry arises as managers have more and/or better information than the market, particularly with respect to the assumptions about underlying accounting estimates in the financial statements. These same financial statements comprise a substantial portion of the information set used by the market to value the securities being issued.

Myers and Majluf (1984) present an SEO model whereby managers prefer to issue equity when the market has a higher valuation of the equity than their internal, private valuations. In this same model, the market rationally infers this managerial preference and "price protects" itself in the form of a reduced SEO price, even in the presence of an observable market price. The reduced SEO proceeds represent a classic form of adverse selection costs imposed on the seller because investors recognize the inherent information asymmetry in the securities offering setting.

However, issuing firms can alleviate adverse selection costs by committing themselves to higher perceived levels of financial statement quality through information intermediaries. Higher perceived levels of information intermediary quality can then reduce adverse selection costs in an SEO or IPO setting (Teoh and Wong 1993; Pittman and Fortin 2004).

DeFond and Zhang (2014) define audit quality as "greater assurance that the financial statements faithfully represent relevant information about the firm's underlying economics conditioned on the firm's innate characteristics and financial reporting practices." This definition recognizes the close association between financial statement quality and audit quality. Thus, audit quality (1) increases the reliability of the current set of financial statements for valuing securities under issuance, reducing uncertainty about the current price (Diamond and Verrecchia 1991) and (2) decreases the likelihood that those financial statements will, *ex post*, contain a material error suggestive of overvalued securities. Both avenues converge to reduce investor hesitancy to purchase securities and decrease adverse selection costs associated with SEOs. As audit quality is inherently unobservable, market participants utilize broadly observable signals, like auditor brand name or industry specialization, to infer quality. Several empirical studies provide evidence consistent with some of these audit signals reducing adverse selection costs in an SEO setting (Kim and Park 2006; Ucar 2015; Kwon, Park, and Yu 2018). To date, however, research fails to consider whether PCAOB inspection reports can serve as a useful audit quality signal in the context of SEO discounting, particularly for U.S. firms.

[7] Shroff (2020) finds non-U.S. listed clients of international auditors with clean inspection reports raise more capital than clients of auditors deemed deficient. We discuss Shroff (2020) in more detail in the next section.

[8] The largest portion of PCAOB's budget (45 percent) is allocated to the inspections division (Public Company Accounting Oversight Board (PCAOB) 2021).

PCAOB Inspection Research

Relative to the peer-review regime that preceded the establishment of the PCAOB, Abbott et al. (2013) argue that PCAOB inspection reports possess three traits that make them potentially useful signals of audit quality: accessibility, variation and source credibility. In terms of accessibility, the PCAOB website contains the summary reports for the entire history of a particular auditor and is readily available worldwide. With respect to variation, Gunny and Zhang (2013) document that close to 20 percent of the initial set of inspection reports for triennially inspected auditors disclosed a GAAP-deficiency, whereas these types of issues were virtually nonexistent in the peer-review regime. Finally, since the PCAOB is a government-sponsored organization, its inspectors are not subject to the *quid pro quo* aspect of prior peer review regime, giving greater credence to disclosed audit deficiencies (Gipper et al. 2020).

Prior literature examining whether PCAOB inspection reports are utilized by capital market participants as signals of auditor quality mainly focuses on auditor dismissals following the issuance of a negative inspection report. In general, auditor dismissal studies find support for the use of public inspection reports by the market as an audit quality surrogate —particularly for the triennially inspected auditor segment (Abbott et al. 2013; Swanquist 2014).[9] Similarly, Aobdia (2018) documents auditor switches are significantly more likely for inspected firms with Part I comments, particularly for annually inspected auditors.

Advancing this line of research, Lamoreaux et al. (2020) investigate whether PCAOB inspections heighten perceived audit quality, and in doing so, reduce the cost of equity. Lamoreaux et al. (2020) find that foreign SEC registrants based in countries that allow PCAOB inspections have lower implied costs of equity.[10] However, Lamoreaux et al. (2020) find little evidence of association between inspection report information and the cost of equity. Rather, their evidence is consistent with the market anticipating increased audit quality arising from the inspection process, rather than *ex post* reacting to information contained in the inspection reports.[11] Shroff (2020) investigates whether inspection report information influences the cost of capital for clients in foreign markets and their foreign-affiliated auditors. Shroff (2020) finds that clients of auditors receiving clean inspection reports raise more capital, indirectly implying lower debt and equity issuance costs in foreign markets.

With respect to Lamoreaux et al. (2020) and Shroff (2020), we identify several key differences. First, both studies' samples are comprised of registrants domiciled in countries other than the U.S., whereas we focus on U.S.-domiciled registrants. Foreign markets often lack the regulatory oversight of U.S. markets, providing more opportunity for the PCAOB's inspection process to play a significant role in affecting cost of capital. Second, over 90 percent of the observations in Lamoreaux et al. (2020) and Shroff (2020) employ foreign affiliated auditors that are members of a Big 4 audit network but are also inspected on a triennial basis. These affiliated audit firms are likely fundamentally different than the triennially inspected, domestic audit firms we study. Finally, SEO discounting is an *ex post*, direct measure of the cost of raising equity capital, whereas Lamoreaux et al. (2020) utilize an *ex ante*, implied cost of equity capital measure.

Hypotheses

Our first hypothesis focuses on triennially inspected auditors. Prior research suggests that signals of audit quality can reduce adverse selection costs (Kim and Park 2006; Ucar 2015), but this evidence is largely focused on traits associated with larger, annually inspected auditors (e.g., brand familiarity, expertise). Given the paucity of available information about smaller, triennially inspected auditors, we expect that the market relies on PCAOB inspection reports as a proxy for inherently unobservable audit quality given that three important conditions are satisfied.

First, we expect investors to perceive inspection report deficiencies as informative about firm-level audit quality. Admittedly, prior research identifies concerns about a lack of inspector expertise (Glover et al. 2009), opacity in the inspection process (Daugherty and Tervo 2010; King 2010; Houston and Stefaniak 2013), and the job-justifying incentives of inspectors (Johnson, Keune, and Winchel 2019). Nonetheless, survey respondents in Christensen, Glover, Omer, and Shelley (2016, 1651) "overwhelmingly associate fewer PCAOB deficiencies with higher overall audit firm quality." Similarly, experimental participants in Brown and Popova (2019) are more likely to reduce their investment in a

[9] Christensen et al. (2021) find that inspection reports with audit deficiencies are positively associated with the number of lawsuits subsequently filed against the inspected auditor.

[10] A foreign company will qualify as a foreign SEC registrant (i.e., foreign private issuer) if 50 percent or less of its outstanding voting securities are held by U.S. residents; *or* if more than 50 percent of its outstanding voting securities are held by U.S. residents and *none* of the following three circumstances applies: the majority of its executive officers or directors are U.S. citizens or residents; more than 50 percent of the issuer's assets are located in the United States; or the issuer's business is administered principally in the United States (Securities and Exchange Commission (SEC) 2013).

[11] The authors note, "[T]he results in Table 7 provide some evidence suggesting that our main *results are not driven by market responses to inspection report findings*. Rather, they appear to be driven by anticipated improvements in information quality resulting from PCAOB inspection" (Lamoreaux et al. 2020, 2461; emphasis added).

company if the company's auditor has negative-trending, audit quality indicators (AQI). Importantly, these same participants ranked PCAOB inspection report findings as the most important AQI in assessing audit quality.

Second, inspection results for triennial auditors must be known by investors. If not, the evidence of Christensen et al. (2016) and Brown and Popova (2019) may not extend to our empirical, archival setting. The business press often mentions the PCAOB inspection process, but this coverage generally focuses on inspection findings of prominent auditors or on the PCAOB's efforts to inspect auditors in other countries, such as China. However, popular, investment-related websites and message boards such as Seeking Alpha provide platforms in which auditor-related information can be disseminated—even when both the audit firm and its client are not particularly large.[12] These web-based platforms have become increasingly influential conduits of investment information for small investors (Chen, De, Hu, and Hwang 2014). This suggests that (1) at least some investors are aware of inspection results,[13] and (2) these results are, in some cases, disseminated to investors.

Third, the presence of inspection deficiencies is a salient enough audit quality signal to impact SEO discounting. Prior research has linked other audit quality signals such as audit firm industry specialization (Kwon et al. 2018), audit firm tenure (Fernando, Abdel-Meguid, and Elder 2010) and excessive auditor remuneration (Hope, Kang, Thomas, and Yoo 2009) to various measures of cost of equity capital. By comparison, inspection report deficiency information is easily accessible, parsimonious and entails relatively minor processing costs, increasing the likelihood of its use by SEO investors.

If these three conditions are met, then investors will likely assess greater financial statement-related information risk for clients of auditors receiving deficient inspection reports. The increase in assessed information risk creates a greater reluctance for the market to invest in an issuer's SEO, generating an increased need for a deeper SEO discount. This leads to our first hypothesis (stated in alternative form):

H1: SEO discounting is larger for the clients of deficient, triennially inspected auditors relative to clean, triennially inspected auditors.

Our second hypothesis focuses on annually inspected auditors. We note that the conditions and arguments underlying our first hypothesis largely apply to annually inspected firms as well. Nonetheless, prior research consistently demonstrates that Big 4 and "National 4" auditors exhibit higher perceived audit quality *vis-à-vis* non-Big 4 auditors (Cassell, Giroux, Myers, and Omer 2013). Inspections for annually inspected auditors involve a smaller percentage of the auditor's overall clients, diluting the usefulness of inspection results as an audit quality signal. Additionally, Ege et al. (2020) describe public attempts made by these largest auditors to de-legitimize the PCAOB and dispute negative inspection findings, which may offset the relevance of information in the inspection reports. Thus, it remains an empirical question whether PCAOB inspection reports can impact the perceived audit quality of these annually inspected auditors. This leads to our second hypothesis (stated in alternative form):

H2: SEO discounting is larger for the clients of annually inspected auditors with relatively more deficient PCAOB inspection reports.

III. SAMPLE SELECTION AND RESEARCH DESIGN

Data and Research Design

We utilize data from seven primary sources for our analyses: the PCAOB website for inspection report data; the Securities Data Company's (SDC) New Issues Database for information pertaining to SEO discounting; Audit Analytics for identification of the auditor and inspection deficiencies data; Compustat for firm-level financial statement characteristics; Center for Research in Security Prices (CRSP) for stock price information; I/B/E/S for analyst following information; and Thomson for institutional ownership information. To test H1 and H2, we bifurcate our sample into clients of triennially inspected auditors and clients of annually inspected auditors. Our triennial sample begins in 2006, when PCAOB inspection data first became available for this stratum of auditors. However, our annual sample does not begin until 2009, as PCAOB inspection reports for annually inspect audit firms did not identify the number of audits inspected (needed to compute the proportion of inspected engagements deemed deficient) before that period. Our sample period ends in 2019 for both samples.

[12] See, for example, https://seekingalpha.com/article/4433962, https://seekingalpha.com/article/4374190, or https://seekingalpha.com/article/145277

[13] Private conversations with four accredited investors suggest that individual investors are aware of the PCAOB's mission and the content of PCAOB inspection reports. These accredited investors also indicated the potential of inspection reports to influence their investing decisions.

Table 1, Panel A presents the results of our sample selection process and associated attrition. Our initial sample consists of 9,765 U.S. SEOs between 2006 and 2019 in the SDC's New Issues database. We exclude 1,765 observations lacking primary share offerings and another 63 observations where SDC identifies multiple offerings on the same day. Consistent with prior literature (Mola and Loughran 2004; Chan and Chan 2014), we delete 970 observations that are

TABLE 1

Sample Selection

Panel A: Attrition

U.S. SEOs in the Securities Data Company's New Issues Database between 2006 and 2019	9,765
Less: Lacking primary share offerings	1,765
Less: Multiple offerings on the same day	63
Less: Unit and depository share offerings	970
Less: Missing Central Index Key (CIK) number	20
Less: No audit opinion in Audit Analytics in the year preceding the SEO	119
Less: Non-U.S.-based auditors	443
Less: No PCAOB inspection report preceding the SEO	102
Less: Missing data needed for regression analysis	767
Less: Nonpositive sales	501
Less: Observations with absolute studentized residuals above 3	36
Less: Observations audited by annually inspected auditors missing data needed to calculate *Deficiency_Rate* variable	1,339
Total Observations	3,640
Distribution of (unique companies) observations by auditor type	
Observations with triennially inspected auditors	(490) 864
Observations with annually inspected auditors	(1,266) 2,776

Panel B: SEO Issuance Distribution by Calendar Year

	Triennial Sample				Annual Sample			
SEO Issuance Year	**Frequency**	**Mean SEO Discount**	**Mean Deficient**	**Mean Deficiency Rate**	**Frequency**	**Mean SEO Discount**	**Mean Deficient**	**Mean Deficiency Rate**
2006	5	0.042	1.000	0.452				
2007	14	0.093	0.714	0.298				
2008	12	0.012	0.500	0.278				
2009	88	0.102	0.341	0.105	9	0.101	1.000	0.253
2010	106	0.085	0.406	0.123	155	0.060	1.000	0.147
2011	57	0.088	0.509	0.173	258	0.054	1.000	0.141
2012	59	0.099	0.610	0.219	312	0.047	1.000	0.304
2013	81	0.083	0.605	0.229	353	0.057	1.000	0.387
2014	81	0.109	0.593	0.229	315	0.048	1.000	0.439
2015	73	0.102	0.466	0.259	277	0.051	1.000	0.433
2016	69	0.117	0.449	0.159	267	0.061	1.000	0.387
2017	86	0.072	0.442	0.198	300	0.067	1.000	0.318
2018	71	0.108	0.535	0.255	265	0.070	1.000	0.303
2019	62	0.180	0.742	0.420	265	0.087	1.000	0.302
Total	864	0.100	0.513	0.212	2,776	0.060	1.000	0.328

Table 1 presents sample attrition (Panel A) and SEO issuance distribution and descriptive statistics by calendar year (Panel B) for the sample of observations with triennially inspected auditors and annually inspected auditors.

defined as "unit" or "depository" share offerings.[14] We delete 20 observations for which we are unable to identify a Central Index Key (CIK) identifier, required to merge the SDC data with Audit Analytics data.[15] We then remove 119 observations lacking an audit opinion in the year prior to the SEO, 443 observations using non-U.S. auditors, and 102 observations without a PCAOB inspection report prior to the offering, which is needed to calculate our variable of interest. Finally, we delete 767 observations that lack information on any one of our control variables, 501 observations with nonpositive sales, and 36 observations identified as outliers based on studentized regression residuals.[16] Our final sample is comprised of 864 (2,776) observations which are audited by triennially (annually) inspected auditors.

Table 1, Panel B presents the distribution of SEO issuances by calendar year, as well as mean SEO discounts, proportion of deficient auditors, and the proportion of inspected audits that are deficient for the sample of firms audited by both triennially and annually inspected auditors. We note several interesting trends. First, there is a pronounced increase in the frequency of SEOs after 2008, likely the result of the relaxation of shelf registration rules (Securities and Exchange Commission (SEC) 2007; Gustafson and Iliev 2017). Over time, we generally observe increasing rates of SEO discounting. Mean SEO discounting increases from 4.2 (6.0) percent in 2006 (2010) to 18.0 (8.7) percent in 2019 for SEOs of clients with triennially (annually) inspected auditors. We include issuance-year fixed effects to control for any time-related factors in our regressions.

Figure 1 graphically illustrates PCAOB inspection performance by year. Panel A presents the yearly percentage of deficient inspection reports for triennially inspected auditors. With the exception of 2006 (n = 5), deficient, triennially inspected auditors are associated with 40–70 percent of SEOs issued per year. Panel B presents the average percentage of inspected audits deemed deficient on a per year basis for both the triennially and annually inspected auditor samples. Panel B suggests that annually inspected auditors usually have a higher percentage of inspected audits being deemed deficient, which is likely a consequence of the more complex audits performed by this group.

Figure 2 presents a box plot of SEO discounting by year for clients of deficient versus clean firms (triennially inspected only). In ten of 13 years, the SEO discount is higher for clients of deficient auditors, consistent with our first hypothesis.

To test our first prediction that SEO discounting will be higher for firms of triennially inspected auditors whose auditors receive an unfavorable PCAOB inspection report, we estimate the following OLS regression:

$$\begin{aligned} SEO\_Discount = {} & \alpha_0 + \beta_1 Deficient\ (Deficiency\_Rate) + \beta_2 Prior\_Deficient\ (Prior\_Deficiency\_Rate) \\ & + \beta_3 Accruals + \beta_4 Restate\_Auditor + \beta_5 Restate\_Client + \beta_6 Volatility + \beta_7 ln(Analysts) \\ & + \beta_8 InstOwn\% + \beta_9 RelSize + \beta_{10} ln(Price) + \beta_{11} CAR - + \beta_{12} CAR + + \beta_{13} Tick + \beta_{14} Cluster \\ & + \beta_{15} NASDAQ + \beta_{16} ln(Size) + \beta_{17} HighRank + \beta_{18} PublicShelf + \beta_{19} FirmCommitment \\ & + \beta_{20} BestEfforts + \beta_{21} SimOffer + \beta_{22} OTCPink + \beta_{23} SecShares\% + \beta_{24} ln(Clients) \\ & + \beta_{25} ln(Tenure) + \Sigma_\delta Year\ Fixed\ Effects + \Sigma_\gamma Industry\ Fixed\ Effects + \varepsilon \end{aligned} \quad (1)$$

SEO_Discount, is the percentage difference between the prior day closing price and the offer price. Larger values of *SEO_Discount* imply steeper discounting (and a higher cost of capital); in other words, *SEO_Discount* approximates the extent to which issuers "leave money on the table."

Audit deficiencies are disclosed when, upon inspection, the PCAOB believes that the auditor "failed to obtain sufficient competent evidential matter to support its opinion on the financial statements" (Gunny and Zhang 2013, 158). We argue that the market will utilize the most recent, publicly available report on the PCAOB website as its proxy of audit quality. Using the findings of these reports, we compute two main test variables, *Deficient* and *Deficiency_Rate*. *Deficient* is an indicator variable equal to 1 if the auditor's most recent PCAOB inspection report (prior to the SEO)

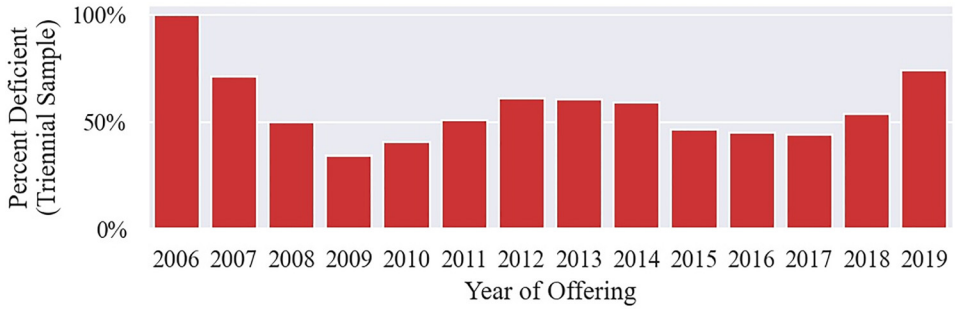
[14] Unit offerings are a combination of multiple securities, such as common stock and warrants, sold together as a single product (Lee, Lochhead, Ritter, and Zhao 1996). Calculating the SEO discount is difficult when the offering involves multiple types of securities, so we exclude unit offerings from the sample. Depository share offerings are offerings issued by a U.S. bank to promote trading in a foreign issuer (Lee et al. 1996). Since our sample consists of U.S. SEOs, they are excluded from the sample.

[15] Approximately 13 percent of the observations in the SDC sample did not have a CIK number. We used an automated script to search the SEC EDGAR database for the missing CIKs. We were able to identify the CIK identifier for all but the 20 observations mentioned above.

[16] Approximately one third of the 767 observations are excluded because we are missing the pre-offer day's stock price needed to calculate the SEO discount. The 501 observations with nonpositive sales are overwhelmingly developmental stage companies. Willenborg (1999) argues that audit quality is not important in these instances.

FIGURE 1
Annual Distribution of *Deficient* and *Deficiency_Rate*

Panel A: Percent of SEOs Audited by Deficient Auditor (Triennial Sample Only)



Panel B: Deficiency Rate of Auditors (Annual and Triennial Samples)

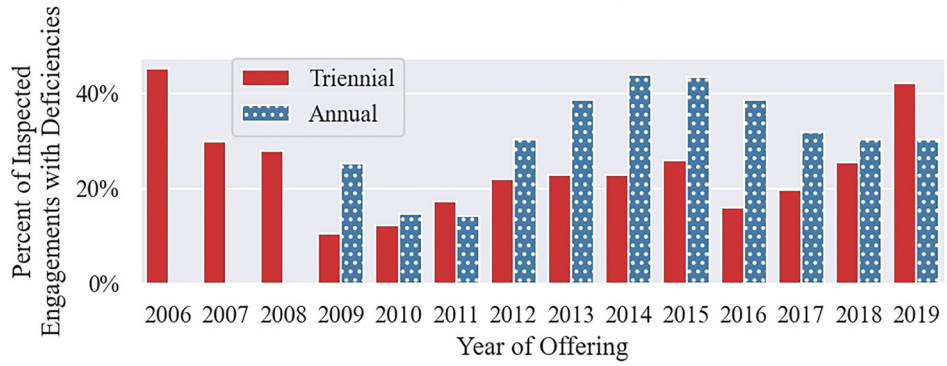


Figure 1, Panel A plots the percentage of firms in our triennial sample audited by a deficient auditor by year. Figure 1, Panel B plots the deficiency rate of the auditors auditing the firms in our sample by year. The deficiency rate for triennial auditors is shown in blue. The deficiency rate for annual auditors is shown in red.
(The full-color version is available online.)

contains one or more GAAS deficiencies and 0 otherwise.[17] *Deficiency_Rate* is the number of GAAS-deficient audits scaled by the number of inspected audits in the auditor's most recent PCAOB inspection report (preceding the SEO). For annually inspected auditors, we only use the *Deficiency_Rate* variable because no annually inspected auditor has ever received a "clean" inspection report. We consider both variables to be easily accessible, base heuristics proxying for audit quality. If these variables serve as a signal to investors of lower audit quality, we expect to find a positive coefficient on β_1.[18] Note that we also control for whether the prior PCAOB inspection report contained deficiencies.

The remaining control variables in Equation (1) are based on prior research examining SEO discounting. Perceptions about the quality of the financial reporting process contribute to information risk (Bhattacharya, Ecker, Olsson, and Schipper 2012), which likely impacts the extent to which SEOs are discounted. Therefore, we include controls for accrual quality (*Accruals*), the percentage of clients within the auditor's portfolio reporting a restatement in the year prior to the client's SEO (*Restate_Auditor*), and whether the client reported a restatement in the year prior to the

[17] Gunny and Zhang (2013) classify deficient PCAOB inspection reports into two categories: GAAS-deficient and the more severe GAAP-deficient. Unlike GAAS deficiencies, in a GAAP-deficient report the PCAOB states the audit deficiencies led to a misstatement (in the PCAOB's opinion) in one (or more) of the auditor's clients' financial statements, which may be viewed as more severe. For our triennially inspected analyses, there are two categories: the "clean" inspection subsample (n = 421) and the "deficient" inspection subsample (n = 443). By construction, the more severe GAAP-deficiencies (n = 87) are a subset of GAAS-deficiencies (n = 443). To ensure that our results are not driven by the more severe GAAP-deficiencies, we conducted two additional tests. First, we exclude the 87 observations in which the inspection report included a GAAP-deficiency. For this reduced sample, the coefficient estimates for our test variables of interest remain positively and significantly associated with SEO discounting. Second, we include in our main tests a control for the presence of GAAP-deficiencies in the inspection report. After controlling for the presence of GAAP-deficiencies, we continue to find a positive and significant coefficient on our test variables.

[18] We only make directional predictions for our variables of interest. Proper control variables are mediated by test variables, making it difficult to predict the direction of the remaining direct effect (Whited et al. 2022).

FIGURE 2
Annual Distribution of SEO Discounting for Clients of Triennially Inspected Auditors

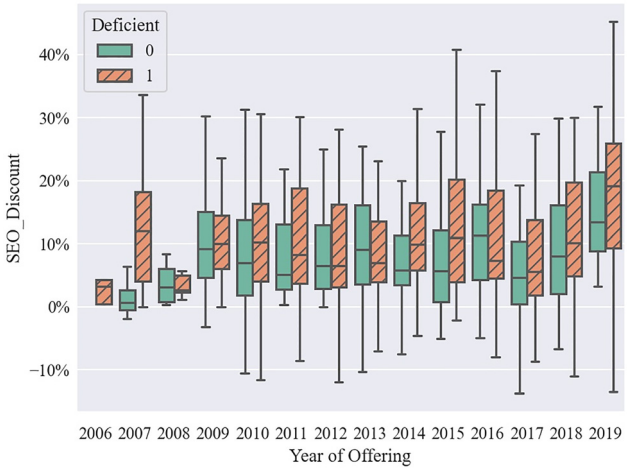


Figure 2 presents a box plot of the distribution of *SEO_Discount* for clients of triennial firms by year. The blue (orange) boxes represent SEO discounts for clients of clean (deficient) auditors.
(The full-color version is available online.)

SEO (*Restate_Client*). Discounting is higher for firms with greater uncertainty (Altınkılıç and Hansen 2003; Corwin 2003) and lower for firms with more information intermediaries (Bowen et al. 2008; Chemmanur, He, and Hu 2009). Therefore, we control for stock return volatility (*Volatility*), analyst following (*ln(Analysts)*), and percentage of institutional ownership (*InstOwn%*).[19]

Offerings for low priced stocks with relatively inelastic demand are more steeply discounted to attract greater participation (Gerard and Nanda 1993; Altınkılıç and Hansen 2003; Corwin 2003). We account for these effect by including offer size (*RelSize*) and stock price (*ln(Price)*). In addition to general price pressure, Gerard and Nanda (1993) suggest that informed traders use the secondary market to manipulate the offer price. Hence, we control for negative (*CAR−*) or positive (*CAR+*) cumulative abnormal returns over the five-day period prior to the offer (Bowen et al. 2008; Chan and Chan 2014). Consistent with price manipulation, we also control for price rounding using both the previous day's closing price (*Tick*) and the offer price (*Cluster*) (Mola and Loughran 2004; Bowen et al. 2008; Chan and Chan 2014). Research suggests systematic differences in SEO discounting across exchanges (Ritter and Welch 2002; Bowen et al. 2008; Chan and Chan 2014); therefore, we include indicator variables if the firm is traded on the NASDAQ exchange (*NASDAQ*) or is traded over the counter (*OTCPink*). We also control for firm size (*ln(Size)*). We include controls for the offering itself, including whether the issuer uses a high-ranking underwriter (*HighRank*), whether the SEO was executed via a shelf registration (*PublicShelf*),[20] whether the offering is a "firm commitment" (*FirmCommitment*), and whether the underwriters provide some assurance related to subscription levels of the offering (*BestEfforts*) (Huang and Zhang 2011). We also include *SimOffer*, which captures any simultaneous market offer characteristics of the SEO, and *SecShares%*, which captures the proportion of total shares offered that are secondary shares.

Finally, we control for auditor size (*ln(Clients)*) and auditor tenure (*ln(Tenure)*) to capture other potential signals of audit quality. Finally, our models include calendar year fixed effects and industry fixed effects, defined using Fama-French ten-industry classifications to control for both time- and industry-specific contributors to SEO discounting. For

[19] *Volatility* proxies for general *ex ante* uncertainty but could also be impacted by knowledge of the upcoming SEO. Therefore, like prior research, we compute volatility over a 30 trading-day period ending 11 trading days prior to the SEO (Corwin 2003; Kim and Park 2006; Henry and Koski 2010).

[20] SDC identifies shelf offerings in the variable SHF. However, we identified irregularities in the data that suggested a high error rate (i.e., there were only five shelf offerings in 2016 and no shelf offerings according to SDC in 2017–2019). Therefore, we downloaded the prospectus filings for all SEOs in our sample and used a Python script to search filings for the phrase "shelf offering" or "shelf registration." Our process suggested that, between 2010 and 2015, SDC miscoded filings between 24 percent and 36 percent of the time, and this increased to over 80 percent in the latter years of our sample. We manually checked 200 filings, ensuring that our coding procedure was accurate and that offering characteristics in the prospectus matched SDC. Thus, our definition of *PublicShelf* takes a value of 1 if SDC identifies the filing as a shelf offering or if our procedure identifies the key phrase in the prospectus.

our second hypothesis, we include the same set of controls as Equation (1) but add controls for the presence of a Big 4 auditor (*Big4*) and whether the auditor is considered an industry specialist (*Specialist*). All variable definitions and corresponding calculations are located in Appendix A.

Descriptive Statistics and Correlations

Table 2, Panel A (B) presents descriptive statistics for our triennially (annually) inspected sample. In Panel A (B), the mean and median values for *SEO_Discount* of 10.0 (6.0) and 8.4 (4.0) percent, respectively, imply substantial discounting. Approximately 51.3 percent of firms in our triennial sample are audited by auditors deemed deficient. Approximately 5 (7) percent of client firms in our triennial (annual) sample reported a restatement in the year prior to the SEO. As expected, firms employing triennially inspected auditors are smaller (average size of $182 million) than those employing annually inspected auditors (average size of $2.6 billion). The median share price (analyst following) is only $4.17 (1) for these firms of triennially inspected auditors versus a median share price (analyst following) of $17.26 (4) for clients of annually inspected auditors. In addition, 52.8 (51.0) percent of observations with triennially (annually) inspected auditors are listed on the NASDAQ, and 6.9 (0.6) percent are traded over the counter. In terms of the SEO

TABLE 2

Descriptive Statistics

Panel A: Descriptive Statistics and Univariate Comparisons—Triennial Sample (n = 864)

Variables	Mean	Std. Dev.	Lower Quartile	Median	Upper Quartile	Mean Value Deficient = 0 (a) [n = 421]	Mean Value Deficient = 1 (b) [n = 443]	Difference (a) − (b)
SEO_Discount	0.100	0.120	0.032	0.084	0.159	0.086	0.114	−0.028***
Deficient	0.513	0.500	0.000	1.000	1.000			
Prior_Deficient	0.410	0.492	0.000	0.000	1.000	0.380	0.438	−0.058*
Deficiency_Rate	0.212	0.271	0.000	0.125	0.375	0.000	0.413	−0.413***
Prior_Deficiency_Rate	0.158	0.241	0.000	0.000	0.308	0.127	0.188	−0.061***
Accruals	−0.184	0.361	−0.215	−0.083	−0.007	−0.187	−0.180	−0.007
Restate_Auditor	0.053	0.083	0.000	0.038	0.085	0.049	0.068	−0.019***
Restate_Client	0.053	0.225	0.000	0.000	0.000	0.052	0.054	−0.002
Volatility	0.049	0.035	0.027	0.040	0.057	0.048	0.050	−0.002
Analysts	2.008	2.405	0.000	1.000	3.000	2.086	1.935	0.151
InstOwn%	0.184	0.227	0.000	0.088	0.296	0.181	0.188	−0.007
RelSize	0.282	0.362	0.100	0.176	0.303	0.275	0.289	−0.014
Price	7.457	9.026	1.530	4.170	9.300	7.276	7.628	−0.352
CAR−	−0.063	0.091	−0.096	−0.022	0.000	−0.070	−0.057	−0.013**
CAR+	0.038	0.094	0.000	0.000	0.032	0.037	0.039	−0.002
Tick	0.922	0.268	1.000	1.000	1.000	0.933	0.912	0.021
Cluster	0.235	0.424	0.000	0.000	0.000	0.211	0.257	−0.046
NASDAQ	0.528	0.500	0.000	1.000	1.000	0.511	0.544	0.489
Size (millions)	182.102	272.805	31.609	80.502	203.994	179.853	184.240	−4.387
HighRank	0.144	0.351	0.000	0.000	0.000	0.140	0.147	−0.007
PublicShelf	0.758	0.428	1.000	1.000	1.000	0.758	0.758	0.000
FirmCommitment	0.669	0.471	0.000	1.000	1.000	0.641	0.695	−0.054*
BestEfforts	0.104	0.306	0.000	0.000	0.000	0.097	0.111	−0.014
SimOffer	0.021	0.143	0.000	0.000	0.000	0.021	0.020	0.001
OTCPink	0.069	0.254	0.000	0.000	0.000	0.052	0.086	−0.034*
SecShares%	0.010	0.062	0.000	0.000	0.000	0.012	0.008	0.004
Clients	34.958	30.284	13.000	28.000	49.000	34.924	34.991	−0.067
Tenure	4.899	4.239	2.000	4.000	6.000	5.059	4.747	0.312

(continued on next page)

TABLE 2 (continued)

Panel B: Descriptive Statistics—Annual Sample (n = 2,776)

Variables	Mean	Std. Dev.	Lower Quartile	Median	Upper Quartile
SEO_Discount	0.060	0.071	0.020	0.040	0.084
Deficient	1.000	0.000	1.000	1.000	1.000
Deficiency_Rate	0.328	0.142	0.226	0.298	0.415
Prior_Deficiency_Rate	0.286	0.186	0.205	0.291	0.413
Accruals	−0.066	0.171	−0.105	−0.043	−0.008
Restate_Auditor	0.044	0.027	0.026	0.039	0.055
Restate_Client	0.067	0.251	0.000	0.000	0.000
Volatility	0.029	0.022	0.013	0.024	0.037
Analysts	5.849	5.619	2.000	4.000	8.000
InstOwn%	0.516	0.359	0.173	0.548	0.827
RelSize	0.181	0.181	0.080	0.131	0.209
Price	25.902	28.508	7.430	17.255	32.145
CAR−	−0.030	0.054	−0.035	−0.001	0.000
CAR+	0.035	0.093	0.000	0.000	0.028
Tick	0.942	0.234	1.000	1.000	1.000
Cluster	0.268	0.443	0.000	0.000	1.000
NASDAQ	0.510	0.500	0.000	1.000	1.000
Size (millions)	2,646.210	5,440.826	246.980	830.567	2,382.883
HighRank	0.478	0.500	0.000	0.000	1.000
PublicShelf	0.869	0.337	1.000	1.000	1.000
FirmCommitment	0.906	0.292	1.000	1.000	1.000
BestEfforts	0.016	0.126	0.000	0.000	0.000
SimOffer	0.040	0.197	0.000	0.000	0.000
OTCPink	0.006	0.078	0.000	0.000	0.000
SecShares%	0.039	0.157	0.000	0.000	0.000
Clients	1,515.879	597.165	1,262.000	1,717.000	1,906.000
Tenure	1.833	0.924	1.099	1.946	2.485
Big4	0.779	0.415	1.000	1.000	1.000
Specialist	0.128	0.334	0.000	0.000	0.000

***, **, * Indicate significance at the 0.01, 0.05, and 0.10 levels (one-tailed if in predicted direction, two-tailed otherwise), respectively.
Table 2 presents descriptive statistics for variables of interest and control variables. All untransformed continuous variables are Winsorized at the 1st and 99th percentiles of their distributions. Panel A (B) presents descriptive statistics for our triennial (annual) sample.
See Appendix A for variable definitions.

characteristics for the triennial subsample of observations, 75.8 (10.4) [66.9] percent utilize public shelf offerings (best efforts) [firm commitments] compared to 86.9 (1.6) [90.6] percent in the annual subsample of observations. Finally, the mean value for *Cluster* suggests that 23.5 (26.8) percent of offerings are rounded to the nearest dollar.

In the final three columns of Panel A, we separate the triennial sample into SEOs audited by clean and deficient auditors. Consistent with our first hypothesis, we find significantly higher SEO discounting for firms audited by deficient auditors. Unsurprisingly, deficient auditors are more likely to have a prior inspection report that was deficient (*Prior_Deficient*) and have a higher percentage of their client portfolio disclosing a restatement (*Restate_Auditor*). Smaller firms that are traded over the counter (*OTCPink*) are more likely to employ a deficient auditor. Also, the underwriter is more likely to guarantee full subscription of the offering (*FirmCommitment*) when the auditor is deficient. Finally, clients of deficient auditors are less likely to have a negative return in the pre-SEO period (*CAR−*). Remaining differences are insignificant, suggesting similar characteristics across the two groups.

Table 3, Panel A (B) presents correlations for the sample of firms audited by triennially (annually) inspected auditors. For brevity, we focus on the first columns which present how each variable correlates with the dependent variable, *SEO_Discount*. Consistent with our hypotheses, in the sample of firms audited by triennially (annually) inspected auditors, *Deficient* and *Deficiency_Rate (Deficiency_Rate)* exhibit(s) significant positive correlations with *SEO_Discount*. Consistent with past SEO research, several control variables exhibit significant correlations with *SEO_Discount*. For the

TABLE 3

Pearson Correlations

Panel A: Pearson Correlations for Triennial Sample (n = 864)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) *SEO_Discount*													
(2) *Deficient*	**0.12**												
(3) *Prior_Deficient*	0.00	0.06											
(4) *Deficiency_Rate*	**0.12**	**0.76**	**0.11**										
(5) *Prior_Deficiency_Rate*	−0.02	**0.13**	**0.75**	**0.22**									
(6) *Accruals*	−0.06	0.01	−0.05	−0.03	−0.02								
(7) *Restate_Auditor*	0.05	**0.11**	−0.04	**0.14**	0.02	0.05							
(8) *Restate_Client*	−0.01	0.00	−0.04	−0.02	−0.02	0.04	**0.23**						
(9) *Volatility*	**0.19**	0.03	0.01	0.05	0.06	**−0.23**	0.06	0.06					
(10) *ln(Analysts)*	**−0.08**	−0.03	0.01	0.00	0.00	**0.09**	−0.01	**−0.08**	**−0.13**				
(11) *InstOwn%*	**−0.16**	0.02	**0.10**	0.05	0.06	**0.17**	0.01	0.01	**−0.24**	**0.50**			
(12) *RelSize*	**0.16**	0.02	0.02	0.01	0.04	0.01	0.03	0.05	**0.15**	**−0.11**	**−0.13**		
(13) *ln(Price)*	**−0.15**	0.02	0.04	0.04	0.02	**0.27**	0.01	−0.02	**−0.37**	**0.26**	**0.56**	**−0.13**	
(14) *CAR−*	**0.12**	**0.07**	−0.02	0.05	−0.06	**0.16**	−0.03	−0.06	**−0.16**	0.07	**0.15**	**−0.21**	**0.26**
(15) *CAR+*	**0.16**	0.01	0.01	0.00	−0.01	−0.05	0.04	−0.03	**0.21**	−0.01	−0.03	−0.05	−0.02
(16) *Tick*	−0.07	−0.04	−0.02	−0.03	−0.05	0.00	0.01	−0.05	0.00	0.06	0.06	**−0.08**	**−0.08**
(17) *Cluster*	−0.05	0.05	0.00	0.03	0.02	**0.12**	0.03	0.01	**−0.14**	0.02	**0.12**	0.04	**0.34**
(18) *NASDAQ*	−0.06	0.03	−0.02	0.02	0.03	0.07	−0.03	0.05	0.00	**0.08**	**0.09**	**0.11**	**0.13**
(19) *ln(Size)*	**−0.12**	0.03	0.03	0.06	−0.02	**0.15**	0.03	−0.04	**−0.33**	**0.47**	**0.56**	**−0.42**	**0.68**
(20) *HighRank*	0.00	0.01	0.03	0.02	0.03	0.00	−0.05	0.04	**−0.08**	**0.15**	**0.16**	0.02	**0.10**
(21) *PublicShelf*	−0.02	0.00	0.04	0.03	0.03	0.02	0.01	**−0.12**	**−0.07**	**0.25**	**0.17**	**−0.38**	**0.09**
(22) *FirmCommitment*	0.05	0.06	**0.12**	0.06	**0.09**	**0.08**	0.03	−0.01	**−0.14**	**0.23**	**0.27**	**0.12**	**0.38**
(23) *BestEfforts*	0.02	0.02	−0.04	0.01	−0.02	−0.05	0.04	0.02	**0.11**	**−0.11**	**−0.12**	**−0.07**	**−0.15**
(24) *SimOffer*	0.00	0.00	−0.06	−0.04	−0.03	−0.03	0.00	**0.07**	0.06	−0.01	0.00	0.03	**−0.07**
(25) *OTCPink*	**0.07**	0.07	0.03	0.07	0.03	−0.12	0.00	0.00	**0.15**	**−0.27**	**−0.21**	**0.12**	**−0.19**
(26) *SecShares%*	0.01	−0.03	−0.03	−0.04	−0.04	0.02	0.06	−0.02	−0.03	0.01	**0.07**	−0.03	**0.18**
(27) *ln(Clients)*	−0.03	**0.12**	**0.17**	**−0.09**	−0.04	**−0.10**	**−0.11**	−0.02	0.06	−0.02	−0.03	0.04	−0.04
(28) *ln(Tenure)*	0.05	−0.02	**0.11**	0.03	**0.13**	0.06	0.04	−0.05	**−0.08**	**0.18**	**0.12**	−0.01	0.06

(continued on next page)

TABLE 3 (continued)

	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
(1) *SEO_Discount*														
(2) *Deficient*														
(3) *Prior_Deficient*														
(4) *Deficiency_Rate*														
(5) *Prior_Deficiency_Rate*														
(6) *Accruals*														
(7) *Restate_Auditor*														
(8) *Restate_Client*														
(9) *Volatility*														
(10) *ln(Analysts)*														
(11) *InstOwn%*														
(12) *RelSize*														
(13) *ln(Price)*														
(14) *CAR−*														
(15) *CAR+*	**0.28**													
(16) *Tick*	−0.02	−0.03												
(17) *Cluster*	0.01	−0.07	**−0.07**											
(18) *NASDAQ*	−0.05	−0.06	−0.03	**0.09**										
(19) *ln(Size)*	**0.28**	0.02	0.03	**0.18**	−0.06									
(20) *HighRank*	0.01	−0.02	0.02	0.00	0.04	**0.13**								
(21) *PublicShelf*	**0.08**	0.03	**0.10**	−0.05	**−0.08**	**0.33**	0.02							
(22) *FirmCommitment*	**−0.07**	**−0.14**	−0.05	**0.10**	**0.08**	**0.27**	**0.27**	0.01						
(23) *BestEfforts*	0.04	**0.12**	0.04	−0.04	−0.03	**−0.10**	**−0.14**	0.02	**−0.48**					
(24) *SimOffer*	−0.01	−0.03	−0.02	−0.02	**0.07**	**−0.08**	−0.01	**−0.09**	**−0.09**	**0.11**				
(25) *OTCPink*	**−0.07**	0.01	−0.02	−0.05	**−0.22**	**−0.21**	−0.02	**−0.26**	**−0.13**	**0.10**	−0.01			
(26) *SecShares%*	0.04	−0.03	−0.02	**0.09**	0.01	**0.13**	0.05	**−0.07**	**0.10**	−0.06	−0.02	−0.03		
(27) *ln(Clients)*	−0.03	0.03	0.03	0.05	**0.08**	−0.05	−0.03	−0.04	0.06	0.01	0.03	0.03	−0.03	
(28) *ln(Tenure)*	0.01	0.03	−0.01	0.01	**0.09**	0.02	0.01	**0.07**	**0.09**	**−0.08**	0.00	**−0.10**	−0.05	**−0.12**

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TABLE 3 (continued)

Panel B: Pearson Correlations for Annual Sample (n = 2,776) (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) *SEO_Discount*													
(2) *Deficiency_Rate*	**0.07**												
(3) *Prior_Deficiency_Rate*	**0.05**	**0.69**											
(4) *Accruals*	**−0.11**	**−0.07**	**−0.11**										
(5) *Restate_Auditor*	0.13	**0.23**	**0.33**	−0.03									
(6) *Restate_Client*	−0.02	0.03	**0.05**	−0.02	**0.13**								
(7) *Volatility*	**0.34**	**0.10**	**0.07**	**−0.31**	0.03	0.00							
(8) *ln(Analysts)*	**−0.16**	**−0.07**	**0.04**	0.01	−0.01	0.00	**−0.13**						
(9) *InstOwn%*	**−0.25**	**−0.07**	**0.04**	**0.05**	0.01	−0.02	**−0.26**	**0.36**					
(10) *RelSize*	**0.28**	**0.06**	−0.02	0.01	0.00	0.01	**0.22**	**−0.27**	**−0.26**				
(11) *ln(Price)*	**−0.39**	**−0.08**	**0.05**	**0.16**	0.01	0.01	**−0.40**	**0.39**	**0.51**	**−0.37**			
(12) *CAR−*	**−0.14**	**−0.07**	0.00	**0.12**	−0.03	**−0.04**	**−0.27**	**0.13**	**0.19**	**−0.29**	**0.33**		
(13) *CAR+*	**0.16**	**0.05**	**0.09**	**−0.08**	0.02	0.03	**0.21**	0.00	**−0.04**	0.03	**−0.05**	**0.21**	
(14) *Tick*	−0.02	**0.04**	**0.04**	0.00	0.02	0.01	0.02	**0.04**	0.02	−0.02	−0.02	−0.01	−0.02
(15) *Cluster*	**0.09**	0.03	**0.06**	−0.03	0.03	0.03	**0.07**	**0.06**	**0.07**	−0.02	**0.23**	−0.02	**0.06**
(16) *NASDAQ*	**0.21**	**0.06**	**0.04**	**−0.05**	0.03	−0.01	**0.33**	−0.01	**−0.15**	**0.09**	**−0.20**	**−0.16**	**0.13**
(17) *ln(Size)*	**0.04**	0.03	−0.03	**−0.09**	−0.02	0.03	**0.08**	**−0.13**	**−0.10**	**0.10**	**−0.10**	−0.01	0.00
(18) *HighRank*	**−0.39**	**−0.14**	−0.01	**0.11**	0.01	0.01	**−0.43**	**0.54**	**0.52**	**−0.55**	**0.79**	**0.36**	**−0.07**
(19) *PublicShelf*	**−0.12**	−0.01	**0.07**	**0.04**	−0.02	0.01	**−0.14**	**0.28**	**0.20**	**−0.11**	**0.29**	**0.09**	−0.02
(20) *FirmCommitment*	−0.02	**−0.05**	0.02	**0.05**	0.01	−0.02	**−0.18**	**0.26**	**0.13**	**−0.19**	**0.05**	**0.10**	0.01
(21) *BestEfforts*	0.01	−0.01	**0.06**	**0.11**	0.04	0.01	**−0.18**	**0.21**	**0.16**	0.01	**0.25**	0.01	−0.03
(22) *SimOffer*	**0.04**	0.03	−0.02	**−0.07**	0.02	−0.02	**0.10**	**−0.13**	**−0.14**	0.01	**−0.17**	−0.03	0.02
(23) *OTCPink*	−0.02	**−0.05**	**−0.07**	0.01	0.01	0.03	0.01	0.03	0.03	**−0.05**	0.02	0.01	0.00
(24) *SecShares%*	**−0.08**	**−0.04**	−0.02	−0.02	0.01	0.03	0.02	**−0.11**	−0.03	0.01	**0.12**	0.01	**−0.04**
(25) *ln(Clients)*	**−0.18**	**−0.25**	**−0.11**	**0.08**	**−0.08**	**0.04**	**−0.14**	**0.24**	**0.24**	**−0.15**	**0.27**	**0.13**	−0.03
(26) *ln(Tenure)*	**−0.10**	**−0.13**	−0.03	0.00	**0.07**	−0.03	**−0.09**	**0.24**	**0.19**	**−0.21**	**0.20**	**0.09**	0.02
(27) *Big4*	**−0.13**	**−0.34**	**−0.18**	**0.07**	**0.15**	**0.05**	**−0.09**	**0.22**	**0.21**	**−0.14**	**0.26**	**0.09**	0.01
(28) *Specialist*	**−0.10**	0.00	**0.07**	**0.10**	**0.13**	−0.01	**−0.15**	**0.04**	**0.07**	**−0.06**	**0.15**	**0.05**	**−0.05**

(continued on next page)

TABLE 3 (continued)

	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
(1) *SEO_Discount*														
(2) *Deficiency_Rate*														
(3) *Prior_Deficiency_Rate*														
(4) *Accruals*														
(5) *Restate_Auditor*														
(6) *Restate_Client*														
(7) *Volatility*														
(8) *ln(Analysts)*														
(9) *InstOwn%*														
(10) *RelSize*														
(11) *ln(Price)*														
(12) *CAR−*														
(13) *CAR+*														
(14) *Tick*														
(15) *Cluster*	−0.02													
(16) *NASDAQ*	−0.01	**0.10**												
(17) *ln(Size)*	**−0.04**	−0.01	−0.03											
(18) *HighRank*	0.02	**0.11**	**−0.33**	**−0.12**										
(19) *PublicShelf*	−0.02	**0.06**	**−0.12**	**−0.07**	**0.36**									
(20) *FirmCommitment*	0.02	0.00	**−0.05**	**−0.12**	**0.16**	**0.07**								
(21) *BestEfforts*	0.00	**0.11**	−0.03	**−0.18**	**0.24**	**0.28**	**0.27**							
(22) *SimOffer*	−0.02	−0.02	**0.05**	**0.21**	**−0.17**	**−0.12**	−0.03	**−0.38**						
(23) *OTCPink*	−0.04	0.00	**−0.07**	0.03	**0.06**	−0.03	**−0.08**	**−0.16**	0.03					
(24) *SecShares%*	0.00	**0.07**	−0.02	−0.02	**0.06**	**0.09**	**−0.27**	**0.08**	−0.03	−0.04				
(25) *ln(Clients)*	0.01	0.01	**−0.11**	**−0.16**	**0.36**	**0.19**	**0.12**	**0.14**	**−0.15**	**0.04**	0.03			
(26) *ln(Tenure)*	0.01	0.00	**−0.09**	**−0.09**	**0.32**	**0.11**	**0.14**	**0.04**	**−0.05**	0.04	**−0.09**	**0.31**		
(27) *Big4*	−0.03	**0.04**	**−0.06**	**−0.13**	**0.34**	**0.18**	**0.06**	**0.11**	**−0.10**	0.03	**0.06**	**0.71**	**0.32**	
(28) *Specialist*	−0.01	−0.01	**−0.13**	−0.03	**0.18**	**0.09**	**0.05**	**0.04**	−0.03	−0.02	−0.03	**0.17**	**0.15**	**0.20**

Table 3 presents Pearson correlations for variables of interest and control variables. All untransformed continuous variables are Winsorized at the 1st and 99th percentiles of their distributions. Pearson correlations significant at p-value less than or equal to 0.05 are in bold.
See Appendix A for variable definitions.

triennial sample, the discount is larger when there is more pre-SEO price volatility (*Volatility*), higher relative offering size (*RelSize*), a larger change in the pre-SEO stock price (*CAR*− and *CAR*+) or if a firm is traded over the counter (*OTCPink*). The discount is smaller in instances where there is a larger analyst following (*ln(Analysts)*), higher institutional ownership (*InstOwn*), when the issuer is larger (*ln(Size)*), and if the stock trades at a higher price (*ln(Price)*). Overall, we observe similar relations in the annual sample but also find discounting to negatively relate to shelf registration (*PublicShelf*), financial statement quality (*Accruals*), underwriter reputation (*HighRank*), auditor size (*Big4*), auditor tenure (*ln(Tenure)*) and auditor specialization (*Specialist*). Further, we find discounting is positively related to *Cluster* and *NASDAQ*. Finally, we observe relatively few high correlations among other variables, and regression diagnostics indicate that multicollinearity is unlikely to affect our multivariate analyses.

IV. RESULTS

SEO Discounting and PCAOB Inspection Findings: Triennially Inspected Auditors

In Table 4, we present the results of estimating Equation (1) for our sample of 864 SEOs audited by triennially inspected auditors. Column 1 (2) presents results using *Deficient (Deficiency_Rate)* as our test variable. Consistent with our prediction, column (1) reports a statistically significant, positive relation between *Deficient* and *SEO_Discount* (t-statistic of 2.48), suggesting an economically meaningful 1.7 percent increase in the amount of SEO discounting, or 17 percent of the sample mean SEO discount of 10.0 percent. We observe similar results in column (2) using *Deficiency_Rate* as our test variable. Regarding the control variables, most exhibit associations consistent with prior literature. For example, we find higher discounting for firms in more volatile environments (*Volatility*), larger offerings (*RelSize*), firms with larger changes in the pre-SEO stock price (*CAR*− and *CAR*+), and for firm commitment (*FirmCommitment*) offerings. We also find lower discounting for firms with higher institutional ownership (*InstOwn%*) and higher stock price (*ln(Price)*).[21] Table 4 also documents that auditor-specific variables are associated with SEO discounting. In particular, firms audited by larger auditors (*ln(Clients)*) exhibit lower SEO discounting, whereas firms employing more experienced auditors (*ln(Tenure)*) exhibit larger SEO discount—potentially an indication that investors view longer-tenured, triennially-inspected audit firms as less independent.[22]

We do observe one somewhat surprising result that merits additional discussion. Namely, the coefficient on *Prior_Deficiency_Rate* is significantly *negative*, suggesting that deficiencies in the prior PCAOB inspection report reduce SEO discounting (opposite our prediction). One explanation for this result is that, by including both *Deficiency_Rate* and *Prior_Deficiency_Rate* in the model, we are essentially testing whether the change in deficiency rate (*Deficiency_Rate* – *Prior_Deficiency_Rate*) relates to SEO discounting. Indeed, testing the coefficient combination $\beta_1 - \beta_2$ (where β_1 [β_2] is the coefficient on *Deficiency_Rate* [*Prior_Deficiency_Rate*]) yields a positive value that is highly significant. Further, testing whether coefficient magnitudes differ ($\beta_1 = -\beta_2$) fails to reject the null, again suggesting that β_1 and β_2 jointly capture the relation between the change in deficiency rate and SEO discounting. We also find that this evidence is limited to instances where the current inspection report identifies deficiencies (*Deficiency_Rate* > 0; untabulated). In instances where the auditor received a "clean" inspection report (i.e., *Deficiency_Rate* $= 0$), we fail to observe a significant coefficient on *Prior_Deficiency_Rate*.[23] While this explanation provides some insight into this finding, we note that it is difficult to interpret coefficients on controls since, by definition, they are mediated by other variables (Whited, Shipman, Swanquist, and Moon 2022). Nonetheless, our analysis suggests that in cases where the most current inspection report is deficient, investors compare current and prior deficiency rates in order to assess whether there is improvement in auditor performance/audit quality.

SEO Discounting and PCAOB Inspection Findings: Annually Inspected Auditors

Our analyses thus far have focused on SEOs by clients of triennially inspected auditors. Next, we examine whether PCAOB reports for annually inspected auditors are a signal of quality to investors. Recall that no annually inspected

[21] We do observe some unexpected results. For example, we find a negative coefficient on *Tick*. We highlight that our sample of SEOs audited by triennially inspected auditors is quite different from those examined in other studies, which may explain some of these differences. Many papers delete small offerings (such as those used in this sample) to ensure these offerings are not driving their results (Bowen et al. 2008; Chan and Chan 2014).

[22] There were 44 auditor changes that occurred between the issuance of the most recent 10-K and the SEO. In these cases, the auditor associated with the most recent 10-K was used in our analysis, rather than the succeeding auditor. Our results are robust to excluding these 44 observations from our analyses. In cases where there was not a prior inspection report available, we coded these observations as 0 for *Prior_Deficient and Prior_Deficiency_Rate*. Excluding observations that lacked a prior inspection report did not substantively alter our results.

[23] This result is not due to multicollinearity. Estimating Equation (1) without the *Prior_Deficiency_Rate* variable or the *Deficiency_Rate* variable produces similar coefficients to the ones reported in Table 4. We also examine whether the positive coefficient on the *Prior_Deficiency_Rate* variable is driven by the initial PCAOB inspection report—where *Prior_Deficiency_Rate* is set to 0—by excluding observations with no prior-period inspection report. We continue to observe a positive and significant coefficient on *Prior_Deficiency_Rate*.

TABLE 4

Regression Results—Triennial Sample

		(1)		(2)	
Variables	**Predicted Direction**	**Coefficient Estimate**	**t-statistic**	**Coefficient Estimate**	**t-statistic**
Deficient	+	0.017	2.48***		
Deficiency_Rate	+			0.026	2.20**
Prior_Deficient	+/−	−0.007	−0.78		
Prior_Deficiency_Rate	+/−			−0.035	−2.12**
Accruals	+/−	−0.004	−0.23	−0.003	−0.15
Restate_Auditor	+/−	0.022	0.60	0.026	0.74
Restate_Client	+/−	0.005	0.31	0.006	0.32
Volatility	+/−	0.402	2.32**	0.417	2.43**
ln(Analysts)	+/−	−0.009	−1.35	−0.010	−1.39
InstOwn%	+/−	−0.050	−2.74***	−0.049	−2.71***
RelSize	+/−	0.062	3.69***	0.062	3.64***
ln(Price)	+/−	−0.023	−2.90***	−0.024	−3.00***
CAR−	+/−	0.275	4.15***	0.276	4.20***
CAR+	+/−	0.113	2.56**	0.113	2.50**
Tick	+/−	−0.027	−1.87*	−0.029	−1.99*
Cluster	+/−	0.003	0.32	0.004	0.41
NASDAQ	+/−	−0.010	−1.25	−0.009	−1.17
ln(Size)	+/−	0.009	1.31	0.009	1.28
HighRank	+/−	−0.003	−0.30	−0.003	−0.27
PublicShelf	+/−	0.015	1.47	0.015	1.52
FirmCommitment	+/−	0.041	3.51***	0.043	3.63***
BestEfforts	+/−	0.030	1.60	0.032	1.68*
SimOffer	+/−	0.012	0.81	0.012	0.88
OTCPink	+/−	0.007	0.24	0.008	0.26
SecShares%	+/−	0.071	1.22	0.070	1.17
ln(Clients)	+/−	−0.009	−2.46**	−0.008	−2.31**
ln(Tenure)	+/−	0.009	1.88*	0.009	1.98*
Observations			864		864
Adjusted R^2			16.3%		16.5%

***, **, * Indicate significance at the 0.01, 0.05, and 0.10 levels (one-tailed if in predicted direction, two-tailed otherwise), respectively.
In Table 4, *SEO_Discount* is regressed on our variables of interest (*Deficient* in column (1); *Deficiency_Rate* in column (2)) and control variables for the sample of firms audited by triennially inspected auditors. All untransformed continuous variables are Winsorized at the 1st and 99th percentiles of their distributions. Year and industry (Fama-French's ten-industry classification) fixed effects are included in the model. Standard errors are robust to heteroskedasticity and clustering at the issuance year-quarter.
See Appendix A for variable definitions.

auditor in our sample has a "clean" inspection report, so we only consider *Deficiency_Rate* in these analyses. Table 5 reports multivariate results for the clients of annually inspected auditors. The coefficient on *Deficiency_Rate* is positive but insignificant (t-statistic = 0.79), failing to support our second hypothesis.

The failure to document a relation between SEO discounting and our test variable for the clients of annually inspected auditors is likely a function of several factors. First, as previously mentioned, there is minimal variation in the inspection reports for this cohort of firms. The market may not believe that differential deficiency rates are informative about audit quality among this cohort of auditors.[24] Second, inspection coverage is generally much lower for annually inspected firms due to the limited PCAOB inspection budget and the very large clienteles that each annually inspected auditor possesses. Third, annually inspected auditors expend significant resources to establish and maintain their brand

[24] We also utilized a relative ranking of the auditors based upon overall annual *Deficiency_Rate* values. We did so on an overall and within-strata (i.e., Big 4 firms and annually inspected non-Big 4 firms) basis. Both methods produce insignificant results.

TABLE 5

Regression Results—Annual Sample

Variables	Predicted Direction	Coefficient Estimate	t-statistic
Deficiency_Rate	+	0.011	0.79
Prior_Deficiency_Rate	+/–	0.007	0.48
Accruals	+/–	0.006	0.61
Restate_Auditor	+/–	0.012	0.22
Restate_Client	+/–	−0.003	−0.61
Volatility	+/–	0.335	3.38***
ln(Analysts)	+/–	−0.004	−1.63
InstOwn%	+/–	−0.008	−2.64**
RelSize	+/–	0.051	3.57***
ln(Price)	+/–	−0.018	−10.20***
CAR−	+/–	0.117	3.03***
CAR+	+/–	0.034	1.51
Tick	+/–	−0.005	−0.99
Cluster	+/–	0.020	9.19***
NASDAQ	+/–	0.002	0.63
ln(Size)	+/–	−0.001	−0.92
HighRank	+/–	−0.002	−0.77
PublicShelf	+/–	0.006	1.04
FirmCommitment	+/–	0.028	4.27***
BestEfforts	+/–	0.006	0.39
SimOffer	+/–	0.010	1.66
OTCPink	+/–	−0.003	−0.08
SecShares%	+/–	−0.019	−2.77***
ln(Clients)	+/–	−0.005	−2.06**
ln(Tenure)	+/–	0.001	0.65
Big4	+/–	0.003	0.72
Specialist	+/–	−0.002	−0.81
Observations			2,776
Adjusted R^2			28.4%

***, **, * Indicate significance at the 0.01, 0.05, and 0.10 levels (one-tailed if in predicted direction, two-tailed otherwise), respectively.
In Table 5, *SEO_Discount* is regressed on our variable of interest (*Deficiency_Rate*) and control variables for the sample of firms audited by annually inspected auditors. All untransformed continuous variables are Winsorized at the 1st and 99th percentiles of their distributions. Year and industry (Fama-French's ten-industry classification) fixed effects are included in the model. Standard errors are robust to heteroskedasticity and clustering at the issuance year-quarter.
See Appendix A for variable definitions.

names, allowing for greater awareness of these auditors by market participants and lessening the value of inspection reports.

V. ADDITIONAL ANALYSIS

Inspection Report Recency

Our findings suggest that PCAOB inspection deficiencies provide information relevant to pricing of SEOs for clients of triennially inspected auditors. These results are consistent with investors using unambiguous, straightforward audit quality proxies that are publicly available.

Since inspection reports for triennially inspected auditors are not issued every year, inspection findings (or the lack thereof) may be relatively stale (i.e., two to three years old) at the time of the SEO. More recent inspection reports may be more useful to market participants for two reasons. First, it is well established that market participants utilize the

most recent set of financial statements for valuation purposes. As a result, if the most recent set of financial statements coincides with an inspection year containing audit deficiencies, investors may be more hesitant to rely on these financial statements for valuation purposes. Second, if too much time has elapsed since the date of the last inspection report, the audit firm may have already undertaken remedial actions to address inspection deficiencies. Therefore, we examine whether the recency of inspection report findings influences the relation between inspection findings and SEO discounting. Specifically, we separate our test variables into three different measures (within one year, one to two years, or greater than two years) based on when the inspection report is dated relative to the SEO.

Table 6 presents results with the first (second) column splitting *Deficient* (*Deficiency_Rate*) as described above. The SEO discount is larger when the auditor is deficient and the inspection report is dated within two years of the SEO. For reports dated more than two years prior to the SEO, we fail to observe a relation between inspection deficiencies and discounting (coefficients are positive but insignificant). While coefficient magnitudes are larger and statistically more significant, differences between coefficients are insignificant. We view this as providing some evidence that our primary findings are more likely attributable to more recent inspection reports (i.e., within one or two years), though our tests lack sufficient power to definitively conclude this is the case, particularly when comparing inspection results across periods.

Cross-Sectional Analyses of Firm Characteristics

Our hypotheses are built upon the premise that managers of equity-issuing firms have superior information relative to equity-purchasing market participants (i.e., information asymmetry). Audit quality—as proxied by PCAOB inspection reports—alleviates investor concerns about the primary information source of firm valuation, management-prepared financial statements. Therefore, we explore whether our evidence varies based upon the properties of our sample firms. We do so along three dimensions: firm information environment, firm internal control quality, and whether the firm has a going concern report modification. Given we fail to find support for H2, we restrict these tests to our triennially inspected sample.

Analyst Following

Analysts acquire, process, generate, and disseminate firm-specific, value-relevant information (Bowen et al. 2008). Greater analyst following, therefore, likely expands and improves the existing client-specific information set to investors, reducing information risk and the corresponding reluctance of investors to participate in an SEO. Based on this logic, we expect analyst following may substitute for the need for a reliable signal of audit quality. To examine this possibility, we bifurcate our overall sample based on the median analyst following (median = 1). The low (high) analyst following subsample includes observations with analyst following less than or equal to (greater than) the median analyst following. The results of this test are presented in Table 7, Panel A. Consistent with expectations, the coefficient estimates on *Deficient* and *Deficiency_Rate* are larger in the sample of firms with low analyst following relative to the sample of high analyst following, but the difference in coefficients across the two subsamples is insignificant for *Deficient* (t-statistic = 0.74) and marginally significant for *Deficiency_Rate* (t-statistic = 1.46).

More recent PCAOB inspection reports appear to be more informative to investors. Therefore, we repeat this cross-sectional test after restricting the sample to SEOs issued within two years of a PCAOB inspection report. The results, reported in columns (5) through (8) of Table 7, are similar to columns (1) through (4). However, the coefficient on the *Deficient* (*Deficiency_Rate*) variable is considerably larger. Further, both differences are statistically significantly (t-statistic = 2.65 and 2.83, respectively). Overall, this suggests that, PCAOB inspection results are relatively more relevant for firms with lower analyst following, at least with respect to SEO discounting.

Material Weaknesses in Internal Control

Prior research has consistently demonstrated a relation between a disclosed material weakness and financial reporting quality (Myllymaki 2014; Cheng, Dhaliwal, and Zhang 2013; Doyle, Ge, and McVay 2007). Per the audit risk model, poorer internal controls (1) increase the likelihood of a material misstatement in the pre-audited financial statements and (2) elevate control risk thus magnifying the importance of detection risk. Detection risk is the likelihood that the auditing procedures may fail to detect existence of a material error or fraud, which corresponds closely to the traditional definition of audit quality (DeFond and Zhang 2014). Therefore, for clients with poor internal controls, audit quality at the audit firm level plays a larger role in alleviating financial statement-related information risk. Since our evidence thus far indicates that SEO participants use inspection report information as a surrogate for audit quality, we

TABLE 6

PCAOB Inspection Report Characteristics—Inspection Report Recency

		(1)		(2)	
Variables	**Predicted Direction**	**Coefficient Estimate**	**t-statistic**	**Coefficient Estimate**	**t-statistic**
Deficient_0to1 Yr	+	0.019	2.50***		
Deficient_1to2 Yr	+	0.019	2.17**		
Deficient_ Gr2 Yr	+	0.008	0.60		
Deficiency_Rate0to1 Yr	+			0.034	2.33**
Deficiency_Rate1to2 Yr	+			0.023	1.38*
Deficiency_RateGr2 Yr	+			0.010	0.42
Prior_Deficient	+/−	−0.007	−0.81		
Prior_Deficiency_Rate	+/−			−0.035	−2.17**
Accruals	+/−	−0.004	−0.24	−0.002	−0.12
Restate_Auditor	+/−	0.024	0.68	0.027	0.78
Restate_Client	+/−	0.004	0.23	0.005	0.25
Volatility	+/−	0.400	2.32**	0.416	2.44**
ln(Analysts)	+/−	−0.010	−1.37	−0.010	−1.38
InstOwn%	+/−	−0.050	−2.72***	−0.048	−2.69***
RelSize	+/−	0.061	3.59***	0.061	3.60***
ln(Price)	+/−	−0.023	−2.91***	−0.024	−3.06***
CAR−	+/−	0.273	4.12***	0.274	4.16***
CAR+	+/−	0.115	2.59**	0.114	2.49**
Tick	+/−	−0.027	−1.91*	−0.029	−2.04**
Cluster	+/−	0.004	0.37	0.004	0.44
NASDAQ	+/−	−0.010	−1.29	−0.009	−1.19
ln(Size)	+/−	0.009	1.32	0.009	1.31
HighRank	+/−	−0.003	−0.29	−0.003	−0.27
PublicShelf	+/−	0.014	1.36	0.015	1.45
FirmCommitment	+/−	0.042	3.53***	0.043	3.62***
BestEfforts	+/−	0.029	1.58	0.031	1.66
SimOffer	+/−	0.013	0.90	0.013	0.95
OTCPink	+/−	0.007	0.23	0.008	0.26
SecShares%	+/−	0.071	1.21	0.070	1.15
ln(Clients)	+/−	−0.008	−2.40**	−0.008	−2.31**
ln(Tenure)	+/−	0.009	1.85*	0.009	2.00*
Observations			864		864
Adjusted R^2			16.2%		16.3%

***, **, * Indicate significance at the 0.01, 0.05, and 0.10 levels (one-tailed if in predicted direction, two-tailed otherwise), respectively.
In Table 6, *SEO_Discount* is regressed on our variables of interest (*Deficient* in column (1); *Deficiency_Rate* in column (2)) and control variables for the sample of firms audited by triennially inspected auditors. *Deficient* and *Deficiency_Rate* are separated into three categories based on the recency of the inspection report (within one year, one to two years, or greater than two years). All untransformed continuous variables are Winsorized at the 1st and 99th percentiles of their distributions. Year and industry (Fama-French's ten-industry classification) fixed effects are included in the model. Standard errors are robust to heteroskedasticity and clustering at the issuance year-quarter.
See Appendix A for variable definitions.

expect the role of PCAOB inspection results to be attenuated (exacerbated) for firms without (with) disclosed material weaknesses in internal controls over financial reporting.

To test this prediction, we partition our sample based on the presence of an internal control weakness and report results in Table 7, Panel B. The format of the table is identical to Panel A. In columns (1) through (4), the association between inspection findings and SEO discounting is most pronounced in firms with disclosed material weaknesses in the year prior to the SEO. The coefficients are significant regardless of the firm's internal controls over financial reporting. However, the magnitude of the estimates is four to six times larger for firms with material weaknesses. Additionally, the

TABLE 7

Cross-Sectional Analyses

Panel A: Analyst Following

	Full Sample						Subsample of SEOs within Two Years of an Inspection Report					
	(1) Low Follow	(2) High Follow	(1) – (2) Diff.	(3) Low Follow	(4) High Follow	(3) – (4) Diff.	(5) Low Follow	(6) High Follow	(5) – (6) Diff.	(7) Low Follow	(8) High Follow	(7) – (8) Diff.
Variables	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)
Deficient	0.022**	0.009	0.013				0.049***	−0.012	0.061***			
	(1.81)	(1.06)	(0.74)				(2.67)	(−1.02)	(2.65)			
Deficiency_Rate				0.044**	0.002	0.042*				0.077***	−0.021	0.098***
				(2.12)	(0.11)	(1.46)				(2.83)	(−0.99)	(2.83)
Controls	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Year Fixed Effects	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Industry Fixed Effects	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Observations	479	385		479	385		331	279		331	279	
Adjusted R^2	17.4%	20.3%		17.5%	21.1%		23.2%	26.7%		22.4%	27.9%	

Panel B: Material Weakness

	Full Sample						Subsample of SEOs within Two Years of an Inspection Report					
	(1) MW = 1	(2) MW = 0	(1) – (2) Diff.	(3) MW = 1	(4) MW = 0	(3) – (4) Diff.	(5) MW = 1	(6) MW = 0	(5) – (6) Diff.	(7) MW = 1	(8) MW = 0	(7) – (8) Diff.
Variables	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)	Coef. (t-statistic)
Deficient	0.076***	0.014**	0.062***				0.100***	0.017**	0.083***			
	(2.68)	(2.17)	(2.44)				(2.71)	(1.80)	(2.55)			
Deficiency_Rate				0.083*	0.021**	0.062				0.121**	0.018	0.103**
				(1.56)	(1.90)	(1.27)				(1.90)	(1.16)	(1.82)
Controls	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Year Fixed Effects	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Industry Fixed Effects	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Observations	129	735		129	735		100	510		100	510	
Adjusted R^2	17.5%	16.5%		15.1%	16.8%		21.3%	21.3%		14.2%	21.3%	

(continued on next page)

TABLE 7 (continued)

Panel C: Going Concern

	Full Sample						Subsample of SEOs within Two Years of an Inspection Report					
	(1) GC = 0	(2) GC = 1	(1) – (2) Diff.	(3) GC = 0	(4) GC = 1	(3) – (4) Diff.	(5) GC = 0	(6) GC = 1	(5) – (6) Diff.	(7) GC = 0	(8) GC = 1	(7) – (8) Diff.
Variables	**Coef. (t-statistic)**	**Coef. (t-statistic)**	**Coef. (t-statistic)**	**Coef. (t-statistic)**	**Coef. (t-statistic)**	**Coef. (t-statistic)**	**Coef. (t-statistic)**	**Coef. (t-statistic)**	**Coef. (t-statistic)**	**Coef. (t-statistic)**	**Coef. (t-statistic)**	**Coef. (t-statistic)**
Deficient	0.019**	−0.021	0.040*				0.019**	−0.003	0.022			
	(2.43)	(−0.69)	(1.30)				(1.70)	(−0.06)	(0.51)			
Deficiency_Rate				0.035***	−0.049	0.084**				0.033**	−0.050	0.083*
				(2.76)	(−1.18)	(2.00)				(1.80)	(−0.81)	(1.42)
Controls	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Year Fixed Effects	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Industry Fixed Effects	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Observations	663	201		663	201		470	140		470	140	
Adjusted R^2	17.9%	18.9%		17.8%	20.4%		21.0%	35.1%		21.2%	39.1%	

***, **, * Indicate significance at the 0.01, 0.05, and 0.10 levels (one-tailed if in predicted direction, two-tailed otherwise), respectively.
In Table 7, *SEO_Discount* is regressed on our variables of interest (*Deficient* or *Deficiency_Rate*) and control variables for the sample of firms audited by triennially inspected auditors. In Panel A, firms are separated based on analyst following (above or below the median). In Panel B, firms are separated based on the presence of a material weakness in the firm's internal control over financial reporting. In Panel C, firms are separated based on whether the auditor issued a GC report. All untransformed continuous variables are Winsorized at the 1st and 99th percentiles of their distributions. Year and industry (Fama-French's ten-industry classification) fixed effects are included in the model. Standard errors are robust to heteroskedasticity and clustering at the issuance year-quarter.
See Appendix A for variable definitions.

difference in coefficients is significant when *Deficient* is the variable of interest. Results are stronger when we restrict the sample to SEOs within two years of an inspection report (columns (5) through (8)). Overall, these results suggest that inspection results, a signal of audit quality, are more important for firms with poor systems of internal controls, a signal of inferior pre-audit, financial reporting quality.

Going Concern Report Modifications

For our final cross-sectional test, we split our sample on the presence or absence of a going concern (GC) modification. GC opinions may lessen the importance of inspection findings for two reasons. First, Bowler (2015) suggest GC report modifications constitute a form of disclaimer since auditors issuing GC modifications face lower litigation risk. In essence, auditors "walk away" from the audit engagement and exert lower effort (Bowler 2015). Along these lines, Aobdia (2019) finds that GC engagements are positively correlated with engagement-level PCAOB inspection findings. Second, Willenborg and McKeown (2000) find that IPOs by firms with GC modifications suffer less first-day discounting, indicating that this signal actually reduces *ex ante* uncertainty/information risk. This reduction of risk occurs because investors' concerns about a potential Type II error (whereby the auditor fails to modify the report of a company that subsequently declares bankrupt) is eliminated. The absence of a going concern modification may intensify investors' auditor-related information search activity since there is greater *ex ante* information risk, particularly with respect to a Type II error (Willenborg and McKeown 2000).

To test this final prediction, we partition our sample based on whether the client receives a GC modification and present results in Table 7, Panel C. Consistent with our predictions, the coefficients on *Deficient* and *Deficency_Rate* are larger for firms that did not receive a GC modification. These differences are significant in three out of four instances.

Selection Bias

While inspection report results are relatively exogenous with respect to SEO discounting, we recognize that firms choose when to conduct SEOs, or self-select into our sample. To evaluate whether selection bias affects our inferences, we use a Heckman selection model to simultaneously evaluate the likelihood of conducting an SEO in a given fiscal year and the SEO discount. To model the likelihood of conducting an SEO, we identify all firm-year observations audited by the triennial auditors in our sample. This yields a sample of 9,887 total observations. To predict the SEO, we measure all firm- and auditor-level controls used in our primary specifications as of the fiscal year and predict the likelihood of an SEO in the subsequent year. We supplement these estimates with three market-level variables that we believe satisfy the exclusion restrictions (Lennox, Francis, and Wang 2012). Specifically, we include the 12-month trailing market return (as of fiscal year end), the percent change in overnight lending rates, and overall market sentiment (Baker and Wurgler 2007). For the SEO discount model, we consider two different specifications, one that includes only firm- and auditor level controls (which are measurable for all observations), and one that includes those controls plus those measurable only for SEO firms.

We use maximum likelihood estimation to simultaneously estimate both equations as discussed in Tucker (2011). In untabulated results, we find a strong, negative association between *Deficient* and the likelihood of conducting an SEO. More importantly, we continue to find a strong, positive association between *Deficient* and *SEO_Discount*. In sum, this evidence suggests our results are unlikely driven by selection bias.[25]

VI. CONCLUSION

We examine the relation between PCAOB inspection results and the cost of equity, as measured by discounting of seasoned equity offerings (SEO). We find a significantly positive relation between the presence of PCAOB inspection deficiencies and SEO discounting for the clients of triennially inspected auditors. For a sample of issuers audited by annually inspected auditors, we fail to find evidence that deficiencies reported in PCAOB inspection reports have a positive relation with SEO discounting. We interpret our evidence as consistent with market participants finding the inspection reports more informative about audit quality within the triennially inspected auditor stratum. Importantly, our results imply that registrants may benefit from hiring a triennially inspected auditor with a "clean" PCAOB inspection report.

[25] Lennox et al. (2012) suggest that, while more efficient, maximum likelihood estimation can produce results that are less robust. We perform a similar two-stage regression using the Heckman two-step procedure and find similar inferences, although the significance of *Deficient* declines (but remains significant at conventional levels).

Our study is subject to limitations, of which two warrant additional discussion. First, as our analyses are primarily cross-sectional in nature, our inferences rely on an association between deficient PCAOB inspection reports of triennially inspected auditors and SEO discounting. Consequently, while we view our evidence as consistent with a causal interpretation that PCAOB inspection reports affect the cost of raising equity capital, we recognize that other reasons may exist for the associations we document. However, even in the absence of causality, we view our evidence as informative, as it suggests that PCAOB inspection results successfully capture a relevant factor in SEO discounting. Second, as with any cross-sectional regression framework, we cannot fully rule out the possibility of an omitted, correlated variable.

Our study provides empirical evidence on the linkage between a firm's cost of raising equity capital and PCAOB inspection reports in a U.S. capital markets setting. For the small auditor segment, our findings support one of the stated goals of the PCAOB inspection process, which is a lower cost of capital for registrants. We believe our study provides a foundation for future research into the benefits accruing to firms employing a clean triennially inspected auditor. We encourage future research to further delve into the costs, benefits, and consequences of the PCAOB inspection process.

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APPENDIX A

Variable Descriptions

Data source is in brackets. All untransformed continuous variables are Winsorized at the 1st and 99th percentiles.

Variable Name	Definition
SEO_Discount	Percentage difference between pre-offer-day closing price and the offer price [CRSP; SDC].
Deficient	An indicator variable that takes the value of 1 if the firm's auditor receives one or more GAAS deficiencies in its most recent PCAOB inspection report publicly released prior to the SEO issuance date, and 0 otherwise [PCAOB].
Deficiency_Rate	The number of audits with a GAAS deficiency scaled by the number of inspected audits in the most recent PCAOB inspection report publicly released prior to the SEO issuance date [PCAOB].
Prior_Deficient	An indicator variable that takes the value of 1 if the firm's auditor receives one or more GAAS deficiencies in the *second* most recent PCAOB inspection report relative to the SEO issuance date (i.e., the report prior to the one used to measure *Deficient*), and 0 otherwise. *Prior_Deficient* equals 0 if the auditor has only received one PCAOB inspection report at the SEO offer date [PCAOB].
Prior_Deficiency_Rate	The number of audits with a GAAS deficiency scaled by the number of inspected audits in the *second* most recent PCAOB inspection report relative to the SEO issuance date (i.e., the report prior to the one used to measure *Deficiency_Rate*); *Prior_Deficiency_Rate* equals 0 if the auditor has only received one PCAOB inspection report at the SEO offer date [PCAOB].
Accruals	Income before extraordinary items minus cash flows from operations, scaled by total assets [Compustat].
Restate_Auditor	The percentage of clients within an auditor's client portfolio that announce a restatement in the year prior to the SEO [Audit Analytics].
Restate_Client	An indicator variable equal to 1 if the client reported a restatement in the year preceding the SEO, and 0 otherwise [Audit Analytics].
Volatility	Standard deviation of daily stock returns over the 30 trading days ending 11 days prior to the offer [CRSP].
ln(Analysts)	The natural logarithm of the number of unique analysts issuing earnings forecasts for the firm in the year preceding the SEO [I/B/E/S].
InstOwn%	Total shares held by institutions divided by total shares outstanding at the end of year *t* [Thomson].
RelSize	Number of offered shares divided by the total number of outstanding shares prior to the offer [SDC, CRSP].
ln(Price)	The natural logarithm of the closing price on the day prior to the offer [CRSP].
CAR−	Equal to the cumulative abnormal return (*CAR*) over the five-day period prior to the offer if the *CAR* is negative, and 0 otherwise [CRSP].
CAR+	Equal to the cumulative abnormal return (*CAR*) over the five-day period prior to the offer if the *CAR* is positive, and 0 otherwise [CRSP].
Tick	An indicator variable that takes the value of 1 if the closing price on the day prior to the offer does not fall evenly on a dollar or $0.25 price increment, and 0 otherwise [CRSP].
Cluster	An indicator variable that takes the value of 1 if the offer price is set at a whole dollar value, and 0 otherwise [SDC].
NASDAQ	An indicator variable that takes the value of 1 if the firm was listed on the NASDAQ at the time of offer, and 0 otherwise [SDC].
ln(Size)	The natural logarithm of the market value of equity on the day prior to the offer [CRSP].
HighRank	An indicator variable that takes the value of 1 if the underwriter is one of the top nine underwriters according to Jay Ritter's underwriter reputation ranking system, and 0 otherwise. See https://site.warrington.ufl.edu/ritter/ipo-data/.
PublicShelf	An indicator variable that takes the value of 1 if the SEO is shelf-registered, and 0 otherwise [SDC].
FirmCommitment	An indicator variable that takes the value of 1 if the offering is a firm commitment offering, and 0 otherwise [SDC].
BestEfforts	An indicator variable that takes the value of 1 if the offering is a best efforts offering, and 0 otherwise [SDC].
SimOffer	An indicator variable that takes the value of 1 if the offering is a simultaneous offering in which the issuer offers the same security into an additional marketplace on the same date, and 0 otherwise [SDC].

(continued on next page)

APPENDIX A (continued)

Variable Name	Definition
OTCPink	An indicator variable that takes the value of 1 if the firm is traded over the counter, and 0 otherwise [SDC].
SecShares%	The proportion of total shares offered as secondary shares in the offering [SDC].
ln(Clients)	The natural logarithm of the number of clients audited by the auditor in year $t-1$ (the year preceding the SEO issuance date) [Audit Analytics].
ln(Tenure)	The natural logarithm of the number of years that the auditor has audited the client [Audit Analytics].
Big4	An indicator variable that takes the value of 1 if the firm is audited by a Big 4 auditor, and 0 otherwise [Audit Analytics].
Specialist	An indicator variable that takes the value of 1 if the auditor has the highest annual audit fees in a given two-digit SIC code and its market share in the industry is 10 percent higher than the next largest competitor, and 0 otherwise, per Reichelt and Wang (2010) [Audit Analytics].