Auditors' Role in Fair Value Monitoring: Evidence from Security-Level Data

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ABSTRACT

I study the role of the audit firm as monitor of its clients' fair value (FV) measurements. Specifically, using a setting in the insurance industry where I can identify fair values at the security level, I find that audit firms' security-specific FV experience is associated with increased consistency in valuations among clients holding the same security, consistent with audit firms developing FV expertise at the security level. Moreover, FV consistency is higher when the audit office is in a more concentrated market, and when the client is economically less important to the audit office, consistent with audit office market incentives affecting FV audit quality. My study sheds light on the mechanisms that shape the role of auditors in monitoring the increasingly important yet subjective FV determination process.

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I. INTRODUCTION

I study the economic forces that shape audit firms' monitoring of their clients' fair value (FV) measurements. FV measurements have become increasingly important and value-relevant in financial reporting, as both U.S. Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS) have increased the use of FV measurements in the past decade (e.g. Barth 2006, Barth and Landsman 2010, Christensen and Nikolaev 2013). Yet, one of the challenges of measuring FV is that FVs often require significant judgement by preparers, leaving more room for managerial manipulations (e.g. Kothari 2010). At the same time, the role of auditors as monitors of the FV determination process remains an underexplored area in the archival literature.[1] Prior research shows that auditors mitigate uncertainty by monitoring insiders, resulting in lower information asymmetries between insiders and outsiders (e.g. Jensen and Meckling 1976, Watts and Zimmerman 1983). In the context of FV measurements, this monitoring role can be especially important, as managers have increased scope for discretion over the values they report. However, auditors' role in mitigating these concerns can be reduced if they lack the ability or the willingness to influence managers' FV estimates. In this paper, I study this tension by examining how the audit firm's ability and incentives affect FV reporting outcomes.

Broadly speaking, audit outcomes depend on how audit firms resolve a fundamental tradeoff that they face in determining whether and to what extent to exert influence on clients' financial reports. On the one hand, audit firms have incentives to retain their clients. If audit firms exert significant influence over FV estimates, they risk alienating their client and being replaced by a competitor. On the other hand, regulatory scrutiny, litigation, and reputational pressure

[1] Experimental and survey based studies describe how auditors audit FVs. See Bratten et al. (2013) for a review of the experimental literature in this area.

incentivize audit firms to supply high quality audits and ensure that their clients' FV estimates are reasonable.[2] How audit firms resolve this tension depends on both their ability and willingness to influence their clients' proposed valuations.

An important challenge in assessing the role of an auditor in reporting outcomes is that the FV determination and auditing process is fundamentally unobservable, and it is empirically difficult to separate and control for outcome differences stemming not from the auditing process itself, but from differences in the underlying economic performance of the entity being audited (Dechow et al. 2010; DeFond and Zhang 2014; Leuz and Wysocki 2016). This difficulty is particularly important in FV because of the increased valuation discretion managers are afforded.

To overcome these challenges, I take advantage of security-level data to compare FV estimates for *identical securities held in the same period* by different clients of the same audit firm. I use security-level FV valuations that insurance companies (henceforth 'clients' or 'insurers') report in annual regulatory filings for their fixed income securities. Fixed income assets constitute a large part of insurers' portfolios, and make up a significant share of the fixed income market.[3] At the same time, prior research shows that insurers use the discretion allowed in fair valuing these securities to manipulate values to their advantage (Hanley et al. 2018). Motivated by the idea that an audit's role is to provide assurance that a client's financial statements appropriately reflect the underlying economics they represent (DeFond and Zhang, 2014, DeFond Lennox Zhang 2018), I study the factors affecting the extent to which clients of the same audit firm exhibit consistency in valuations of economically identical securities.

[2] For example, audit firms' regulator, the PCAOB, has continued to cite audit firms' FV audit practices in inspection reports. The PCAOB considered 32 percent of annually inspected firms' audits to be deficient in financial instruments' FV in 2015 (PCAOB 2020). Research finds these citations to be costly for the audit firm (Aobdia 2018, Shroff 2020).
[3] Fixed income assets are a large part of insurers' portfolios: they make up about 74% of the average insurer's assets in my sample. They also make up a significant share of the fixed income market: insurers own an estimated 20% of all corporate bonds in the US, making them an important investor in the bond market (Paulson and Rosen 2016).

I hypothesize that audit firms' *ability* to influence FV depends, at least in part, on developing expertise in FV auditing. In motivating this hypothesis, I rely on literature that highlights the value of task specific experience for expertise development and transfer, particularly in complex auditing areas (e.g. Arrow 1971, Bonner and Lewis 1990, Godfrey and Hamilton 2005, Cannon et al. 2014). I argue that expertise in fair valuing complex fixed income securities can be developed through experience at the individual security level. For instance, audit firms can better assess the appropriateness of a client's methodology through comparison and benchmarking across different clients that value the exact same complex security.[4] In addition, many audit firms have invested in establishing specific centralized mechanisms to address FV issues. As such, I hypothesize that audit firms' experience valuing a specific security strengthens their views on appropriate FVs for such a security, leading to higher consistency in the valuations of the same security across the different clients of an audit firm.

At the same time, it is possible that even if audit firms have the ability to discipline managers' FV estimates, they may be unwilling to do so. In other words, the audit firm's role in the FV determination process also depends on their *willingness* to exert influence and raise professional skepticism about client FV measurements. This willingness depends on the incentives they face to agree or disagree with management's estimates. Two important factors that are studied in the extensive prior literature on perceived threats to auditor independence are market concentration and client importance (see Defond and Zhang 2014 for a review of the related literature). Based on this literature, I hypothesize that the concentration of the audit market and the economic importance of a client to an audit office can affect FV audit consistency across different clients of the same audit firm.

[4] E.g. Clor-Proell and Nelson (2007) find that audit firms are apt to rely on examples in their work.

I operationalize the notion of consistency through a measure of dispersion between a client's valuation of a given security and the valuations of the same security at its audit firm's other clients holding the same security – i.e. the average absolute pairwise differences. Analyzing securities that do not have readily available market prices and thus allow for discretion in FVs, I study how this dispersion measure is related to an audit firm's experience and incentives.

First, I study how FV audit outcomes vary with two measures of audit firms' security-level experience: cross-sectional and time-series (tenure-based) experience. I find that estimates of security FV become more consistent as the number of clients that hold that security at the audit firm grows, consistent with cross-sectional experience helping drive expertise development at the security level. I do not find that the tenure of an audit firm with a security explains valuation consistency beyond cross-sectional experience, potentially because manager manipulations are more likely in the most volatile and unpredictable valuation assumptions that change from period to period. My research design includes security-year and audit firm-client-year fixed effects. This fixed effect structure controls for security characteristics such as liquidity or credit risk, audit firm-level attributes such as size, reputation, and audit firm-client matching (e.g., Cook et al. 2020).

Next, I study how FV audit outcomes vary with two proxies of audit firms' incentives that might compromise independence at the audit office level: market concentration and client importance. I find that lower market concentration at the audit office's MSA is associated with lower consistency, or higher dispersion, in FV estimates. These results are consistent with audit firms imposing greater constraints on their clients' accounting discretion when their clients have few alternative audit firms to choose from, possibly due to the lower opportunities for clients to replace an incumbent in concentrated markets (e.g. GAO 2003). I also find that being the largest client (by assets) at the audit office is associated with lower consistency in valuations with the

other clients at the audit firm who hold the same security, consistent with audit firms preferring to appease clients that are economically more important to the audit office.

In a final set of analyses, I examine the interaction between experience and measures of client and audit office incentives. First, I study whether audit firms' security-level experience mitigates the market concentration and client size based audit office incentives above. Having more reference points at the audit firm can constrain the extent to which audit offices can allow different treatment to clients. My results are consistent with higher cross-sectional experience mitigating concentration and client size based effects.

I also consider how expertise mitigates clients' incentives to overstate and understate the FV of their securities. I use risk based capital (RBC) as an inverse proxy for incentive to overstate securities' FV, and mutual company status as a proxy for incentive to understate.[5] I find that audit firms are more likely to apply their experience to lower (raise) valuations when clients have incentives to overstate (understate) the value of their assets, consistent with audit firms using their expertise to discipline clients' strategic reporting.[6]

By focusing on the extent of consistency among clients of the same auditor, I study an important necessary condition for an accounting system that accurately maps underlying economics into accounting values, while overcoming the measurement challenges associated with finding a proxy for the true underlying economics themselves. A potential concern could be that if audit firms are influencing clients towards some 'incorrect' value, this may be inconsistent with certain definitions of auditor expertise. In robustness tests, I show that the results hold using an

[5] More detail on the proxies can be found in section 3. Mutual companies are owned by their policyholders and have a mandate to pay out surplus profits to shareholders, incentivizing more conservative reporting.

[6] I also study whether the use of expertise varies with regulatory and litigation pressure that the audit firm faces. I do not find that controlling for the portion of an audit firm's securities owned by public clients, my proxy for greater regulatory scrutiny, significantly affects my results.

alternative measure that takes the average values of the same security in the economy as a proxy for the 'true value'.

Further tests show that the ability and incentives results are robust to using a materiality threshold, and to using auditors' experience with a security's issuer as an alternative measure of experience. I also show evidence that these results are concentrated in securities that allow for the most discretion in FV, i.e. where I expect audit firms to have an impact.

My study provides new evidence on the role of audit firms as monitors of FV measurements, providing insights into an area of auditing that, despite having been highlighted by regulators as a potential problem area for auditors' monitoring role, is understudied in prior archival literature. In recent work using the same setting, Hanley et al. (2018) show that managers of insurance companies manipulate the FV of their fixed income securities based on strategic requirements around minimum statutory capital levels. I study the role audit firms can have in mitigating this strategic reporting. In particular, my paper proposes and presents evidence on mechanisms through which audit firms influence their clients' FVs. I show that security-specific experience is associated with higher consistency of client FV valuations for the same security at the same audit firm at the same time, consistent with expertise development. Moreover, I find evidence that audit firms use their developed expertise in a targeted way to counteract client level incentives to use their discretion to strategically manipulate FVs.

My results add to recent papers investigating sources of auditor expertise beyond industry specialization (McGuire et al. 2012, Godfrey and Hamilton 2005). Specific to FV, Ahn et al. (2020) find that clients of audit offices with high level 3 market shares are less likely to egregiously misstate values. My study complements the evidence in Ahn et al. by investigating the role of audit firms in monitoring the more pervasive within-GAAP discretion afforded to managers in

determining FV estimates in financial statements. This type of discretion is used by managers in an opportunistic manner (e.g. Dechow et al. 2010, Ramanna and Watts 2012, Li and Sloan 2017), and is often cited as a concern in increasingly including FV estimates in financial statements (Kothari et al. 2010). In addition, my design takes advantage of cross sectional variation in securities while holding firm incentives constant, finds evidence of expertise at the national audit firm level, and adds insight into the relationship between such expertise and audit office incentives. In a related working paper using the same setting, Hogan et al. (2020) find that big 4 and market leader auditors respond in their planning to security-level cues about increased audit risk. In contrast, I provide evidence on expertise development and the relationship between experience and auditor and client incentives.

I also contribute to a long literature that examines how auditor incentives can threaten audit quality. An empirical challenge in that literature is that it is difficult to separate differences in audit outcomes driven by audit firms themselves from differences driven by the underlying economics of the client. According to DeFond and Zhang (2014), clients with innate characteristics that make it relatively easier to map their underlying economics to financial statements have a higher level of achievable audit quality compared to clients with hard to measure innate characteristics. Therefore, audit quality is intrinsically linked to the economics of the firm which are difficult to control for. In a setting that holds constant the underlying fundamentals, my results show that market structure based incentives and client importance based incentives are important in shaping FV audit outcomes, even in the face of increased regulatory focus. I find, however, that expertise can act to mitigate some of these adverse effects.

II. INSTITUTIONAL BACKGROUND

Public and private insurance companies writing business in the U.S. file annual audited Statutory Accounting Principles (SAP)-compliant financials with the National Association of Insurance Commissioners (NAIC).[7] The NAIC requires companies to disclose the FV of each fixed income security in their portfolio in schedule D of their submissions. As these schedules are a required part of the annual audited financial reports (SSAP 26R), they must be audited by an independent certified public accountant (NAIC Annual Financial Reporting Model Regulations).

Fixed income securities are an important part of insurers' balance sheets. Seventy-two percent of a typical insurance company portfolio is made up of fixed income securities, 68% of which are corporate bonds (with 15% of these privately placed), 18% are asset backed securities, and 9% are municipal bonds (Hanley et al. 2018). Further, insurance companies make up a significant share of the fixed income market: they own an estimated 20% of all corporate bonds in the US, making them an important investor in the bond market (Paulson and Rosen 2016).

Insurance companies in the U.S. are regulated primarily at the state level. State regulators are tasked with both market and solvency regulation, the latter of which involves assessing the financial position of insurers and ensuring that they are solvent and able to honor the promises made to policyholders. One of the primary tools with which regulators ensure solvency is though the risk based capital (RBC) ratio - the ratio of the insurer capital level to the minimum 'authorized' risk-based level. The denominator of this ratio is calculated using a prescribed insurance line specific formula based on the riskiness of the company's activities. Broadly, the main risk categories are: invested asset risk, insurance risk, disintermediation risk (i.e. lapse risk due to rising interest rates), business risk, and off-balance sheet risk. The numerator, so-called 'total adjusted

[7] As I discuss more below, the NAIC is a centralized standard-setting and regulatory support organization. As insurance regulation is done on a state level, the NAIC serves as a national body to support individual state insurance commissioners.

capital', consists of adjusted surplus and capital that the company holds according to the statutory accounting rules.

The FV of fixed income securities held on the insurer's balance sheet can have an impact on RBC in one of two ways, depending on whether the security is held at FV or amortized cost on the balance sheet.[8] If a security is held at FV, any changes in its valuation flow directly through asset values and, by extension, capital levels. If a security is held at amortized cost, SSAP guidelines dictate that it must be written down to its FV (i.e. recognize a loss) if there is an "other than temporary impairment" (OTTI), i.e. when "it is probable that the reporting entity will be unable to collect all amounts due according to the contractual terms." (SSAP 26R – Bonds). A write-down decreases the total adjusted capital and, therefore the RBC ratio (SSAP 26R). Thus, firms can avoid decreasing RBC ratios by avoiding write-downs.

If this ratio falls below 200%, the state regulator can begin to take actions against the insurer. However, insurance companies face pressure from investors and rating agencies to maintain RBC ratios well above the statutory minimum levels, as these ratios are viewed as indicators of general economic health.[9] As a result, typical capital levels are well above these minimum requirements (see, for example, Table 2 for summary statistics on RBC ratios).

The standard guiding FV measurement under statutory reporting is SSAP 100, which generally adopts FAS 157, the principle governing FV calculations in the GAAP framework.[10] Under this standard, security values that cannot be obtained from an independent pricing service

[8] Whether a security is carried at FV or amortized cost depends both on the holder and the credit risk of the security. The NAIC's Securities Valuation Office (SVO) assigns a credit quality ranking between 1 and 6 to each security, with SVO level of 1(6) indicating a low (high) risk. The NAIC requires that all SVO level 6 securities be carried at FV, and securities designated levels 3 and higher be carried at FV by P&C insurers.

[9] For example, all four credit rating agencies cite variations on the risk-adjusted capitalization or capital adequacy formula as a key reason affirming its highest rating for the insurer.

[10] With some modifications, like not considering non-performance risk in determining liabilities' FV (SSAP 100).

have to be priced using either broker-quoted prices (third party) or internally derived (self-estimated) prices based on the expected cashflow of the security discounted by an appropriate market rate. The FV of a security is categorized in one of three levels; level 1 securities are ones that have "observable, quoted prices for identical assets or liabilities in active markets". Level 2 securities have "quoted prices for similar assets or liabilities in active markets [or] quoted prices for identical or similar assets in markets that are not active". Level 3 securities have "unobservable inputs for the asset or liability" (FASB FAS 157).

FV Effect on GAAP Reporting

While GAAP reporting, contrary to statutory reporting, does not require firms to report FVs at a granular security level, insurers are required under GAAP to report the FVs of their securities aggregated at the asset class level. This information is found in a Fair Value footnote to the financial statements. GAAP does not prescribe specific FV methodologies for valuation, instead providing general principles and several approaches to choose from (FAS 157). Conversations with auditors and evidence in Hanley et al. (2018) both indicate that insurers use the same FVs for both purposes, such that auditing of these fair values has an impact on GAAP financials as well. According to GAAP rules, whether securities are held at FV on the balance sheet depends on their classification (held to maturity (HTM), available for sale (AFS), or Trading). AFS and Trading securities are held at FV, and any changes in values flow through Other Comprehensive Income (OCI) and income, respectively.[11,12] Even small fluctuations in asset FV can have a comparatively larger effect on equity due to the amplification effect of high leverage in insurance companies. This can have knock-on effects on the company's real activities, such as

[11] Few securities are classified as Trading by insurers.

[12] An SEC study from 2008 studies the proportion of assets held at FV on the balance sheet at a variety of financial companies. It found that insurers hold the highest proportion of their assets at FV on the balance sheet at 71% (for reference, banks held 31%) (https://www.sec.gov/files/marktomarket123008.pdf).

their ability to compete in the product markets, as insurance products are typically priced with certain return targets.

How Audit Firms Audit FV Estimates

Security holding decisions are made by insurer clients independently of their auditors, such that audit firms are often auditing the same securities at the same time at different clients, based on the individual portfolio decisions of their clients. When auditing their clients' security portfolios, survey evidence suggests that audit teams work most often with internal specialists in auditing FVs (Cannon and Bedard 2017). Indeed, the PCAOB has observed that many, particularly larger, audit firms "have implemented centralized approaches to developing independent estimates of the fair value of financial instruments" (PCAOB 2017), creating a national team of internal valuation specialists, called the pricing desk.

Within the audit firm, audit teams tailor audit procedures based on the estimation risk inherent in each security. Low risk portfolios are generally checked against an external pricing service *different* from the one used by the client. Small portfolios are wholly checked, whereas larger portfolios are statistically sampled to ensure a representative sample of securities is audited.

High estimation risk securities typically do not have a second pricing source (i.e. one the client has not used), or are broker or client-estimated. In these cases, the pricing desk works to model the value of the securities and derive an estimated acceptable range for FVs, which can be smaller than typical materiality thresholds. The statistical sampling, too, becomes narrower for these securities to ensure that the audit covers securities across different asset classes, brokers, model types, and other characteristics.

Smaller audit firms differ from the larger firms discussed above, as they are likely to use external specialists more than a pricing desk (Griffith 2016; Glover et al. 2017; Kumarasiri and

Fisher 2011). In this case they follow Auditing Standard (AS) 1210, Using the Work of a Specialist (PCAOB 1994), which mandates that auditors must develop an understanding of the work performed by external specialists. Thus, the use of specialists does not take away the importance of auditor competency; in fact, Griffith (2016) finds that the value of specialists is undermined because audit teams are likely to make specialists' work conform to their own views.

III. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The limited evidence on whether audit firms have influence over their clients' FV estimations is mixed. An oft-cited piece of evidence is the fact that many PCAOB inspection reports cite audit firms specifically for deficient FV auditing practices. However, Glover et al. (2019) find that the difference between inspector and auditor values may be at least partly driven by a lack of clarity of the inspection process rather than deficiencies in the FV process itself. A plausible explanation for the mixed results is that audit firms' influence on the FVs they audit is not uniform, and can vary at the office, client, and even security, level.

In general, audit outcomes depend on how audit firms resolve a fundamental tradeoff that they face in determining whether and to what extent to exert influence on clients' proposed valuations of assets that are fair valued. [13] On the one hand, audit firms have incentives to retain their clients. The opaque and subjective nature of FV can provide a good opportunity to do so by allowing hard-to-detect within-GAAP discretion in valuations. On the other hand, audit firms face regulatory, litigation, and reputational pressure to ensure the quality of FVs (DeAngelo 1981, Palmrose 1988). Indeed, the PCAOB has applied continued pressure on audit firms' FV audit practices through inspection citations, which are costly for the audit firm. In addition to direct fines

[13] While managerial opportunism has been the focus of worries with respect to the discretion allowed in FV, it is possible that auditors may also play an educational role for clients. The predictions are not markedly different in these cases.

to both the firm and the partner, and the threat of suspension of the ability to conduct business, prior literature finds that PCAOB inspection citations can be associated with loss of market share and a decrease in fee growth (Nagy 2014, Boone et al. 2015, Aobdia and Shroff 2017, Aobdia 2018, Shroff 2020*)*.[14] Moreover, in their survey of audit partners, Hanlon and Shroff (2020) find that auditors report that they tend to internalize these costs, and conversations with audit partner also reveal similar worry about PCAOB inspection outcomes. How audit firms resolve this tension depends on both their *ability* and *willingness* to influence their clients' proposed valuations.

Ability to Influence FVs

Christensen et al. (2012) argue that even small changes in model assumptions can create large differences in the end result, such that it is difficult for auditors to be confident in rejecting management's numbers. Thus, I hypothesize that audit firms are more likely to influence management's valuations if they can develop institutional confidence in what an appropriate valuation should be. It is unclear ex-ante whether audit firms can indeed develop such competencies. While the typical auditor education and background (i.e. CPA exams) has traditionally emphasized historical cost rather than fair value methodologies, auditors can and do employ valuation specialists (internal or external) in support of their audits. However, as specialists are not typically trained auditors, integration and coordination can be difficult, and audit quality may suffer as a result (e.g. Glover et al. 2019, Griffith (2016), Barr-Pulliam et al. 2020).

While prior literature studying auditor competencies has focused on industry specialization (e.g. Ashton 1991; Neal and Riley 2004; Reichelt and Wang, 2010) and geographic concentration (e.g. Choi et al. 2012), the complex and model-driven nature of FVs can complicate the acquisition

[14] The PCAOB considered 47 percent of the audits for annually inspected firms to be deficient with regards FVs in 2015, with the majority of these deficiencies (71 percent) occurring due to financial instruments (Acuitas 2017).

and transferability of feedback and knowledge (Bratten et al. 2013).[15] Moreover, as Minutti-Meza (2013) points out, typical expertise measures that rely on market share as proxy cannot adequately control for the confounding effect of client size on common audit quality measures.

Experimental and survey based evidence suggests that auditors find it difficult to determine the appropriateness of management assumptions, especially when independent data is unavailable (Bratten et al. 2013; Griffith et al. 2015; Cannon and Bedard 2017), and can be hampered by managers' first mover advantage in suggesting valuations (e.g. Bratten et al. 2013). In the archival literature, Ettredge et al. (2014) find evidence that higher proportions of level 3 assets require higher audit effort, as measured through increased audit fees. In a recent paper, Ahn et al. (2020) find evidence that an audit office having higher level 3 assets market share is associated with lower likelihood of FV related restatements and comment letters. Moreover, they show that the value relevance of FVs increases with audit office expertise. Along the same lines, a recent working paper by Barr-Pulliam et al. (2020) finds evidence that the proportion of a given accounting firm's clients' assets that are fair valued is negatively related to the use of FV adjusted discretionary accruals, net transfers to level 3 classification, and use of unrealized FV gains and losses to meet or beat thresholds.

Researchers have argued that task-specific knowledge is more important than general experience variables such as years of service in developing auditor competencies (Frederick and Libby 1986; Bonner and Lewis 1990). Literature shows that learning-by-doing is an important phenomenon in acquiring knowledge (e.g. Arrow 1971), so that it not only matters *how long* one has been doing something, but also *what specifically* one has been doing.[16] Based on this research,

[15] Recent papers investigate other sources of auditor expertise, particularly in complex subject areas (Godfrey and Hamilton 2005, McGuire et al. 2012)

[16] See Thompson (2010) for a review on the learning by doing literature.

as well as evidence that audit firms are apt to rely on examples in their work (Clor-Proell and Nelson 2007), I hypothesize that observing different valuations assigned to the same security at the same time can allow an audit firm to strengthen its view on an appropriate FV for a given security. As a result, greater experience with a security can reduce the acceptable range of valuations audit firms are willing to let their clients assign to the security, thereby increasing FV consistency for clients of the same audit firm.

H1: *Audit firms' security-specific experience is associated with increased consistency for an audit firms' clients valuing the same security in the same year.*

My prediction is motivated by the idea that an audit's role is to provide assurance that a client's financial statements appropriately reflect the underlying economics they represent (DeFond and Zhang, 2014). In this sense, *consistency* is an important necessary condition for an accounting system that accurately maps economic quantities into accounting measures. My identification strategy relies on the observation that economically equivalent securities should theoretically receive equivalent accounting treatment, and on the emphasis in both auditing standards and GAAP on counteracting bias in estimates (e.g. AICPA 2012). Of course, managers who independently value the same securities may not come up with *exactly* the same valuation. In this paper, I study sources of predictable variation in the extent to which there are differences in these valuations.[17]

Willingness to Influence FVs

Another determinant of the auditors' role in the FV process is the willingness of audit firms to influence their clients.[18] This willingness likely depends on the power dynamics in the relationship. Two variables that can influence these dynamics at the audit office level are audit

[17] In Table 7, I study the extent to which these differences are material (larger than 5% of the mean security value).
[18] A large literature studies engagement-level threats to audit quality, with mixed results. A challenge in that literature is that audit quality is jointly determined by the audit firm's work and the client's innate characteristics (DeFond and Zhang 2014). In this setting, I overcome this challenge by controlling for the underlying security.

market concentration and client importance. The evidence on how market concentration affects audit quality is mixed. On the one hand, audit firms operating in a highly concentrated market may be less worried about retaining clients, resulting in better audit quality. Indeed, Newton et al. (2016) find that clients in less concentrated markets engage in more opinion shopping, consistent with concentration improving audit quality. On the other hand, audit firms in highly concentrated markets may underinvest in improving audit quality since they worry less about keeping clients. Boone et al. (2012) find that higher market concentration, measured with HHI, is associated with a higher likelihood of meeting or beating forecast estimates for ex-ante below estimate firms. Moreover, Swanquist and Whited (2015) document that audit firms in more concentrated markets are less penalized for egregious failures (restatements) than those in less concentrated markets.[19]

The evidence on how client importance affects audit quality is similarly mixed. Audit firms are more financially dependent on large clients, thus reducing their willingness to influence those clients (Mautz and Sharaf 1961, DeAngelo 1981). At the same time, regulatory, litigation, and reputation risks are stronger for large clients. The evidence suggests that while the latter effect dominates for egregious violations, the balance is unclear for within-GAAP manipulations.[20]

In the FV context in particular, it is possible that increased regulatory scrutiny, both at the audit firm and at the client level, can change the balance of the countervailing forces to keep clients and avoid costly adverse outcomes. First, as previously stated, the PCAOB is highly interested in FV audits and issues many citations to audit firms for deficiencies in this area. Audit firms are sensitive to PCAOB citations (Church and Shefchik 2012, DeFond and Lennox 2017, Aobdia

[19] Even within the same study, Francis et al. (2013) find that earnings quality is higher when the Big 4 have a higher market share, but that high concentration within Big 4 is actually negatively associated with earnings quality metrics.
[20] Reynolds and Francis (2000) find that Big 5 audit firms are more likely to constrain accruals of their office's largest clients, and Gaver and Paterson (2007) find that insurers who have incentives to under-reserve are less likely to do so when they are important to a local office. On the other hand, Chung and Kallapur (2003) do not find a relation between abnormal accruals and measures of client importance, and Kanagaretnam et al. (2010) find that in small banks, audit fees are positively associated with LLP based earning management.

2018, Shroff 2020) so they may be particularly careful in treating different clients differently with respect to FV.[21] Second, FV is also important to state regulators of insurance companies.[22] There is some evidence in the literature that the presence of other client level monitors can affect audit firms' effort.[23] If the increased attention FVs draw at the client regulator level result in audit firms facing higher risk of lawsuits or reputation costs, the market concentration and size based threats to audit quality described above may play a lesser role. I state the hypothesis in the null form.

H2: *An audit office's market concentration and client importance are on average not associated with security-level valuation consistency.*

Interaction of Ability and Incentives

I next study the interaction of experience and incentives at both the auditor and the client level. At the auditor level, I expect that security level expertise at the auditor can act to constrain, or mitigate, the effect of incentives. I expect that having more reference points as to the FVs other clients at the audit firm assign the same security can constrain individual audit offices in responding to clients' incentives. That is, if the audit firm is reasonably confident in what an appropriate range for a security value should be, an audit office may find it more difficult to justify giving its largest client more leeway.

Similarly, audit firms with more security specific experience may be able to better constrain clients' incentives to use discretion the FV of the security (e.g. Hanley at al 2018, Sen and Sharma 2020). The literature has generally shown that managers use the scope for discretion

[21] Audit firms also face negative market share consequences from PCAOB citations (Abbott et al 2013; Nagy 2014; Boone et al. 2015), and the PCAOB can impose disciplinary proceedings and fines (Boone et al. 2015).
[22] Having to file security-level FVs with the regulator is itself one piece of evidence of FV's importance to regulators.
[23] Altamuro and Beatty (2010) find evidence of a substitution effect between internal controls and auditor presence, while Dal Maso et al. (2018) find that there are complementarities between bank regulation and accounting enforcement. In addition, Nicoletti (2018) finds that both auditors and regulators are associated with LLP timeliness.

inherent in various FV-based calculations in an opportunistic manner.[24] In the insurance setting in particular, Petroni (1992) finds that financially weak insurers have a tendency to bias their estimated liabilities downwards.

Hanley et al. (2018) show that having low RBC ratios provides an insurer with a particularly salient incentive to overstate FV. At the same time, mutual insurance companies likely have an incentive to understate their FVs, as mutual companies are owned by their policyholders, and are required to distribute any surplus among the owners-policyholders (Kreider 1972). Thus, to the extent that there are agency frictions in the firms, managers have incentives to record losses to lower the available surplus. Using proxies for auditor and client incentives, I study whether these incentives vary with audit firm security-specific experience.

H3a: *The effects of auditor level market concentration based and size based incentives vary with audit firm security-specific experience.*

H3b: *The effects of client level incentives to overstate/understate the FVs vary with audit firm security-specific experience.*

IV. DATA AND SAMPLE SELECTION

Table 1 presents the sample selection procedure. To construct the sample, I use required statutory disclosures from the insurance industry that provide security-level information on the fair value at which an insurer's fixed income securities are held at the end of each calendar year-end. The National Association of Insurance Commissioners (NAIC), the state insurance standard-setting and regulatory governance body, requires private and public insurance companies to file audited annual regulatory statements. Insurers are required to report at each calendar year-end, the

[24] Ramanna and Watts (2012) and Li and Sloan (2017) show that managers strategically use goodwill impairments to manipulate earnings. Dechow et al. (2010) find that managers use discretionary gains in securitization as an earnings management tool. Hilton and O'Brien (2009) show opportunism with regards to delayed asset write-downs.

individual security level (CUSIP level) dollar FV of each fixed income security. This information is reported in NAIC Schedule D Part 1. I begin by collecting the FV, par value, input level (level 1, 2 3), SVO quality designation, and estimation source (self-estimated or through a third party) from this schedule for all fixed income securities owned by life and P&C insurers for the calendar years 2012 through 2017.[25] Following Hanley et al. (2018), I retain observations with a positive par value, FV, and purchase price. I use insurer financials (assets, income, capital, type of insurer) and audit firm information for the duration of the sample from the NAIC Five Year Historical and General Interrogatories forms respectively. I retain only insurers with positive assets.

I match insurers in my dataset with S&P Global Market Intelligence dataset to include additional information on the public/private status and the mutual/stock status of the company. To decide whether a group is public, I merge my data with the S&P Global Market Intelligence dataset, which includes information by company and group number. I use the 'Ultimate Parent SEC Exchange' field to assign a public status to a group as follows. If a group in my data is listed in the S&P database as having an SEC Exchange listed for the ultimate parent, then I deem it public. If a group is not listed in S&P, I go down to the company level and check whether each company within the group has an SEC Exchange listed for the ultimate parent.

Many insurance companies are part of the same 'group'. For example, for regulatory reasons, John Hancock Life Insurance Company files separately as John Hancock NY and John Hancock USA. Decisions regarding FV estimates are typically thought to be done at the group level (Hanley et al. 2018), and I verify that indeed there is little variation within insurers that belong to the same group in terms of the FV they assign to the same securities they hold.[26] Therefore, I

[25] All insurers report annual statutory reports as of December 31 each year.
[26] Insurers share securities within the group in 20% of cases while in 80% of the data, no two insurance firms within a group share a security. In the cases where multiple insurance firms own the same security, the differences in the FV they assign is miniscule.

combine my sample at the group-security-year level. To do this, I first identify security-years for which the number of holders in the group-year is greater than one. For these security-years, I remove groups that are comprised of insurers which own the same security but do not have the same audit firm because I need a one-to-one relationship between client firm and audit firm to identify an audit firm effect. I assign the audit office of the holder with the most total assets in the group as the audit office for the group. To combine security information, I sum the fair value, book value, and par value at the group-security-year level, and assign the mode of characteristics such as FV level and estimation source at the group-security-year level.

To combine firm financials at the group level, I sum the total assets, net income, and capital amounts across the individual members. In addition, I assign the public indicator to the group as follows: if at least one company in the group is public I assign the entire group as public under the assumption that the group decision making will be geared towards public incentives.[27] Lastly, I assign a group as mutual if all subsidiaries are mutual within the group. In the rest of the paper, I refer to 'client firm' and 'group' interchangeably.

Next, again following Hanley et al. (2018), I truncate at the 0.5^{th} and 99.5^{th} percentile of FV to limit errors, and I remove securities that held by fewer than five holders in my sample to reduce the effect of outliers. I remove non-standard CUSIPs from the data and entries that have missing values for the set of controls I use in my regression.

Lastly, I am interested in a sample of securities where I expect the audit firm-level monitoring improvement results to be most concentrated. Based on the institutional details described in section 2, these should be securities that are most likely to be sent to the centralized pricing desk, which are the most difficult to value securities that tend to have subjective values.

[27] Alternatively, I assigned public status to a group if the majority of the insurance firms in it were public, and found this approach yielded very similar results, with different assignments to only four groups in my data.

As a proxy for security complexity, my main sample consists of securities that were ever self-estimated at any client, *and* that were valued as a level 3 security at any client.

V. RESEARCH DESIGN

I begin by constructing a measure of security-level FV variation within an audit firm, $FV\ Dispersion_{iast}$. To do this, I first calculate the pairwise absolute value differences between a focal security *s* held by client *i* and every other instance of the same security held by clients who have the same audit firm *a* in year *t*. I then take the average of these pairwise differences for each security. I normalize FV per $100 of par value for ease of comparison. Mathematically,

$$FV\ Dispersion_{iast} = \frac{1}{N_I - 1} \sum_{j \neq i}^{N_I} \left| FV_{iast} - FV_{jast} \right| \quad (1)$$

This is my measure of dispersion in valuations within an audit firm, and I take lower dispersion to mean higher consistency in valuations. That is, the larger this security-level measure, the more leeway the client gets in valuing this security compared to other clients of the same audit firm. I use this dependent variable to estimate the following security-year level regression:

$$FV\ Dispersion_{iast} = \beta_1 Auditor\ Experience_{ast} + Controls_{iast} + u_{st} + v_{iat} \quad (2)$$

I create two measures of audit firm security-level experience. First, $Number\ of\ Securities\ at\ Audit\ Firm_{ast}$ represents, for each security, the number of times the audit firm audits that security in a given year across all its clients. This measure captures the value of seeing an *additional* security *this year* to the audit firm's ability to perform a high quality audit. Second, I create a measure of an auditor's security-specific tenure in line with prior literature that considers longer tenure as a possible measure of expertise with a security. I define an auditor's tenure with a security *s*, $Security\ level\ Tenure_{iast}$, as the difference between the current year and the earliest year of acquisition for security *s* reported by the clients of auditor *a* who hold this security. In this test I only include securities for firms that have not switched an auditor during my

sample period. This measure assumes that the client has had the same auditor for the entirety of that time period. To assess the robustness of this assumption, I create two alternative measures of tenure based on an assumed average length of the auditor-client relationship in the period before my sample begins. First, I assume that all securities were new to auditors as of 2009.[28] Second, I assume that all securities were new to auditors as of the beginning of my sample, which is 2012.

I control for a measure of audit office expertise in line with prior literature that considers the market share of an audit office as a proxy. $Audit\ Office\ Level\ 3\ MS_{ast}$ is a measure of the market share of level 3 securities at the audit office, calculated as the portion of all level 3 securities in the MSA that the audit office of the focal client firm sees. I also control for security-level characteristics that can vary at the client level such as the assigned FV level, the par value, whether the security is self-estimated, and the status of the security as one that must be carried at FV. I use a fixed effects structure that includes security-year and client-audit firm-year fixed effects. I use security year fixed effects to control for time variant and invariant differences in securities, such as liquidity and riskiness. I add client-auditor-year fixed effects to hold constant time variant and invariant characteristics of the auditor-client relationship.[29] This controls for audit firm level characteristics such as general audit firm quality, as well as observable and unobservable differences between clients that could lead to variations in the values clients assign within audit firm. For example, the propensity of the client to manage the financials could be related to its public/private status, its capital position, the aggressive nature of the manager, etc. The fixed effects structure also controls for aspects of the client-audit firm relationship, such as matching (e.g. Cook et al. 2020). In this way, my regression captures differences in audit firm experience

[28] I select 2009 because in my sample, the average probability of staying with the same auditor year over year is 78%. I use this percentage to derive an expected time with the same auditor of p/(1-p)=3.55 years in the period before my sample begins.

[29] Results are robust to including client-year and client-year fixed effects separately.

with a security within the same client relationship. I double cluster all analyses at the auditor-year and security-year level to take into account the fact that valuations are not independent within audit firm and within security. My main prediction is on the coefficient β_1, which I expect to be negative (i.e. the more securities an audit firm sees the more precise the valuations get).

Next, I add the role of incentives on top of the experience measures in equation (2).

$$FV\ Dispersion_{iast} = \beta_1\ Auditor\ Experience_{iast} + \beta_2\ Auditor\ Incentives_{ast} + \\ +Controls_{iast} + Controls_{ist} + \ u_{st} + \ v_{at} \quad (3)$$

I use two measures of audit incentives. First, I use a binary variable equal to 1 if the audit office is in a low concentration market, as measured through having an above median Herfindahl-Hirschman Index (HHI), defined as the sum of the squared audit office fair value market shares within the MSA in which the audit office is located. Second, I use a binary variable which is equal to 1 if the client is the largest client at the audit office, as measures through total assets. I use security-year and auditor-year fixed effects in this regression. I remove client fixed effects because the audit incentives are defined at the audit office level, and each client has a unique audit office. I then include an extensive set of controls at the client level. Following Hanley et al. (2018), insurer level controls include ROA, total assets, and the log of risk-based capital (RBC), defined as the ratio of statutory capital (that is, total capital held by the insurer) to required capital (i.e., capital required to be held based on company risk assessment) and described in further detail in Section II. In addition, I include an indicator for the insurer being public and for the type of insurer it is (life, P&C, or mixed – i.e. contains both life and P&C insurers). These characteristics are shown in Hanley et al. (2018) to be associated with insurers' strategic FV valuation.

VI. RESULTS

Descriptive Statistics

Table 2 presents descriptive statistics on the variables of interest and the controls used in the analysis. Panels A and B present statistics at the security and the insurer level, respectively. There are just over 80K insurer-security-years in the sample. The average par value for a security is $9.26M. The average difference from within audit firm mean at the security level is -$0.038 per $100 of par value. This small value is to be expected since the measure is a difference from the mean so mechanically should be close to zero.[30] The standard deviation, however, is larger, at $3.43 per $100 par, representing about $11.5 million dollars for an average insurance firm's portfolio in the sample.[31] The average dispersion (i.e. mean absolute value of the pairwise differences) for a security is $2.165 per $100 par with a standard deviation of $3.24 per $100 par. This translates to a mean of about $16 billion of dispersion over the entire sample period.

An audit office sees an average of 4.5 instances of the same security held by its different clients, while the average number of holders of a security in the overall economy is 17.6. Approximately 1.5% are classified as FV level 1, 76.8% as level 2, and 21.7% as level 3 assets. About 7.7% of securities must be held at FV on the balance sheet according to the NAIC. Lastly, approximately 96% of all securities in the sample are audited by Big 4 audit firms. The average market share of level 3 securities is 40.6%.

At the insurer firm level, Panel B shows that the sample contains about 2.2K firm-years. The average natural log of the risk based capital (RBC) measure is 2.2, and a similar median. The mean (median) RBC ratio is 11.7 (9.1), well above the 2 threshold for regulatory action. The average ROA is 2.1%. Public companies represent 25.4% of the insurers in my sample, and 56.9% are property and casualty insurers, 25.4% are life insurers, and the rest are 'mixed'. I define a

[30] It is not exactly zero because the measure is calculated before excluding firms that have non-missing control variables from the regressions.
[31] (3.43/100) * 36 average insurer securities * 9.26M security par

mixed group as consisting of both Life and P&C insurers. An example could be Allstate Insurance, which has both P&C and life operations.

Main Results

Table 3 presents results for security-level regressions described in model (2) that examine how within audit firm security-level value deviations are associated with the audit firm's security-level experience. Panel A uses the audit firm level cross-sectional measure of experience with a security, while Panel B layers on a time-series based measure of experience. Columns (1) and (2) of Panel A show that, controlling for time variant and invariant security, and client-audit firm characteristics, on average, the more instances of the same security an audit firm sees at the same time the lower the dispersion measure gets (t-stats of 2.15 and 3.65 respectively).

I also consider how the strength of regulatory and client firm incentives affect the mechanisms in the main results. First, audit firms may face stronger external pressure to align valuations across different clients as the number of holders grows, for example through an increased likelihood of these securities being included in an eventual PCAOB inspection or litigation risk. This could be an alternative, or a complementary reason that increased exposure at the security level is associated with higher consistency. Because the mandate of the PCAOB is to inspect only public clients' audit, I address this issue by including a measure for the percentage of the securities an audit firm sees that are held by public clients, i.e. those that are likely to face these pressures.[32] If audit firms are ensuring consistency for the sake of PCAOB inspections, I should see that consistency is increasing in the proportion of the securities held by public clients. Columns

[32] The mandate of the PCAOB is to inspect only public clients' audits, while litigation risk is increasing in the number of public, more than the private, clients (e.g., Johnstone and Bedard 2003; Venkataraman et al. 2008; Badertscher et al. 2014). Thus, I expect this channel to affect audit quality through public holders.

(3) and (4) of Table 3 Panel A show that the effect is not statistically significant both in the full sample and the restricted sample where the tenure variable is defined, respectively.

Panel B of Table 3 presents evidence using a measure of security-level experience that captures the auditor's tenure with a security.[33] The first three columns use a (standardized) measure of tenure which is the difference between the current year and the year the security is reported purchased by the insurance client. I do not find a significant tenure effect, but the main effect in Panel A remains.

The tenure measure in the first three columns assumes that the client has not switched auditors during this entire time, such that the experience of a client with a security is equal to the experience of its auditor. In the last two columns, I assess the sensitivity of the results to this assumption. In column (4) I censor any history with a security outside of my sample before year 2009, based the average length of the relationship between client and auditor in my sample.[34] In column (5) I censor any history with a security before 2012, the start of my sample period, as a conservative estimate. Overall, the results are consistent with the cross sectional measure being more statistically and economically significant in the sample.

I now consider the role that audit office level incentives play in determining the quality of client FV valuations. Panel A of Table 4 shows the result of regression (3). Column (1) of Panel A shows the effects of incentives only. I use two measures of audit office incentives; first, the concentration of the audit office, measured through an audit office MSA's HHI. I find that below median market concentration is associated with higher dispersion in FVs of the same security, consistent with audit firms being less likely to influence their clients if they are worried about

[33] These tests use a subsample of firms that did not switch auditors during my sample period.
[34] I select 2009 because in my sample, the average probability of staying with the same auditor year over year is 78%. I use this percentage to derive an expected time with the same auditor of p/(1-p)=3.55 years in the period before my sample begins.

losing them. Similarly, being the largest client at the audit office is associated with higher dispersion in FVs, consistent with audit firms' incentives to keep the largest client.

Column (2) of Panel A presents evidence for both expertise and incentives together in a single regression. The independent variables are standardized, so that the coefficients can be compared. Panel B of Table 4 presents F-tests on the equivalence of the regression coefficients from column (2) of Panel A. The tests reject the hypothesis that the coefficient are equal, with the exception of the equality of coefficients on *largest office* and *number of clients holding the security*, which cannot be rejected. Economically, a one standard deviation increase in the number of clients holding the security (having above median experience in a security) is comparable to 5% (8%) of the difference between bond spreads for a AAA vs. AA rated bonds.[35] Similarly, a one standard deviation increase in market concentration (client size) incentives is comparable to 5.5% (7.2%) of the difference between bond spreads for adjacent rated bonds.

Next, I study whether audit firm expertise mutes audit firm and client level incentives or exacerbates them. Table 5 studies how the effect of auditor incentives varies when the audit firm have above median security-level expertise. I expect that having more reference points at the audit firm can constrain individual audit offices in responding to clients' incentives. As column (3) of Table 5 shows, expert audit firms exhibit higher FV audit quality for low concentration markets and for their largest clients, compared to non-expert auditor for the same security.

Table 6 studies whether expert auditors are able to counteract incentives for opportunism at the client level using two proxies of client level incentives to overstate FVs and understate FVs. The incentive to overstate is related to a client's statutory capital position (Hanley et al. 2018).

[35] I use historical weekly corporate bond yield data for bonds rated AAA and AA for the entire period available on Bloomberg - which is five years. I compare the difference in yields to the coefficient I document (dividing by the average maturity of 10 in my sample to convert to a comparable yield).

Insurers that have low RBC are likely to want to increase the value of their portfolios, or at least avoid writedowns. On the other hand, I argue that mutual companies are more likely to want to understate the value of their securities. Managers of mutual companies are required to redistribute surplus to the owners-policyholders in the form of premium credits at the end of the year. This, along with the weaker manager oversight and higher agency costs that characterize this ownership structure, can lead managers to want to 'hide' surplus earnings. Table B1 in Appendix B confirms that these measures are related to clients' extent of over- and under- statement, respectively.

Column (1) of Table 6 presents the cross-sectional results where the client's incentive to overstate the FVs is interacted with an indicator variable equal to 1 if the audit firm's experience with a given security is above the sample median. The dependent variable is a signed measure of the difference between the security FV and the within auditor mean for that security. The variable *RBC incentive to overstate* is defined as -1 times the natural log of RBC, such that the lower RBC the more incentive the client has to overstate. The results in column (1) are consistent with audit firm experience being used to influence the FV of securities in the opposite direction of the client incentive – i.e. audit firms are more likely to push back on client incentives to overstate when they have more experience with a security (t-stat 3.03). Columns (2) interacts the indicator variable for experience with an indicator for a client being a mutual insurer company. This is a proxy for incentive to understate, as discussed in section 3. Audit firms appear to use their expertise to influence clients in the opposite direction of their incentives for mutual insurers (t-stat 2.62). Collectively, the results indicate that audit firms use their security level experience to mitigate auditor office and client level incentives.

Additional Tests

I consider three alternate designs to support and assess the robustness of my main inferences. First, my identification strategy relies on the idea that identical securities should have identical FV valuations. While some innocuous variation may exist as a result of managers independently valuing securities, I note that there should not be predictable ways in which this variation is a function of auditor ability and incentives. Moreover, I rerun the main regression with an indicator for whether the deviation is outside of 5% of the mean security value as an alternative dependent variable. Table 7 shows that my inferences are robust to this measure, indicating the probability of larger differences is a function of the auditor's ability and incentives.

Second, I take advantage of another source of security-level experience as a robustness test. Auditing the issuer of a security can help audit firms develop experience helpful in valuing a security, particularly if the issuer is reporting its liabilities at FV. Using a sub-sample of data for which I can identify the auditor of the issuer, Table 8 presents evidence that auditors' security-level experience, measured though familiarity with the issuer (*Audits Issuer*), is related to lower dispersion in valuations of the issuer's securities' FV (column (1)), and the effect is incremental to the main effect in Tables 3 and 4 (column (2)). In column (3), I interact *Audits Issuer* with an indicator for whether the fiscal year end of the issuer falls at the end of the calendar year (when the holders' securities are valued). The t-statistic for the interaction is close to significant at the 10% level, and the coefficient is much higher than that for the main effect of *Audits Issuer*, which is suggestive, albeit weakly, that the effect may be driven by the auditor's experience in valuing of the security at the issuer.

Third, it is possible that while audit firms become more precise in their views, the views they come to are not correct, i.e. they become overconfident in some false understanding. Table 9 reruns the main analysis where the dependent variable is a measure of dispersion from *all other*

values of the same security in the economy as a proxy for the 'true value'. The table presents evidence that the main result is robust to this alternative definition, and the magnitude of the coefficient is also consistent with the main result in Table 3.

In additional analyses, I perform falsification tests to support the main inferences. As discussed in Section 4, the main sample consists of securities more likely to have subjectivity in valuations. Using the previously dropped securities (i.e. relatively simpler securities), I rerun the main analysis. Table 10 shows that the main documented effects are concentrated in the main sample, with largely insignificant coefficients in the less complex sample. The only statistically significant coefficient is found in the cross-sectional exposure variable in columns (1) and (3), but the sign is in the opposite direction and the magnitude of the coefficient is much smaller. Taken together, I interpret these results as consistent with the document effects being largely present where the opportunity for audit firm influence and cross-client comparison is strongest.

Lastly, while the dependent variable in the main tests measures consistency of valuations using an absolute measure, a potential concern could be that audits are only concerned about overstated, rather than understated, securities. Appendix B Table B2 shows that this is not in fact the case. I show evidence that audit firms who have experience push overstated securities' values *downwards*, but also push understated securities' values *upwards*. The same effect is observed for audit office market concentration and client size based incentives. This is consistent with audit firms influencing clients towards their views on security values from both sides. [36]

VII. CONCLUSION

[36] I also empirically test the maintained assumption in my analysis that audit firms develop views regarding what the FV of a security should be. In untabulated tests I confirm that there is a positive correlation between firm-level and auditor-level over(under)statement at the security and firm portfolio level, consistent with audit firms developing particular views on security-level valuations and influencing their clients' FVs towards these views.

This paper studies the role of audit firms in shaping their clients' FV determination process. In a signal as to the importance of the auditors' role in this process, the PCAOB recently adopted new standards that explicitly emphasize the responsibility of auditors in addressing potential management bias in FVs (PCAOB 2020). Using a setting that allows me to hold constant the underlying economics of the unit being audited, I study how audit firms' ability and willingness to influence clients' valuations shapes FV audit outcomes. Using a security-level measure of the extent to which clients' valuations of the same security at the same audit firm are consistent, I show that audit firms develop more precise views on appropriate FVs of complex securities the more instances of the same security that they are exposed to at their different clients. I show that this increased exposure is not fully explained by increased regulatory pressure, and that audit firms use their FV expertise to curb clients' incentives for misreporting, suggesting an expertise development mechanism.

Additionally, I study the impact of audit office market concentration based and client size incentives on the FV treatment economically equivalent securities receive at different clients. I find evidence consistent with audit firms enforcing more consistency among their clients in more concentrated markets and when clients are not the biggest client in their office, consistent with audit firms allowing within-GAAP deviations when they are worried about losing the client. I show that the effect of expertise mitigates the audit office's incentives related to size, but not to market concentration. Overall, my results add insight into the FV auditing mechanisms, an area of auditing that has been highlighted by the PCAOB as a particular area of concern for audit quality.

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TABLE 1

Sample Selection

The table presents the sample construction procedure for the main sample and the simpler securities.

Sample selection (2012-2017)	N	
All NAIC FV data from Schedule D Part 1 for years 2012-2017	5,597,001	
Require Positive par value, positive FV, positive price, positive assets	5,504,856	
Remove non-standard cusip values	5,417,273	
Collapse at group level	4,057,407	
Remove observations from group-cusip-years that are not unique at the auditor level	3,897,551	
	Main Sample	Simpler Securities
Main sample: securities that are ever assigned level 3 or ever self-estimated	166,416	3,731,135
Drop securities held by fewer than 5 clients in sample	121,586	1,992,369
Drop securities with missing independent variables	86,893	1,160,671
Drop securities with missing security level and firm level controls	80,593	1,049,645

TABLE 2

Descriptive Statistics

The table presents the descriptive statistics for variables used in the analysis. Panel A presents security level statistics and Panel B presents insurer level statistics. The final data is unique at the cusip-audit firm-year level. Detailed variable definitions are included in Appendix A. Values are winsorized at the 1 and 99 percentiles.

Panel A: Insurer-Security Years (2012-2017)

	Mean	SD	P10	P25	P50	P75	P90	N
FV Dispersion	2.165	3.240	0.047	0.250	1.024	2.664	5.506	80,593
Signed FV Differences	-0.038	3.427	-2.954	-0.724	0.000	0.798	2.892	80,593
Clients holding security	17.608	17	6	8	12	20	36	80,593
Clients holding security at auditor	4.466	3	2	2	4	5	8	80,593
Market Share of Level 3 Securities at Audit office	0.406	0.370	0.000	0.049	0.322	0.737	0.985	80,593
Security-level tenure at auditor (years)	4.733	4.625	0.000	1.000	3.000	7.000	11.000	80,096
Security-level tenure at firm (years)	3.938	4.196	0.000	1.000	3.000	6.000	10.000	80,096
Low market concentration	0.507	0.500	0.000	0.000	1.000	1.000	1.000	80,593
Largest Client at audit office	0.522	0.500	0.000	0.000	1.000	1.000	1.000	80,593
Group Par (millions)	9.256	12.650	0.398	1.300	4.921	11.902	24.150	80,593
Must FV	0.077	0.267	0.000	0.000	0.000	0.000	0.000	80,593
Self-Estimated	0.403	0.490	0.000	0.000	0.000	1.000	1.000	80,593
Big4	0.964	0.187	1.000	1.000	1.000	1.000	1.000	80,593
Level1	0.015	0.123	0.000	0.000	0.000	0.000	0.000	80,593
Level2	0.768	0.422	0.000	1.000	1.000	1.000	1.000	80,593
Level3	0.217	0.412	0.000	0.000	0.000	0.000	1.000	80,593

Panel B: Insurer Years (2012-2017)

	Mean	SD	P10	P25	P50	P75	P90	N
RBC	11.705	22.283	4.651	6.492	9.068	12.119	16.774	2,218
LN(RBC)	2.198	0.607	1.537	1.871	2.205	2.495	2.820	2,218
LN(Assets)	7.217	2.350	4.183	5.596	7.064	8.841	10.484	2,218
ROA	0.021	0.038	-0.004	0.007	0.019	0.034	0.054	2,218
PC	0.569	0.495	0.000	0.000	1.000	1.000	1.000	2,218
Life	0.254	0.436	0.000	0.000	0.000	1.000	1.000	2,218
Mixed	0.177	0.382	0.000	0.000	0.000	0.000	1.000	2,218
Big4	0.667	0.471	0.000	0.000	1.000	1.000	1.000	2,218
Public	0.254	0.435	0.000	0.000	0.000	1.000	1.000	2,218
Low market concentration	0.510	0.500	0.000	0.000	1.000	1.000	1.000	2,218
Largest Client at audit office	0.311	0.463	0.000	0.000	0.000	1.000	1.000	2,218

TABLE 3

Security Level Dispersion

PANEL A

The table presents security-year level results from regressing the absolute value measure in equation (1) on measures of audit firm experience. The dependent variable is the average of pairwise absolute value differences between the focal client's FV and the FV of other clients of the same audit firm who hold the same security. *Clients holding security at auditor* is the number of clients holding of a security at the audit firm at a given time. *Experienced Auditor* is an indicator variable equal to 1 if the auditor has more than the median number of clients for that security. *Portion of Securities under PCAOB supervision* is the proportion of securities that are held by public clients. Detailed variable definitions are included in Appendix A. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles.

Dependent Variable:	**FV Dispersion**			
	(1)	*(2)*	*(3)*	*(4)*
Clients holding security at auditor	-0.057**		-0.057**	
	(-2.15)		(-2.13)	
Experienced auditor		-0.095***		-0.095***
		(-3.65)		(-3.64)
Portion of securities under PCAOB supervision			-0.028	-0.027
			(-1.40)	(-1.38)
Audit office Level 3 MS	-0.031	-0.032	-0.030	-0.031
	(-0.86)	(-0.87)	(-0.84)	(-0.84)
Group Par	0.007	0.008	0.007	0.008
	(0.64)	(0.71)	(0.64)	(0.71)
Must FV	0.028**	0.027**	0.028**	0.027**
	(2.11)	(2.09)	(2.13)	(2.11)
FV Level	0.161***	0.161***	0.161***	0.160***
	(5.76)	(5.74)	(5.77)	(5.75)
Self-Estimated	0.073***	0.072***	0.072***	0.072***
	(4.46)	(4.40)	(4.44)	(4.38)
Security-Year FE	Yes	Yes	Yes	Yes
Auditor-Client-Year FE	Yes	Yes	Yes	Yes
Cluster	Auditor-year, Security-year			
Adjusted R-Squared	0.634	0.635	0.634	0.635
No. of Observations	80593	80593	80593	80593

PANEL B

The table presents security-year level results from regressing the absolute value measure in equation (1) on cross sectional and tenure measures of audit firm experience. The dependent variable is the average of pairwise absolute value differences between the focal client's FV and the FV of other clients of the same audit firm who hold the same security. In columns (1) to (3), *Security-level tenure* is a standardized measure of the difference between the current year and the reported year of purchase of that security. Columns (4) and (5) calculate the tenure measure based on different assumptions regarding the length of the relationship between auditor and client. Detailed variable definitions are included in Appendix A. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles.

Dependent Variable:	No Auditor Switches in entire history			No switches since 2009	All auditors new in 2012
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
Security-level tenure	0.017	0.033	0.033	-0.036	-0.108
	(0.18)	(0.36)	(0.36)	(-0.36)	(-1.23)
Clients holding security at auditor		-0.060**	-0.060**	-0.058**	-0.058**
		(-2.20)	(-2.18)	(-2.15)	(-2.15)
Portion of securities under PCAOB supervision			-0.028	-0.028	-0.028
			(-1.41)	(-1.40)	(-1.40)
Audit office Level 3 MS	-0.032	-0.032	-0.032	-0.032	-0.032
	(-0.88)	(-0.89)	(-0.87)	(-0.87)	(-0.87)
Group Par	0.007	0.007	0.007	0.007	0.007
	(0.61)	(0.63)	(0.62)	(0.63)	(0.63)
Must FV	0.028**	0.028**	0.029**	0.029**	0.028**
	(2.15)	(2.17)	(2.18)	(2.17)	(2.17)
FV Level	0.161***	0.161***	0.161***	0.161***	0.161***
	(5.76)	(5.76)	(5.77)	(5.78)	(5.77)
Self-Estimated	0.071***	0.072***	0.072***	0.072***	0.072***
	(4.41)	(4.43)	(4.41)	(4.41)	(4.40)
Security-Year FE	Yes	Yes	Yes	Yes	Yes
Auditor-Client-Year FE	Yes	Yes	Yes	Yes	Yes
Cluster	Auditor-year, Security-year				
Adjusted R-Squared	0.634	0.634	0.634	0.634	0.634
No. of Observations	80096	80096	80096	80096	80096

TABLE 4

Audit Office Incentives

PANEL A

The table presents the results from regression (3). The dependent variable is the average of pairwise absolute value differences between the focal client's FV and the FV of other clients of the same audit firm who hold the same security. *Low market concentration* is a binary variable that is equal to 1 if the audit office HHI is below median. *Largest Client at audit office* is a binary variable that is equal to 1 if the client is the largest at the audit office as measured by total assets. Detailed variable definitions are included in Appendix A. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles.

Dependent Variable:	**FV Dispersion**		
	(1)	*(2)*	*(3)*
Low market concentration	0.061***	0.061***	0.060***
	(4.73)	(4.74)	(4.74)
Largest client at audit office	0.079***	0.079***	0.078***
	(4.62)	(4.65)	(4.65)
Clients holding security at auditor		-0.057**	
		(-2.19)	
Experienced auditor			-0.102***
			(-3.85)
Audit office Level 3 MS	0.009	0.009	0.009
	(0.77)	(0.78)	(0.81)
Group Par	-0.013	-0.013	-0.012
	(-1.17)	(-1.17)	(-1.09)
Must FV	0.021*	0.022*	0.021*
	(1.89)	(1.92)	(1.90)
FV Level	0.103***	0.103***	0.103***
	(3.96)	(3.97)	(3.95)
Self-Estimated	0.023	0.024	0.023
	(1.38)	(1.41)	(1.39)
ln(assets)	-0.009	-0.009	-0.009
	(-1.06)	(-1.13)	(-1.16)
ln(rbc)	0.122***	0.121***	0.120***
	(3.55)	(3.55)	(3.51)
ROA	0.052	0.036	0.030
	(0.10)	(0.07)	(0.06)
Public	-0.089***	-0.089***	-0.089***
	(-2.80)	(-2.79)	(-2.77)
PC	0.094***	0.094***	0.097***
	(2.72)	(2.72)	(2.77)
Mixed	0.134***	0.136***	0.136***
	(5.11)	(5.09)	(5.12)
Security-Year FE	Yes	Yes	Yes
Auditor-Year FE	Yes	Yes	Yes
Cluster		Auditor-year, Security-year	
Adjusted R-Squared	0.626	0.626	0.627
No. of Observations	80593	80593	80593

PANEL B

This table presents the results from F-tests on the equivalence of coefficients in column (2) of Panel A.

Test on magnitudes	Coefficient equivalence F-test P Value
Low market conc. = Clients holding security at auditor	0.0004
Low market conc. = Largest client at audit office	0.0000
Largest client at audit office = Clients holding security at auditor	0.3825

TABLE 5

Relationship between Experience and Incentives

The table presents the results from cross sectional tests that study the interaction between experience and audit firm incentives. The dependent variable is the average of pairwise absolute value differences between the focal client's FV and the FV of other clients of the same audit firm who hold the same security. Detailed variable definitions are included in Appendix A. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles.

Dependent Variable:	**FV Dispersion**		
	(1)	*(2)*	*(3)*
Experienced Auditor	-0.095***	-0.095***	-0.095***
	(-3.76)	(-3.65)	(-3.77)
Experienced Auditor x Low market concentration	-0.029***		-0.034***
	(-3.19)		(-3.68)
Experienced Auditor x Largest client		-0.023**	-0.029**
		(-2.18)	(-2.60)
Audit office Level 3 MS	-0.030	-0.030	-0.024
	(-0.82)	(-0.81)	(-0.65)
Group Par	0.008	0.009	0.009
	(0.70)	(0.75)	(0.76)
Must FV	0.027**	0.028**	0.028**
	(2.09)	(2.18)	(2.19)
FV Level	0.161***	0.161***	0.160***
	(5.71)	(5.73)	(5.69)
Self-Estimated	0.074***	0.072***	0.074***
	(4.51)	(4.45)	(4.59)
Controls and Main Effects	Yes	Yes	Yes
Security-Year FE	Yes	Yes	Yes
Auditor-Client-Year FE	Yes	Yes	Yes
Cluster	Auditor-year, Security-year		
Adjusted R-Squared	0.635	0.635	0.635
No. of Observations	80593	80593	80593

TABLE 6

Relationship between Experience and Client Incentives

This table presents the results from regressing the signed security-year measure of FV differences, equal to the difference between the FV of a security and the average FV for the same security at other clients of the same audit firm, on the security-level experience of the audit firm interacted with incentives of the client to over- or understate. *Experienced auditor* is an indicator variable equal to 1 if the audit firm sees more than the median number of securities in a given year. *RBC incentive to overstate* is defined as -1 times the natural log of risk based capital so that higher values are associated with higher incentive to overstate. *Mutual incentive to understate* is a binary variable that is equal to 1 if the firm is a mutual company, 0 otherwise. Detailed variable definitions are included in Appendix A. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles.

Dependent Variable:	**FV Differences**	
	(1)	*(2)*
Experienced auditor	0.008	0.009
	(0.72)	(0.81)
RBC incentive to overstate x Experienced auditor	-0.047***	
	(-3.03)	
Mutual incentive to understate x Experienced auditor		0.140***
		(2.62)
Audit office Level 3 MS	-0.195***	-0.196***
	(-4.36)	(-4.39)
Group Par	-0.009	-0.009
	(-0.43)	(-0.43)
Must FV	-0.030	-0.030
	(-1.53)	(-1.53)
FV Level	-0.329***	-0.329***
	(-4.93)	(-4.93)
Self-Estimated	0.519***	0.519***
	(6.09)	(6.10)
Controls	included	included
Security-Year FE	Yes	Yes
Auditor-Client-Year FE	Yes	Yes
Cluster	Auditor-year, Security-year	
Adjusted R-Squared	0.146	0.146
No. of Observations	80593	80593

TABLE 7

Large Differences

The table presents audit firm-security-year level results from regressing an indicator for absolute pairwise differences (equation (1)) being above 5% of the mean within auditor valuation on the main variables of interest. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles.

Dependent Variable:	**Material Difference Indicator: Mean FV Dispersion>=5%**	
	(1)	*(2)*
Clients holding security at auditor	-0.011***	-0.009***
	(-3.66)	(-3.29)
Low market concentration		0.008***
		(5.97)
Largest client at audit office		0.008***
		(4.80)
Controls	Yes	Yes
Security-Year FE	Yes	Yes
Auditor-Year FE	No	Yes
Auditor-Client-Year FE	Yes	No
Cluster	Auditor-year, Security-year	
Adjusted R-Squared	0.475	0.475
No. of Observations	80593	80593

TABLE 8

Alternative Measure of Experience

The table presents the results from a regression of the main results with an alternative independent variable which captures whether the audit firm audits the issuer of the security. *Audits Issuer* is an indicator variable equal to 1 if the auditor also audits the issuers of the security. *Same Fiscal Year End* is an indicator variable equal to 1 if the issuer's fiscal year end is at calendar year end. Detailed variable definitions are included in Appendix A. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles.

Dependent Variable:	**FV Dispersion**		
	(1)	*(2)*	*(3)*
Low market concentration	0.085***	0.084**	0.084**
	(2.65)	(2.61)	(2.61)
Largest client at audit office	0.114***	0.111***	0.111***
	(3.50)	(3.54)	(3.56)
Audits Issuer	-0.074**	-0.068**	0.001
	(-2.25)	(-2.15)	(0.02)
Experienced Auditor		-0.117*	-0.117*
		(-1.78)	(-1.78)
Audits Issuer x Same Fiscal Year End			-0.021
			(-1.61)
Controls	Yes	Yes	Yes
Security-Year FE	Yes	Yes	Yes
Auditor-Year FE	Yes	Yes	Yes
Cluster		Auditor-year, Security-year	
Adjusted R-Squared	0.696	0.697	0.697
No. of Observations	3898	3898	3898

TABLE 9

Alternative Measure of Dispersion

The table presents the results from a regression of equation (2) and (3) with an alternative dependent variable which captures the unsigned difference between firm security FV and the average for the same security in the overall economy excluding the focal client's valuation, as a proxy for the 'true value'. Detailed variable definitions are included in Appendix A. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles.

Dependent Variable:	**FV Dispersion (economy-wide)**	
	(1)	*(2)*
Clients holding security at auditor	-0.050***	-0.039**
	(-3.29)	(-2.57)
Low market concentration		0.037*
		(1.86)
Largest client at audit office		0.101***
		(4.20)
Controls	Yes	Yes
Security-Year FE	Yes	Yes
Auditor-Year FE	No	Yes
Auditor-Client-Year FE	Yes	No
Cluster	Auditor-year, Security-year	
Adjusted R-Squared	0.516	0.489
No. of Observations	80593	80593

TABLE 10

Alternative Sample

The table presents the results from a regression of the main tests on a sample that includes both the main sample and securities that are likely to have less subjective valuations. The dependent variable is the average of pairwise absolute value differences between the focal client's FV and the FV of other clients of the same auditor who hold the same security. *Complex Securities* is an indicator variable equal to 1 for security-years that are part of the main sample, i.e. those that any client has deemed level 3 or self-estimated in that year. The rest of the sample consists of all the other securities that do not fit this definition. Detailed variable definitions are included in Appendix A. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles

Dependent Variable:	**FV Dispersion**		
	(1)	*(2)*	*(3)*
Clients holding security at auditor	0.007**		0.007**
	(2.50)		(2.47)
Clients holding security at auditor x Complex Security	-0.059***		-0.059***
	(-3.55)		(-3.68)
Low market concentration		-0.005	-0.005
		(-1.49)	(-1.49)
Low market concentration x Complex Security		0.047***	0.048***
		(5.53)	(5.65)
Largest Client at audit office		-0.003	-0.003
		(-0.83)	(-0.78)
Largest Client at audit office x Complex Security		0.033***	0.032***
		(3.65)	(3.54)
Controls	Yes	Yes	Yes
Security-Year FE	Yes	Yes	Yes
Auditor-Year FE	No	Yes	Yes
Auditor-Client-Year FE	Yes	No	No
Cluster	Auditor-year, Security-year		
Adjusted R-Squared	0.681	0.668	0.668
No. of Observations	1,130,238	1,130,238	1,130,238

APPENDIX A: DETAILED VARIABLE DEFINITIONS

VARIABLE	*DEFINITION*
FV Dispersion	The average of pairwise absolute differences in FV of the same security held by clients of the same audit firm.
Clients holding security at auditor	The number of instances of a security that the audit firm sees in the given year.
Security-level tenure	The difference between the current year and the purchase year of a security, adjusted for assumptions regarding the length of the client-auditor relationship.
Audit office Level 3 MS	The share of level 3 securities the audit office sees as a percentage of all level 3 securities in the MSA.
Signed FV Differences	The difference between the FV of a security and the mean FV of the same security at other clients of the same audit firm holding the same security.
Low market concentration	An indicator variable equal to one if the sum of the squared market shares (based on total FV) for the audit offices in the MSA is below median.
Largest Client at Audit Office	An indicator equal to 1 if the client is the largest at the audit office, as measured by total assets.
Portion of Securities under PCAOB supervision	The portion of a given security that is held by public clients at the audit firm.
Ln (RBC)	the natural log of RBC, which is the ratio of statutory capital (total adjusted capital) to required capital (authorized control level risk-based capital).
ln(Assets)	Natural log of the total assets of the group, as reported in NAIC financials.
ROA	The ratio of net income to assets.
Public	Indicator variable equal to 1 if the firm is public.
P&C	An indicator variable equal to 1 if the firm is in the property & casualty (P&C) insurance business.
Life	An indicator variable equal to 1 if the firm is in the life insurance business.
Mixed	An indicator variable equal to 1 if the firm has subs in both the property & casualty (P&C) and the life insurance business.
RBC Incentive to overstate	The natural log of RBC times -1.
Mutual	An indicator variable equal to 1 if the security is owned by a mutual company, 0 if by a stock company.
Group Par	The par value of the security as reported in Schedule D, Part 1.
Must FV	An indicator variable equal to 1 if the security must be carried at FV according to the NAIC guidelines.
FV Level	The level assigned to a security (level 1,2,3).
Self-Estimated	An indicator variable equal to 1 if the security is reported as self-estimated by the insurer.

APPENDIX B: ADDITIONAL TESTS

TABLE B1

Firm Incentives

The table presents supporting evidence for how firm incentives affect the extent of security-level overstatement. The dependent variable is the signed difference between the FV of a given security and the mean in the economy excluding the focal firm. Column (1) and (2) present results for the entire sample. Column (3) presents results for a subsample of only private firms, to which mutual firms are more comparable. Detailed variable definitions are included in Appendix A. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles.

Dependent Variable:	**FV Differences (economy-wide)**		
	(1)	*(2)*	*(3)*
RBC Incentive to Overstate	0.140***	0.139***	0.092*
	(3.35)	(3.32)	(1.93)
Mutual		-0.012*	-0.045***
		(-1.35)	(-4.80)
Group Par	0.571	0.598	-0.245
	(0.33)	(0.35)	(-0.08)
Must FV	-0.015	-0.019	0.050
	(-0.19)	(-0.24)	(0.43)
FV Level	-0.531***	-0.532***	-0.705***
	(-3.79)	(-3.79)	(-3.76)
Self-Estimated	0.614***	0.614***	0.642***
	(5.01)	(5.01)	(4.90)
ln(assets)	-0.002	-0.002	0.038*
	(-0.09)	(-0.11)	(1.97)
ROA	-1.528	-1.510	1.456
	(-1.37)	(-1.35)	(0.73)
Public	0.114	0.112	0.000
	(1.03)	(1.01)	(0.00)
PC	-0.173	-0.165	0.214
	(-1.57)	(-1.46)	(1.55)
Mixed	-0.446***	-0.446***	-0.245**
	(-4.94)	(-4.92)	(-2.35)
Auditor-Year FE	Yes	Yes	Yes
Security-Year FE	Yes	Yes	Yes
Cluster		Auditor-year, Security-year	
Adjusted R-Squared	-0.049	-0.049	-0.021
No. of Observations	80593	80593	46447

TABLE B2

Signed Results

The table presents the results from a regression of the signed measure of difference from within audit firm mean FV on the measures of expertise and incentives, comparing the subsample of securities that are overstated and understated compared to the audit firm security mean excluding the focal firm. The dependent variable is the difference between the FV of a security and the average FV for the same security at other clients of the same audit firm. *Overstated* is an indicator variable equal to 1 if the security FV is higher than the mean FV for the same security at the audit firm. Detailed variable definitions are included in Appendix A. *,**,*** indicate statistical significance at the 10%, 5%, and 1% level, respectively, using a two-tailed t-test. Values are winsorized at the 1 and 99 percentiles.

Dependent Variable:	**Signed FV Differences**		
	(1)	*(2)*	*(3)*
Clients holding security at auditor	0.504***		0.496***
	(11.64)		(12.23)
Clients holding security at auditor x overstated	-1.050***		-1.017***
	(-12.07)		(-11.94)
Low market concentration		-0.291***	-0.285***
		(-3.25)	(-3.09)
Low market concentration x Overstated		0.641***	0.635***
		(4.34)	(4.44)
Largest client at audit office		-0.400***	-0.341***
		(-7.18)	(-6.49)
Largest client at audit office x overstated		0.547***	0.441***
		(6.82)	(6.20)
Controls	Yes	Yes	Yes
Security-Year FE	Yes	Yes	Yes
Auditor-Client-Year FE	Yes	No	No
Auditor-Year FE	No	Yes	Yes
Cluster	auditor-year, security-year	auditor-year, security-year	auditor-year, security-year
Adjusted R-Squared	0.304	0.259	0.284
No. of Observations	80593	80593	80593

Test on sum of coefficients	Coefficient	Coefficient equivalence F-test P Value
Number of securities at auditor + Number of securities at auditor x overstated = 0	-0.521	0.0000
Low mkt. conc. +Low mkt. conc. x overstated = 0	0.350	0.0003
Largest client at audit office + Largest client at audit office x overstated = 0	0.100	0.0242