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Common auditors in M&A transactions

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Abstract

We examine merger and acquisition (M&A) transactions in which the acquirer and the target share a common auditor. We predict that a common auditor can help merging firms reduce uncertainty throughout the acquisition process, which allows managers to more efficiently allocate their capital, resulting in higher quality M&As. Consistent with our prediction, we find that deals with common auditors have higher acquisition announcement returns than do non-common-auditor deals. Further, we find that the common-auditor effect is more pronounced for deals with greater pre-acquisition uncertainty and deals involving acquirers and targets that are audited by the same local office of the common auditor. We also find that there is an increased probability of an M&A for firms with a common auditor. Collectively, our evidence suggests that common auditors act as information intermediaries for merging firms, resulting in higher quality acquisitions.

JEL Classification: G34; M41; M49

Keywords: Common auditor, Mergers and acquisitions, Uncertainty

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1. Introduction

This paper examines whether the quality of mergers and acquisitions (M&As) is higher when the acquiring firm and target firm share the same external auditor.[1] Our intuition is that the acquisition process often involves considerable uncertainty, including information asymmetry between bidders and targets regarding their operations, financial health, risk and prospects as well as uncertainty related to post-acquisition operational synergies. This uncertainty can negatively impact M&A quality by reducing managers' ability to identify the most profitable investment projects (Goodman et al., 2014). We argue that when an acquirer and target share a common auditor, the auditor can help reduce uncertainty along several dimensions.

First, auditors accumulate a considerable amount of information about their clients through conducting their audit procedures and through informal discussions with top management, allowing them to be helpful as information intermediaries both before the M&A (e.g., identifying potential merger counterparties and assisting with due diligence) and after the M&A (e.g., integrating accounting systems and internal controls).

Second, since each audit firm has its own unique style of interpreting and implementing accounting rules (Kothari et al., 2010), firms represented by a common auditor are likely to have more comparable financial statements (Francis et al., 2014), which leads to a reduction in uncertainty (De Franco et al., 2011). That is, a merging firm can better understand the assumptions and choices underlying accounting numbers in financial statements from other firms that share the same auditor. In turn, this leads to a better understanding (i.e., reduced uncertainty) of those firms' economics, as compared to those of firms using different auditors.

Finally, common auditors may be more likely to limit misreporting that asymmetrically

[1] Throughout the paper, acquisition "quality" refers to an acquisition's impact on firm value. To the extent an acquisition results in a greater increase in firm value, it is considered to be of higher quality (Bouwman et al., 2009; Goodman et al., 2014; Harford and Uysal, 2014).

benefits one party over the other. Prior research indicates that acquirers (Louis, 2004; Gong et al., 2008) and targets (Anilowski et al., 2009) manage earnings before M&As. Thus, auditors that audit both the acquirer and target face greater litigation risk, as the common auditor may be sued for earnings management undertaken by either party. Moreover, common auditors likely face greater scrutiny by stakeholders, given the potential for conflicts of interest. As Agrawal et al. (2013) show, deals with common M&A advisors attract securities class action lawsuits with greater frequency than deals with separate advisors. Thus, a common auditor has arguably higher incentives to limit misreporting ex ante, leading to reduced uncertainty regarding the accuracy of the reported numbers. By reducing uncertainty during the M&A process, common auditors can help firms allocate capital more efficiently, resulting in higher quality acquisitions.

To test whether common auditors are associated with higher quality M&As, we use a sample of 1,971 U.S. acquisitions between 1988 and 2010, where both the acquirer and the target are public firms and the acquirer obtains complete control of the target after the acquisition. To capture M&A quality, we use the acquisition announcement return following a large body of research (e.g., Asquith et al., 1983; Bradley et al., 1988; Cai and Sevilir, 2012; Agrawal et al., 2013; Goodman et al., 2014).

We find that M&As involving firms with a common auditor are of higher quality than M&As involving firms with different auditors.[2] Further, we test and find that the common-auditor effect is stronger when there is greater pre-acquisition uncertainty, proxied by targets with higher growth, more volatility, greater research and development (R&D) intensity, and larger bid-ask spreads. Our results are robust to the inclusion of numerous control variables for auditor, firm and deal characteristics, the merging firms' previous business relationships and geographical proximity, the existence of shared M&A advisors and/or directors, and additional

[2] We also examine two ex post, non-market based M&A quality measures (i.e., post-acquisition change in return on assets and the probability of a post-acquisition goodwill impairment) following Goodman et al. (2014), and we find qualitatively similar results. See Section 5.2 for more details.

testing to address endogeneity concerns related to auditor selection. Collectively, these results are consistent with common auditors reducing uncertainty during the M&A process, which leads to higher quality M&As.

To get a sense of the economic magnitude of the common auditor effect, consider that the announcement period abnormal returns are 1.064 percentage points higher in common-auditor deals than those in non-common-auditor deals. Given that the average market capitalization of an acquirer (target) in our sample is $8.99 billion ($870 million), this difference in announcement returns translates into an increase in the combined firm's market capitalization of $104.9 million.[3]

We then examine the three mechanisms (discussed above) through which common auditors reduce M&A uncertainty: (1) discussions with the M&A parties, (2) financial statement comparability, and (3) limited misreporting. With respect to the first mechanism, we employ two different empirical approaches. First, we show the common-auditor effect is larger when the acquirer and target use the same local office of the common auditor, as the auditor can more easily facilitate discussions between these clients if they are all in the same location. Second, we show there is an increased probability of an M&A for firms with a common auditor, as the auditor can both better match clients interested in engaging in M&A deals and reduce uncertainties throughout the process that might otherwise derail the deal.

To explore the second mechanism, i.e., financial statement comparability, we examine whether firms in common-auditor deals have more comparable financial statements than do firms in non-common-auditor deals. Using differences in year-specific total accruals (Francis et al., 2014) and the covariance of earnings across time (Barth et al., 2012; De Franco et al., 2011;

[3] That is, ($8.99 billion + $870 million) × 1.064% = $104.9 million. For comparison, consider that Dhaliwal et al. (2014) find a 0.7% higher return for acquirers in common-auditor M&As. While our return of 1.06% is a little higher, this might be somewhat expected given our sample involves acquisitions where the acquirer ends up with 100% ownership control after the acquisition instead of 50% (or more) control, as in acquisitions in the Dhaliwal et al. (2014) sample.

Lang et al., 2010) as proxies for comparability, we find that acquirers and targets with common auditors have more comparable financial statements than do those with different auditors.

We also find less misreporting for common-auditor mergers, the third mechanism, using performance-matched abnormal accruals (Kothari et al., 2005) and financial statement restatements (Bens et al., 2012) as proxies for misreporting. Combined, these results support our inferences that common auditors reduce uncertainty in the M&A process by improving (public and private) communication channels.

Finally, we examine whether the common-auditor effect is mitigated after the Sarbanes-Oxley Act (SOX). Section 201 of SOX prohibits auditors from engaging in non-audit services, such as M&A advisory and consulting services. To the extent auditors were engaged in non-audit services before SOX and common auditors used these services to help their clients engage in better acquisitions, the common-auditor effect should be mitigated post-SOX. However, we find that the common-auditor effect remains after SOX. This result suggests that the role of common auditors in reducing uncertainty is unlikely driven by non-audit function communications.

An important caveat to our findings is that, despite all our empirical analyses, discussions between auditors and their clients are unobservable. Thus, we cannot directly speak to the amount or type of information provided by common auditors during M&As. Given American Institute of Certified Public Accountants (AICPA) Rule 301 prohibits disclosure of confidential information without consent from the client, if auditor discussions do indeed contain relevant private information, it should be approved by the appropriate parties; that said, we recognize there is potential for conflicts of interest to arise. We leave this for future research and regulators to determine.[4]

Our study makes several important contributions. First, we add to the literature that examines the role of auditors in M&As. Prior studies generally examine the roles of acquirer

[4] Consistent with conflict of interest concerns, Dhaliwal et al. (2014) find that M&As with a shared auditor are associated with lower deal premiums and higher (lower) acquirer (target) event returns, which suggests shared auditors favor acquirers during M&As.

auditors and target auditors separately. For example, Louis (2005) studies the role of acquirer auditors in M&A transactions and finds higher acquisition announcement returns for non-Big 4 firms, while other studies find that targets with Big 4 auditors are more likely to get acquired (Xie et al., 2013) and have greater acquisition synergy and higher acquirer announcement returns (Golubov et al., 2012). In this study, we consider both acquirer auditors and target auditors in examining how sharing an auditor influences acquisition performance, providing new insights into the role of auditors in M&As.

Second, our paper contributes to the emerging literature on the real effects of accounting and auditing. In particular, prior research finds that accounting information facilitates more efficient corporate investment by reducing agency problems caused by information asymmetry (e.g., Biddle et al., 2009; Biddle and Hilary, 2006), by providing peer firms with more information (e.g., Badertscher et al., 2013), and by providing information to managers within the firm (Shroff, 2014; McNichols and Stubben, 2008). In addition, Kausar et al. (2014) show that firms' choice to obtain an audit helps lower information asymmetry and leads to more efficient investment. We contribute to this line of research by showing that common auditors reduce uncertainty in the M&A process, and thus improve M&A quality.

Third, we contribute to the large literature examining the effect of sharing an agent on economic outcomes. For example, the economics literature analyzes the use of a common agent as a way for competitors to achieve implicit collusion (e.g., Bernheim and Whinston, 1985; Gal-Or, 1985, 1986; Vives, 1990). In this setting, a common agent behaves passively and information transfers among competitors can be widely observed. In contrast, Villas-Boas (1994) and Gardiner et al. (2007) consider a setting where a common agent can act strategically, and examine conflicts that arise from sharing the same advertising agency and sharing the same real estate agent. More closely related to our study, Agrawal et al. (2013) examine the role of common investment bank advisors in M&As, and find that such deals are somewhat better for

acquirers than they are for targets. Similarly, Cai and Sevilir (2012) find that board connections favor the acquirer, but the manner of benefit is a function of the type of board connection. We contribute to this literature by providing evidence on the impact of sharing an auditor on M&A outcomes as well as the mechanisms through which these outcomes manifest.

Finally, our study complements concurrent work by Dhaliwal et al. (2014), who also examine the role of common auditors in M&A transactions. Our study delves into the mechanisms through which common auditors affect M&A outcomes. We find evidence consistent with the common auditor resolving information uncertainty between the parties in the transaction. Dhaliwal et al. (2014) examine whether one party reaps greater benefits from the deals and find evidence consistent with the acquirer capturing the benefits, as indicated by higher acquirer event returns. In addition, Dhaliwal et al.'s study suggests that target firm shareholders may be worse off because target event returns and deal premiums are lower. While Dhaliwal et al.'s wealth transfer result is certainly interesting, we find that the overall combined announcement return is positive. We caution, however, that the studies use somewhat different samples and tests, and thus the results cannot be fully interpreted together. We leave it to future research to further examine the various aspects and consequences of a common auditor in M&A transactions.

The rest of this paper is organized as follows. In Section 2, we discuss the M&A process as well as how a common auditor can help reduce uncertainties in that process. Section 3 describes the sample selection process, and Section 4 details the research design and empirical results. We present additional analyses in Section 5 and conclude in Section 6.

2. Motivation

Mergers and acquisitions represent significant corporate events that involve a thorough

and dynamic process that can vary from several months to several years to complete. In general, the M&A process starts with the identification of potential target candidates, which is a function of the firm's strategic objectives and requires some preliminary screening of the candidates. After a candidate is chosen, the firm engages in a lengthy due diligence process, which includes developing an extensive understanding of the target value as a stand-alone business as well as the value of potential synergies (Copeland et al., 2000). As GE Capital (2012) indicates,

> "Due diligence is not a courtship, a negotiation, or an inquisition; it's a fact-finding mission…[y]our business review of the target becomes a true audit, aimed at gaining a thorough understanding of the target's operations, assets, liabilities, and outlook. Your due diligence team will be looking to confirm the target's representations, validate its valuation, probe any legal, regulatory and compliance concerns, and affirm expected synergies and integration plans."

After obtaining considerable information through the due diligence phase, negotiations begin between the acquirer and target regarding the acquisition price, the deal structure, etc. When the negotiations are done and the deal is complete, the firms enter the final phase—the integration of the two firms. There are numerous factors for the acquiring firm to consider during the integration phase, such as the development and articulation of the vision for the new entity to employees and other stakeholders, legal and tax issues, human resource issues (e.g., employee retention/severance), and fixed asset allocations. Further, underlying all of these factors is the integration of the accounting information systems to capture these economic changes.

As becomes apparent through the above discussion of the M&A process, each phase contains significant uncertainty. From identifying merger partners to conducting due diligence to valuing and negotiating the deal to post-M&A integration, managers face uncertainty throughout the process and its negative impact on firm value. In particular, extant research indicates that uncertainty negatively affects acquirer announcement returns and post-acquisition performance (McNichols and Stubben, 2014; Erickson et al., 2012) and that having more firm-specific target information helps improve acquirer returns and the expected value of combined firms (Martin

and Shalev, 2009). Given M&As are typically large and important corporate transactions, managerial incentives are strong to combat adverse selection inherent in the identification and valuation of potential deals. As a result, firms often turn to investment bankers to serve as advisors during the M&A process. Consistent with uncertainty driving firms' decisions to retain M&A advisors, Servaes and Zenner (1996) find that acquirers hire advisors when the deals are more complex and when the acquirer lacks prior acquisition experience. Investment banks can help match acquirers with targets, advise acquirers on target valuation, and/or counsel firms in negotiating the deal price and structure (Goodman et al. 2014).

While firms hire investment banks to reduce uncertainty in an attempt to make better investment decisions, we argue that auditors can also serve to reduce uncertainty in the M&A process, even though they are not explicitly retained by firms to do so. In particular, auditors that audit both the acquirer and target (i.e., common auditors) can reduce M&A uncertainty through several channels. The first, and arguably most important, channel is the direct communication of information between the common auditor and the acquirers and targets, which can happen throughout the M&A process. As indicated to us in a private conversation with a Big 4 accounting partner, auditors often introduce their clients as potential acquisition partners. Thus, the auditor can facilitate discussions at the initial stage of the M&A process.

Auditors can also provide considerable value during the due diligence phase, which includes assessing the target firm's financial health, risks, prospects, etc. After all, many of these assessments (or similar assessments) are made by the auditor during an audit, so they can assist by providing both structure to the due diligence processes/analyses and insights into the target based on their extensive knowledge of the firm. In fact, further discussion with the Big 4 partner revealed that, with the consent of clients, audit team members of the acquirer and the target often

exchange information.[5] These discussions can be very useful in appropriately valuing firms, and thus in negotiating the deal.

The transfer of information between common-auditor clients continues even after the M&A as well. For example, common auditors can help integrate accounting information systems and internal control systems following deal completion, which is a nontrivial task that is vital to the success of the M&A. Since common auditors are familiar with these systems for both the acquiring firm and the target firm, they can more efficiently amalgamate the systems to better capture the firm's economics. Erickson et al. (2012) report increases in uncertainty after M&As, which contributes to acquirers' post-acquisition wealth losses. Common auditors can help reduce this uncertainty by assisting with the integration of the accounting information systems to better capture the underlying economics of the firm.

The second channel through which common auditors can reduce uncertainty is via financial statement comparability. Kothari et al. (2010) argue that each accounting firm has its own unique set of internal working rules that guide and standardize the audit firm's application of accounting and auditing standards.[6] Francis et al. (2014) argue that because these systematic differences exist across audit firms, financial statements are more similar for firms with a common auditor than they are for firms with different auditors. In addition, clients often seek guidance from their auditors when preparing financial reports, which further contributes to increased comparability of financial statements across firms with a common auditor.[7] Consistent with common auditors influencing

[5] The audit partner also notes that, because of the mandatory audit partner rotation rule, audit firms sometimes bring an audit partner from another office. Therefore, the audit partner of the acquirer (target) could be a member of the former audit team for the target (acquirer), which further reduces information asymmetry in M&As.

[6] Dichev et al. (2013) suggest that big audit firms do not pass authority downstream to the regional headquarters or onto the actual auditors as much as they used to do. Interpretations of rules in accounting firms are now made at the accounting firm level instead of from the field.

[7] As an example of auditors' influence on their clients' disclosure behavior, Blacconiere et al. (2011) show that Ernst and Young (E&Y) clients are four times more likely to disavow the reliability of mandated fair-value disclosures than are the clients of other audit firms. They note that E&Y included a disavowal as an illustrative disclosure in its Statement of

comparability between firms' financial statements, Francis et al. (2014) provide evidence that firms audited by the same auditor have more comparable earnings than firms audited by different auditors. By enhancing financial statement comparability, common auditors indirectly provide their clients information that other (non-client) firms may not be able to efficiently obtain. In particular, a client firm can better understand the assumptions and accounting choices underlying the financial statement numbers of other client firms. In turn, this knowledge leads to a reduction in uncertainty regarding those firms' economics.

The third channel through which common auditors can reduce M&A uncertainty is by limiting financial statement misreporting. Erickson and Wang (1999) find that acquirers boost earnings prior to stock-for-stock acquisitions in an effort to increase their stock price and reduce the number of shares issued in exchange. Louis (2004) and Gong et al. (2008) confirm these findings and show that the long-term post-acquisition underperformance of stock-for-stock acquirers and post-acquisition lawsuits can be attributed to pre-acquisition abnormal accruals. Anilowski et al. (2009) find that targets also engage in earnings management and sell via auctions to avoid the risk of detection. The authors also find that such deals result in higher wealth gains to target shareholders.

Given the incentives for both acquirers and targets to manage earnings before M&As, auditors that audit both the acquirer and target face greater litigation risk, as the common auditor may be sued for earnings management undertaken by either party. Moreover, common auditors likely face greater scrutiny by stakeholders, given their role as a common agent with the opportunity for conflicts of interest. As Agrawal et al. (2013) document, deals with common M&A advisors attract securities class action lawsuits with greater frequency than deals with separate advisors. To the extent common auditors face greater litigation (and potentially reputational) risk,

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Financial Accounting Standards 123 implementation guidance and encouraged clients to adopt the disclosure.

they have greater incentives to limit misreporting that asymmetrically benefits one party over the other, resulting in more transparent financial information and reduced uncertainty.

Collectively, common auditors can help reduce uncertainty throughout the various stages of the M&A process both directly through private communications with the acquirer and target and indirectly through more comparable and more transparent public financial reports. This reduction in uncertainty regarding the firms' underlying economics facilitates better matching and integration of acquirers with targets, which leads to higher quality investment decisions.

3. Sample Selection

To conduct our analyses, we obtain a sample of acquisitions from the Thomson Reuters Securities Data Company (SDC) U.S. Mergers and Acquisitions database. We identify all completed domestic mergers and acquisitions of public acquirers and public targets with announcement dates between 1988 and 2010. We start our sample period in 1988 because we obtain auditor information from Compustat, and its auditor coverage prior to 1988 is limited to Big 8 auditors. We exclude small transactions in which the deal value is less than $1 million and/or less than 1% of the acquirer's market capitalization prior to the announcement date. We also require the acquirer to control less than 50% of the target before the announcement and own 100% after the deal completion to ensure a complete change in control.[8] We further limit our sample to deals in which both the acquirer and the target have daily stock return data from the Center for Research in Security Prices (CRSP) and the annual accounting data and auditor information from Compustat for at least one year prior to the deal

[8] Untabulated results show that the common-auditor effect is more pronounced for deals where the acquirer owns no target shares before the deal, but owns 100% of the target after the deal completion. To the extent pre-acquisition uncertainty is greater for such deals, this evidence suggests that common auditors have a greater impact when there is more uncertainty.

announcement. Applying these filters leaves a final sample of 1,971 acquisitions, where 547 (1,424) acquisitions are classified as common auditors (non-common-auditor) deals.

Table 1, Panel A presents the distribution of our sample by deal announcement year. Consistent with the M&A literature, the number of acquisitions drops in the early 2000s from its highest level in the late 1990s. We also observe a significant slowdown following the 2007-2008 financial crisis. The patterns of common-auditor deals and non-common-auditor deals across years follow trends similar to that of the overall sample.

Table 1, Panel B shows the industry composition for the acquiring firms in our sample using the Fama and French 48 industry classification (Fama and French, 1997). Business services, computers, and pharmaceutical products are the most active industries in our sample in terms of the number of acquisitions. We observe a similar pattern in common-auditor deals and non-common-auditor deals. Given the variations in merger activity both across time and across industry, as observed in Table 1, we include both year and industry fixed effects in our multivariate analyses.

4. Research design and empirical results

In this section, we discuss our research design and empirical results related to our three main analyses. First, we examine the relation between common auditors and M&A quality. Second, we test whether the relation between common auditors and M&A quality is stronger when there is greater pre-M&A uncertainty. Finally, we analyze the three mechanisms through which common auditors reduce uncertainty in the M&A process, namely via (i) private discussions with the acquirer and target, (ii) enhanced financial statement comparability, and (iii) limited misreporting.

4.1. Common auditors and M&A quality

4.1.1. M&A quality measure

As discussed earlier, we predict that M&As with a common auditor are higher quality because common auditors are able to reduce uncertainty throughout the M&A process, which allows the parties to better identify profitable investment opportunities. We use the acquisition announcement return as our proxy for M&A quality following a large body of research (e.g., Asquith et al., 1983; Bradley et al., 1988; Kale et al., 2003; Cai and Sevilir, 2012; Agrawal et al., 2013; Goodman et al., 2014). In particular, following Bradley et al. (1988), Kale et al. (2003) and Cai and Sevilir (2012), we measure portfolio cumulative abnormal returns of the combined portfolio of the acquirer and the target around the acquisition announcement, *ANN_CAR*. We obtain the announcement dates from the SDC U.S. Mergers and Acquisitions database and estimate portfolio abnormal returns using the standard event study method developed by Brown and Warner (1985). We use the CRSP value-weighted return as the market return and estimate the market model parameters over the two hundred trading days ending two months before the merger announcement.[9] For each acquisition, we form a value-weighted portfolio of the acquirer and the target, with the weights based on their market capitalization at two months prior to the acquisition announcement date. To avoid double counting the acquirer's existing ownership in the target, we subtract the market value of the target equity held by the acquirer from the target's market capitalization. We then calculate the three-day *ANN_CAR*s over the event window (-1, +1), where event day 0 is the acquisition announcement date.

4.1.2. Empirical design – Common auditors and M&A quality

[9] Schwert (1996) finds that, on average, the target firm stock price starts to rise about two months before the initial bid announcement, suggesting investor anticipation or information leakage before the deal announcement. To minimize the potential bias in estimating market model parameters, our estimation period ends two months before the merger announcement.

To test whether acquisitions are of higher quality in common-auditor deals than in non-common-auditor deals, we estimate the following ordinary least squares (OLS) regression model:

$$ANN\_CAR = \alpha + \beta\, Common\ auditor + \gamma\, Controls + Year\ FE + Industry\ FE + \varepsilon, \quad (1)$$

where the dependent variable, *ANN_CAR,* is defined above. Our main variable of interest, *Common auditor*, is an indicator variable that equals one if the acquirer and the target share a common auditor and zero otherwise. We include calendar year fixed effects and Fama and French 48 industry fixed effects, and the *t*-statistics are based on standard errors clustered by acquirer.

Controls represents numerous control variables for auditor, firm, and deal characteristics shown by prior research to impact M&A quality, where all of the control variables are defined in the Appendix. Specifically, with respect to auditor characteristics, we control for whether the acquirer and/or target have a Big 4 auditor, *Big 4 Auditor*, as Louis (2004) finds that acquirers audited by non–Big 4 firms outperform those audited by Big 4 firms, and Xie et al. (2013) and Golubov et al. (2012) show that target auditor size is associated with various deal outcomes.[10] We also control for the industry dominance of auditors, *Auditor industry dominance*, as auditors with more industry expertise may lead to better acquisition outcomes (Craswell et al., 1995; Hogan and Jeter, 1999; Solomon et al., 1999; Owhoso et al., 2002). With respect to firm characteristics, we control for *Size, Operating cash flows* and *Tobin's Q* to capture a firm's growth opportunities and financing availability (Moeller et al., 2004; Dong et al., 2006). We also include *Leverage* to control for creditor monitoring (Maloney et al., 1993; Masulis et al., 2007) and *Pre-announcement stock price run-up* (Rosen, 2006) for both the acquirer and target. Finally, we include several commonly used deal characteristic control variables, i.e., *Relative*

[10] Throughout the paper, we use "Big 4" to mean Big 8, Big 6, Big 5, or Big 4 during our sample period. Big 8 (eight largest audit firms) became Big 6 in 1989 when Ernst & Whinney merged with Arthur Young to form Ernst & Young and when Deloitte, Haskins & Sells merged with Touche Ross to form Deloitte & Touche. The 1998 merger between Coopers & Lybrand and Price Waterhouse created Big 5, and the Arthur Andersen demise in 2002 resulted in Big 4.

deal size (Asquith et al., 1983), *Percentage of stock financing* (Travlos, 1987; Moeller et al., 2004), *Tender offer* indicator, *Hostile bid* indicator (Schwert, 2000), *Multiple bidders* indicator (Mitchell et al., 2004), and *High-tech firms* indicator (Masulis et al., 2007).

In addition to the auditor, firm and deal characteristic controls, we control for several additional variables. In particular, Morck et al. (1990) show that when the acquirer and target are similar, the acquisition has greater announcement returns. If firms with greater similarity tend to hire the same accounting firm as well, firm similarity could be a correlated omitted variable. Accordingly, we control for whether the deal is a diversifying acquisition, *Diversifying acquisition*, as well as the daily stock return correlation between the acquirer and the target prior to the acquisition announcement, *Corr(stock return),* following Fama and French (1992).[11]

We also include several controls for M&As where the acquirer and target may already have considerable knowledge of one another. In particular, we control for whether the acquirer and target have had a previous business relationship (i.e., strategic alliance or joint venture) in the three years before the acquisition, *Previous business relation*, as Higgins and Rodriguez (2006) find that acquisitions generate better announcement returns if they are preceded by strategic alliance activity between the acquirer and the target. In a similar vein, we also control for the acquirer's equity ownership percentage in the target before the deal announcement, *Toehold*.[12] Finally, we control for whether the acquirer's headquarters are in close geographic proximity to the headquarters of the

[11] We find that the mean *Corr(stock return)* is 0.21 (0.18) in common-auditor (non-common-auditor) deals. The difference is significant at the 1% level, suggesting acquirers and targets display greater similarity in common-auditor deals.
[12] Our results are robust if we instead define *Toehold* as an indicator variable for whether the acquirer owns any equity in the target prior to the deal announcement.

target, *Local deal*, as Uysal et al. (2008) find that acquirer announcement returns in local deals are higher than those in nonlocal deals.[13]

4.1.3. Descriptive statistics

Table 2 reports descriptive statistics for our M&A quality measure, *ANN_CAR,* in Panel A as well as our control variables in Panel B. As indicated in Panel A, the mean and median three-day *ANN_CAR*s for the full sample are 1.91% and 1.22%, respectively, and both are statistically significant at the 1% level. These positive portfolio returns are consistent with prior research (e.g., Andrade et al., 2001; Wang and Xie, 2009). Columns 2 and 3 present the subsample statistics where we split the full sample into common-auditor deals and non-common-auditor deals. As shown, the mean (median) difference in three-day *ANN_CAR* between common-auditor deals and non-common-auditor deals is 1.06% (0.30%), which is statistically significantly at the 1% (5%) level. To ensure these results are not sensitive to the length of the return window, we also examine five-day and seven-day announcement windows and continue to find significantly higher *ANN_CAR*s in common-auditor deals than in non-common-auditor deals. For our main analyses, we report the results using the three-day *ANN_CAR* for brevity.

As shown in Panel B of Table 2, the majority of acquirers (97%) and targets (94%) in our sample have Big 4 auditors. Moreover, common-auditor deals are more likely than non-common-auditor deals to involve Big 4 auditors for both the acquirer and the target. Target firms' auditors in common-auditor deals have more industry expertise, as they are more likely to be the dominant auditor in the two-digit standard industrial classification (SIC) industry. We also find that target firms are associated with lower operating cash flows in common-auditor deals and that such acquisitions are less likely to be hostile takeovers and less likely to have competing bidders.

[13] We use the SDC database to collect zip code data for acquirer and target headquarters. When SDC zip code data are missing, we collect the data from SEC filings on the Electronic Data-Gathering, Analysis, and Retrieval (EDGAR) database, and collect the data from Compustat for years before EDGAR.

In addition, acquirer and target returns are more highly correlated, acquirers own more of the targets' stock prior to the acquisitions, and acquirer and target headquarters are more likely to be located in the same geographical area in common-auditor deals than in non-common-auditor deals. We control for these auditor, firm, and deal characteristics in our analyses.

4.1.4. Multivariate analysis – Common auditors and M&A quality

Table 3 presents the results from estimating Equation (1) using OLS. In Column 1, we do not include any control variables and find that common auditors have a positive and significant effect on *ANN_CAR*. In Column 2, we include auditor, firm, and deal characteristic control variables as well as controls for firm similarity, previous business relations, and geographic proximity. Our baseline finding continues to hold with these control variables; the coefficient estimate for *Common auditor* is 1.064 and statistically significant at the 1% level, suggesting M&As involving firms with a common auditor have higher quality acquisitions.

The coefficients for the control variables are also consistent with findings in the literature. For example, we observe a negative correlation between acquirer size and announcement returns (Kimbrough and Louis, 2011; Golubov et al., 2012), acquisitions with greater relative deal size have higher announcement returns (Louis and Sun, 2010), highly stock-financed deals are associated with lower announcement returns (Louis, 2005), announcement returns are higher in tender offers (Golubov et al., 2012; Cai and Sevilir, 2012), and deals in which the acquirer and the target are in different industries are associated with lower announcement returns (Morck et al., 1990).

4.2. Common-auditor effect and uncertainty

We next examine the impact of common auditors on M&A quality conditioned on the amount of pre-M&A uncertainty. If common auditors are associated with higher quality M&As because they reduce uncertainty in the M&A process, then we should observe a larger common-

auditor effect when there is a greater degree of uncertainty before the M&A. To test this prediction, we adjust Equation (1) to include a proxy of uncertainty and interact it with the common-auditor indicator, as shown below.

$$ANN\_CAR = \beta_0 + \beta_1 Common\ auditor + \beta_2 Uncertainty + \beta_3 Common\ auditor * Uncertainty + \gamma\ Controls + Year\ FE + Industry\ FE + \varepsilon, \quad (2)$$

where *ANN_CAR* and *Common auditor* are defined previously. We predict that β_3 is positive, as this indicates that the common-auditor effect is larger when there is greater pre-M&A uncertainty. We focus on the acquirer's uncertainty regarding the target (rather than vice versa), because while the target faces some uncertainty regarding its asking price and the associated contract terms, the acquirer faces significant uncertainty regarding the target valuation in addition to determining its bid price and associated contract terms. Moreover, while the target no longer exists after the merger, the acquirer still faces considerable post-acquisition uncertainty associated with synergistic incorporation of the target (as outlined in section 2). Thus, common auditors can be much more helpful for acquirers than they can for targets in reducing uncertainty. Accordingly, we focus on uncertainty regarding the target.

Our first proxy for uncertainty is based on the target firm's sales growth. Smith and Watts (1992) argue that high growth firms are associated with a higher degree of information asymmetry. Thus, we expect uncertainty regarding the target to be more severe, and thus the common-auditor effect on acquisition quality to be more pronounced, when the target is growing at a more rapid pace. We define *Target sales growth* as the percentage change in the target's sales from the previous year.

Our second proxy for uncertainty is the stock return volatility of the target firm. Estimating the true underlying value of target firms that have higher stock return volatilities is more difficult (Officer et al., 2009; McNichols and Stubben, 2014), and common auditors could

play a more important role in such deals. We define *Target stock return volatility* as the daily stock return volatility of the target over the one-year period ending two months prior to the deal announcement.

Our third measure of uncertainty is based on the target firm's R&D intensity (Aboody and Lev, 2000; Huddart and Ke, 2010; Chen et al., 2010). Aboody and Lev (2000) argue that interpreting financial information is difficult for firms with high R&D intensity because (i) R&D investments are more unique than investments in tangible assets, (ii) no liquid market exists for R&D investments, and (iii) the information necessary to determine the value of assets that emerge from R&D investments is harder to obtain. We define *Target R&D intensity* as the ratio of current year R&D expenditure to sales in the year prior to the deal announcement.

Our fourth measure of uncertainty is the bid-ask spread of the target firm. The bid-ask spread is a proxy for the degree of information asymmetry because it represents one way that market makers protect themselves from expected losses in trading with more informed traders (Leuz and Verrecchia, 2000). Following LaFond and Watts (2008) and Khan and Watts (2009), we obtain daily bid-ask spread from CRSP and scale it by the midpoint of the spread. We define *Target bid-ask spread* as the average of the daily spreads of the target firm over the one-year period ending two months prior to the deal announcement. [14]

Table 4 presents the results from estimating Equation (2), where the results are based on using *Target sales growth*, *Target stock return volatility*, *Target R&D intensity*, and *Target bid-ask spread* as proxies for uncertainty in Column 1, 2, 3 and 4, respectively. In particular, the coefficient estimate for the interaction of *Common auditor* and the uncertainty proxies (i.e, β_3) is positive and

[14] Note that our uncertainty measures are potentially susceptible to endogeneity concerns. For example, target managers' disclosure behavior may affect the level of uncertainty measured by stock return volatility or bid ask spread. Similarly, managers' operating strategies may affect the firms' sales growth or R&D intensity. If factors that influence these decisions are correlated with the firms' choice to use a common auditor or result in a higher acquisition announcement return, our results may be biased.

statistically significant at the 5% level or better across all four specifications. The evidence in Table 4 suggests that common auditors have a greater impact on M&A quality when there is more uncertainty before the acquisition.[15]

4.3. Mechanisms of reductions in uncertainty

Next, we examine the three main channels through which common auditors reduce uncertainty in the M&A process: (i) discussions with the acquirer and target regarding the M&A, (ii) enhanced financial statement comparability, and (iii) increased reporting transparency.

4.3.1. Primary information channel - Discussions regarding M&A

The primary channel through which common auditors can reduce M&A uncertainty is via direct discussions with the acquirer and target. As discussed in section 2, common auditors can help reduce uncertainty throughout the M&A process, from assistance in the identification and matching of potential M&A targets to help during the due diligence phase with valuing the target to post-acquisition integration of information systems. Unfortunately, these discussions are not observable; as such, we employ two different empirical approaches. First, we examine whether the common-auditor effect is larger when the acquirer and target use the same local office of the common auditor. The intuition is that the auditor can more easily facilitate discussions between clients if they are in the same location as both the acquirer and the target. Second, we examine whether there is an increased probability of an M&A for firms with a common auditor. Since an auditor is much more knowledgeable about its own clients, it can not only better match clients

[15] We also test whether the sum of β_2 *and* β_3 are significant in each of the four specifications, and find that only in the first specification (using *Target sales growth*) is the sum statistically significant at the 10% level. Thus, there is weak evidence that uncertainty has a positive effect on announcement returns for common-auditor M&As (as opposed to just higher returns than those in non-common auditor M&As). One potential reason for this finding is that to the extent auditors can better identify targets that may be undervalued more because of their inherent uncertainty, greater target uncertainty could actually help acquirers with common auditors get better deals than they would otherwise.

interested in engaging in M&A transactions, but also reduce uncertainties throughout the process that might otherwise derail the M&A. Accordingly, we predict that if common auditors help facilitate information flow via discussions with their clients, there should be a higher probability of an M&A with other firms that share the same auditor.

To conduct our first analysis (i.e., same-office test), we collect auditor office location data from Audit Analytics, which provides audit office location data starting in 2002. For deals announced before 2002 and/or with missing auditor office data in Audit Analytics, we manually collect the data from the audit report in Form 10-K filings. Because Form 10-K filings are unavailable in the SEC EDGAR system before 1996, our sample is reduced to 1,591 observations. Of the 1,591 observations, 459 deals (28.8%) involve a common auditor, and 120 deals (7.5%) consist of a common auditor in the same local office. Using these data, we adapt Equation (1) by splitting *Common auditor* into two measures, *Same-office common auditor* and *Different-office common auditor,* where *Same-office common auditor* is an indicator equal to one if the acquirer and the target share a common auditor from the same local office and zero otherwise, and *Different-office common auditor* is an indicator equal to one if the acquirer and the target share a common auditor from different local offices and zero otherwise.

We report the results on same-office common auditors in Table 5. Column 1 reports the results from estimating Equation (1) using the reduced sample. We find that common auditors are associated with significantly higher combined announcement returns, consistent with the results in Table 3. In Column 2, we report the results from estimating Equation 1, where we split *Common auditor* into the two measures: *Same-office common auditor* and *Different-office common auditor*. While the coefficients on both variables are significantly positive, the coefficient on *Same-office common auditor* is greater than the coefficient on *Different-office common auditor*, and this

difference is statistically significant at the 10% level. This result suggests that while common auditors can enhance M&A quality, they are more effective at doing so when the acquirer and target are audited by the same local audit office.

To conduct our second analysis (i.e., common-auditor M&A likelihood test), we follow a method similar to that in Bodnaruk et al. (2009) in examining the probability of two firms engaging in M&A activities. Specifically, for each actual acquirer, we define the set of all potential acquirers as those covered by Compustat in the same three-digit SIC industry and of a similar size (within a 20 percent band of market capitalization).[16] We perform the same procedure for each actual target firm and find its corresponding set of potential target firms. We then identify whether a common auditor exists between each potential acquirer and each potential target, and we create an indicator variable, *Common auditor*, that equals one if the potential acquirer and the potential target in a given deal share the same auditor at the time of the deal announcement and zero otherwise. We then estimate a probit model in which the dependent variable is an indicator variable that equals one if an acquisition takes place between the potential acquirer and the potential target and zero otherwise.

Table 6 reports the marginal effects from estimating the probit regression. Column 1 includes only the year and industry fixed effects. In Column 2, we follow Bodnaruk et al. (2009) and include a number of control variables, including firm size, Tobin's Q, leverage ratio, ROA, sales growth, stock return, stock return volatility, and industry Herfindahl index of the potential merging firms. In both models, we find that sharing a common auditor significantly increases the likelihood of an acquisition. After controlling for other determinants of acquisition likelihood,

[16] Alternative matching based on different industry definitions (two-digit SIC industry, Fama and French 48 industries) or different size bands (10%, 30%) delivers similar results.

sharing a common auditor increases the likelihood of an M&A between clients by 0.2 percentage points, which is sizable given that the sample mean of the probability of an M&A is 0.7 percent.

4.3.2. Secondary information channel - Financial statement comparability

The second channel through which common auditors can reduce M&A uncertainty is via enhanced financial statement comparability. As discussed above, because each audit firm has a unique style of interpreting and implementing accounting rules (Francis et al., 2014; Blacconiere et al., 2011), firms can better understand the assumptions and choices underlying accounting numbers in financial statements from firms that share the same auditor. In turn, this leads to a better understanding of those firms' economics, relative to that of firms using different auditors.

To determine whether common-auditor firms engaged in an M&A have greater financial statement comparability, we conduct two analyses. First, we use the difference in the firms' year-specific total accruals as a proxy for comparability following Francis et al. (2014). In particular, we calculate the absolute value of the difference in total accruals between the acquirer and the target in the year prior to acquisition announcement (*Diff_Total_Accruals*), where total accruals are calculated as the difference between income before extraordinary items and cash flows from operations, scaled by beginning of year total assets.[17] We then regress *Diff_Total_Accruals* on *Common auditor* and several control variables. Specifically, following Francis et al. (2014), we control for the minimum values and differences in size, leverage, market-to-book, cash flow from operations, losses, standard deviation of sales, standard deviation of cash flow from operations, and standard deviation of sales growth. We also exclude financial institutions because characteristics of accruals differ in these firms (Louis, 2004). Eliminating observations with data restrictions and financial institutions reduces our sample size to 1,679 observations.

[17] We also examine the absolute value of the difference in abnormal accruals between the acquirer and the target in the year prior to acquisition announcement, where abnormal accruals are calculated following Kothari et al. (2005). The untabulated results using abnormal accruals are similar to those using total accruals.

Second, as an alternate proxy for financial statement comparability, we use the firms' covariance of earnings across time (Barth et al., 2012; De Franco et al., 2011; Lang et al., 2010). Specifically, we estimate the earnings co-movement between the acquirer and the target in the 16 quarters prior to acquisition announcement (*ECOMP_COV*), where we measure the level of covariance as the adjusted R^2 from the regression of the acquirer's income before extraordinary items scaled by total assets on the target's income before extraordinary items scaled by total assets. We then regress *ECOMP_COV* on *Common auditor* and several control variables. In particular, we include the same control variables used in the total accruals analysis, plus we control for cash flow comovement and return comovement across 16 consecutive quarters (Francis et al., 2014). We require at least 10 quarters of data available for both the acquirer and the target in estimating earnings comovement. These data restrictions reduce the sample size to 1,513 observations.[18]

Table 7 reports the results from the estimation of the comparability tests. In particular, Column 1 (2) shows the results from our comparability analysis using differences in total accruals (earnings comovement) as our proxy for financial statement comparability. As indicated in both columns, the coefficient estimate for *Common auditor* is statistically significant in the predicted directions. Specifically, in column 1, the coefficient for *Common auditor* (-0.020) is negative and significant at the 5% level, suggesting that there are smaller differences in total accruals between acquirers and targets in common-auditor M&As, as compared to those in non-common-auditor M&As. In column 2, the coefficient for *Common auditor* (0.026) is positive and significant at the 10% level, indicating greater earnings comovement for acquirers and targets in common-auditor M&As relative to those in non-common-auditor M&As. Combined, the results

[18] We also examine the effect of common auditors using another comparability measure developed in De Franco et al. (2011), which is based on the similarity of the mapping of earnings to stock returns across firms. Untabulated results using this alternative comparability measure are qualitatively similar to those reported in Table 7.

in Table 7 provide support for the notion that the financial statements of acquirers and targets are more comparable in common-auditor M&As than they are in non-common-auditor M&As.

4.3.3. Secondary information channel – Limited misreporting

The third channel through which common auditors can reduce M&A uncertainty is by limiting misreporting and/or increasing the confidence of the acquirer (target) that the target's (acquirer's) financial statements are accurate. As discussed above, both acquirers and targets have incentives to manage earnings. Thus, auditors that audit both the acquirer and the target face greater litigation risk as well as greater scrutiny by stakeholders, given their role as a common agent with the opportunity for conflicts of interest. To the extent common auditors face greater litigation (and potentially reputational) risk, they have greater incentives to limit misreporting that asymmetrically benefits one party over the other, resulting in more transparent financial information and reduced uncertainty.

To determine whether there is less misreporting for common-auditor M&As relative to non-common-auditor M&As, we use performance-matched abnormal accruals (Kothari et al., 2005) and financial statement restatements (Bens et al., 2012) as proxies for misreporting. For the accrual analysis, we examine both acquirer and target accruals; however, for the restatement analysis, we examine restatements made by the newly merged firm. Since our sample of acquisitions consists of acquirers obtaining 100% ownership, the new company is a combination of the acquirer and target. As such, when a restatement is announced, we cannot identify whether it was the acquirer or the target that initiated the earnings management. That is, the restatements are announced for the new company rather than the acquirer or target separately, as consolidated statements are presented for those earlier (pre-M&A) years.

For our first misreporting analysis, we estimate quarterly unexpected accruals in the spirit of Erickson and Wang (1999). Following Louis (2004) and Gong et al. (2008), we focus on current accruals because long-term accruals are less susceptible to manipulation in the short run (Healy, 1985). Following the suggestion of Kothari et al. (2005), we control for firm performance by matching on contemporaneous ROA (calculated as income before extraordinary items scaled by lagged total assets).[19] Specifically, quarterly unexpected accruals are the residuals from the estimation of the following model:

$$CACC_{it}/AT_{it\text{-}1} = \alpha_1 1/AT_{it\text{-}1} + \alpha_2 \Delta REV_{it}/AT_{it\text{-}1} + \alpha_3 Q_1 + \alpha_4 Q_2 + \alpha_5 Q_3 + \alpha_6 Q_4 + Year\ FE + \varepsilon_{it}, \quad (3)$$

where $CACC_{it}$ represents current accruals for firm i in quarter t, $AT_{it\text{-}1}$ is total assets for firm i in quarter t-1, ΔREV_{it} is the change in revenue for firm i in quarter t, and Q_1 (Q_2, Q_3, Q_4) is an indicator that equals one for the first (second, third, fourth) fiscal quarter and zero otherwise. All indicator variables are deflated by lagged total assets. We estimate the model for each two-digit SIC industry. We follow Erickson and Wang (1999) and focus on three quarters, $q_{\text{-}2}$, $q_{\text{-}1}$, and q_0, where q_0 is the last quarter for which earnings are announced prior to the acquisition announcement. Unexpected accruals (*UA*), our proxy for earnings management, is the sum of $q_{\text{-}2}$, $q_{\text{-}1}$, and q_0 unexpected accruals minus unexpected accruals of the industry-and-performance-matched firm.[20]

Table 8 provides the results from regressing *UA* on the *Common auditor* indicator. We report the acquirers' *UA* in Columns 1 and 2 and targets' *UA* in Columns 3 and 4. We include only year and industry fixed effects in Columns 1 and 3, and we include the full set of control variables

[19] As Kothari et al. (2005, p. 166) note, "[D]iscretionary accruals estimated using the Jones or the modified-Jones model, and adjusted for a performance-matched firm's discretionary accrual, tend to be the best specified measures of discretionary accruals across a wide variety of simulated event conditions…[M]atching on ROA_t produces less misspecified tests because the performance-related error in estimating the discretionary accrual of a treatment firms affects the treatment firm's ROA_t , which is matched with a control firm's ROA_t. Thus, the impact of performance-related accrual on the properties of subsequent period's estimated discretionary accrual of the treatment firm is better controlled for when matching is on ROA_t than by matching on a lagged (i.e., stale) determinant, $ROA_{t\text{-}1}$."

[20] In untabulated analyses, we also use annual unexpected accruals and the Dechow and Dichev (2002) accruals quality measure as proxies for misreporting, and our results are qualitatively similar.

(as in Equation (1)) in Columns 2 and 4. The number of observations for this analysis is smaller (i.e., 1,526 obs. and 1,508 obs. in the acquirer and target analyses, respectively) than that used in our main analyses because we exclude financial firms for this analysis and unexpected accruals are not estimable for some observations due to data restrictions. The coefficient estimates for *Common auditor* are negative and statistically significant in Columns 1 and 2, supporting our conjecture that acquirers engage in less earnings management prior to the acquisition when they share a common auditor with the target. While the coefficient estimates for *Common auditor* are also negative in Columns 3 and 4, they are statistically insignificant.[21] Erickson and Wang (1999) show that acquiring firms manage earnings upward in the three quarters prior to the merger, but they do not find evidence of earnings management in target firms, potentially because many target firms often have little time to respond to M&A offers. Thus, our weaker findings for the disciplining effect of common auditors on misreporting by targets may be a function of lower power.

For our second misreporting analysis, we examine whether the merging firms are less likely to restate earnings if the acquirer and the target share a common auditor. We focus on restatements filed by the newly merged firm for misreporting made within two years before the merger completion. This two-year window generally covers the fiscal year prior to the merger announcement as well as the fiscal year between the merger announcement and the deal completion, as more than 90 percent of the acquisitions in our sample complete the deal within one year from the merger announcement.

We collect earnings restatements from Audit Analytics. Scholz (2008) argues that Audit Analytics is a more expansive database than other restatement data sources, as the Audit

[21] Our results for acquirer unexpected accruals are largely driven by stock-for-stock deals. Untabulated results show that if we restrict the analysis to stock deals (882 out of 1,526 deals in Table 8), the coefficient on *Common auditor* is -0.034 and statistically significant at the five percent level, while the coefficient is -0.007 and statistically insignificant in all-cash deals (644 deals). For our target unexpected accruals analysis, the coefficient on *Common auditor* is still insignificant in both stock and cash deals (860 and 648 out of 1,508 deals in Table 8, respectively).

Analytics software extracts information from all EDGAR filings, which leads to a more efficient identification of restatements filed without being announced in a press release or a Form 8-K. Audit Analytics includes only restatements that correct misstated financial statements and exclude other financial statement changes. Following Bens et al. (2012), we eliminate all clerical application errors and include only accounting rule application failures and financial fraud to ensure that our sample includes material GAAP misapplications and not unintentional reporting errors. We use information about the beginning date of the misstatement period to identify earnings misstatements within a two-year window before the merger completion.

Columns 5 and 6 of Table 8 present the marginal effects from the probit regression of *Restatement* on *Common auditor* without and with control variables, respectively, where *Restatement* is an indicator that equals one if the beginning date of the misstatement period falls within a two-year window before the merger completion and zero otherwise. The number of observations for this analysis drops to 1,356 because the coverage of restatements in Audit Analytics starts in 1996 and we use a two-year window to identify misreporting before the deal completion. As indicated in Column 5 (6), a common auditor M&A is associated with a 3.4 (3.1) percentage point reduction in the likelihood of earnings restatements, as compared to a non-common-auditor M&A, and this marginal effect is statistically significant at the 5% (10%) level. Given that the sample mean of the restatement probability is 8.04 percent, the effect of common auditors in reducing the restatement probability is economically meaningful. Combined, the results in Tables 5, 6, 7 and 8 support our inferences that common auditors reduce uncertainty in the M&A process by improving (public and private) communication channels.

5. Additional analyses

5.1. Strategic selection of auditor

One potential concern with our finding is the endogenous choice of auditors by the acquirer and the target. In particular, either party may strategically hire a common auditor prior to the acquisition announcement to influence deal outcomes or for other reasons that lead to better M&A outcomes. To address this potential issue, we examine the tenure of the auditor. Our intuition is that for auditor selection to be a concern, there must be a change in auditor shortly before the acquisition. That is, it's highly unlikely that firms switch auditors many years before an intended M&A to obtain the benefits of having a common auditor.

We find that acquirer (target) auditors have an average tenure of 10.06 (7.23) years in common-auditor deals and 9.79 (7.46) years in non-common-auditor deals. Further, the acquirer (target) auditor's tenure is less than three years in 15.2% (18.3%) of the common-auditor sample, and in 16.5% (19.0%) of the non-common-auditor sample. So, merging firms do not appear to strategically select auditors for M&As. Nonetheless, we address the concern of strategic auditor selection using two additional tests. First, we create indicator variables that equal one if the acquirer's or target's auditor has a tenure less than three years and zero otherwise, then include interaction terms of *Common auditor* and these two indicator variables. If firms are being strategic in the appointment of common auditors, we should expect the common-auditor effect on M&A outcomes to be more pronounced for shorter-tenured auditors. In untabulated results neither of the interaction terms is significant, and the coefficient of *Common auditor* continues to be positive and statistically significant at the 1% level. Second, we rerun our analysis on a subsample of acquisitions in which both the acquirer's auditor and the target's auditor have been with the firms for at least three years. The untabulated result is qualitatively and quantitatively similar to those with the full sample.[22]

[22] Our results are robust if we define short-tenured auditor as the ones whose tenure is less than or equal to one year prior to deal announcement.

5.2. Non-market based M&A quality measures

In our main analyses, we use the acquisition announcement return as our proxy for M&A quality. In this section, we use two non-market based measures that have also been used in the literature for M&A quality: (1) post-acquisition change in ROA, Δ*ROA,* (Healy et al., 1992; Chen et al., 2007; Wang and Xie, 2009; Lin et al., 2011; Fu et al., 2013; Goodman et al., 2014), and (2) the probability of a post-acquisition goodwill impairment, *Prob_GW_Impair* (Doellman and Ryngaert, 2010; Gu and Lev, 2011; Goodman et al., 2014). The advantages of these measures are that they are not as susceptible to market biases and they represent *ex post* (as opposed to *ex ante*) measures of M&A quality. ROA represents the actual economic benefits generated by the assets, as opposed to the market's perception of the increase in value. Further, a goodwill impairment recorded in the post-acquisition period represents instances where the premium paid for the target's assets is no longer justified. However, the main drawback of these measures lies in the difficulty in isolating the performance effects directly related to the acquisition from those of the rest of the firm. Therefore, we focus on acquisition announcement returns in our main analyses and provide supporting evidence using these ex post, non-market based measures in this section.

We rerun our main analyses, i.e., Equations (1) and (2), where we substitute Δ*ROA* and *Prob_GW_Impair* as the dependent variables and estimate the models using OLS estimation and a probit regression, respectively. Δ*ROA* is measured as the three-year change in ROA, and *Prob_GW_Impair* is an indicator equal to one if there is a goodwill impairment in the three-year period following an acquisition that generates a large increase in goodwill (i.e., an increase in goodwill greater or equal to 1% of total assets), and zero otherwise. Due to data restrictions, our change in ROA sample declines from 1,971 to 1,684, but there is no sample attrition for the goodwill impairment analysis. In untabulated results, we find that when we

rerun Equation (1) with our non-market based M&A quality measures, the coefficient estimate for *Common auditor* is positive (negative) and statistically significant at the 1% level (10% level) when using Δ*ROA (Prob_GW_Impair)*, consistent with our expectations and the results in Table 3 that common-auditor M&As are higher quality than non-common-auditor M&As. When we rerun our uncertainty analysis (Equation (2)), we find that the interaction coefficient estimate, β_3, is positive and statistically significant in three of the four specifications using Δ*ROA*. Further, the coefficient estimate for β_3 is negative across all four specifications using *Prob_GW_Impair*, suggesting a lower likelihood of post-acquisition goodwill impairments for common-auditor acquisitions with more uncertainty; however, the coefficients are not statistically significant. Collectively, this evidence, along with that in Tables 3 and 4, suggests that common auditors have a greater impact on M&A quality when there is more uncertainty before the acquisition.

5.3. The impact of the Sarbanes-Oxley Act

Section 201 of SOX increased restrictions on non-audit services, such as M&A advisory and consulting services, provided by independent auditors in an attempt to strengthen auditor independence. To the extent auditors were engaged in non-audit services before SOX and common auditors used these services to help their clients engage in better acquisitions, the common-auditor effect should be mitigated post-SOX. To examine this possibility, we partition our sample into pre- and post-SOX subperiods and rerun our analyses. We classify transactions announced between January 1988 and July 2002 (when SOX was enacted) as deals in the pre-SOX period, and those announced between August 2002 and December 2010 as deals in the post-SOX period. Untabulated results show that the common-auditor effect on acquisition announcement returns is similar between the pre- and post-SOX periods, suggesting that the higher quality M&As associated with common auditors are a result of reductions in uncertainty from (perhaps

informal) communications within the audit function rather than those within non-audit functions. An alternative possibility is that these communications shifted from non-audit functions to informal discussions within the audit function after SOX. We cannot rule out this possibility.

5.4. Shared investment banks and shared directors

Agrawal et al. (2013) and Cai and Sevilir (2012) show that shared investment banks and interlocked directors influence acquisition outcomes. To examine whether the common-auditor effect is incremental to the effects of shared investment banks or shared directors, we include a shared investment bank indicator and the shared director indicator in our model. Among our sample of 1,971 acquisitions, only five deals (0.25%) have shared investment banks, consistent with Agrawal et al. (2013), who also report a very low percentage of shared investment banks, i.e., 98 out of 6,272 deals (1.6%). Further, among our sample of 961 deals with available data on shared directors, 93 deals (9.7%) have shared director, which is comparable to the 9.4% reported in Cai and Sevilir (2012).[23] Untabulated results show that the coefficient on *Common auditor* remains positive and statistically significant even after we control for the shared investment bank indicator or the shared director indicator, suggesting that the common-auditor effect is incremental to the effect of shared directors and shared investment banks.

5.5. Impact of specific auditors

In our final analysis, we examine whether a particular auditor or subset of auditors drive the acquisition announcement returns in our main analyses. For example, Louis (2005) finds that acquirers audited by non-Big 4 accounting firms outperform those audited by Big 4 firms. Further, with the demise of Arthur Andersen in 2002, many firms switched auditors and may have strategically selected auditors based, in part, on their ability to help with upcoming M&As.

[23] We do not include these related control variables in our main analyses, because there is such a significant drop (roughly 50%) in our sample size as a result of data restrictions on the shared director variable.

Accordingly, we conduct three tests. First, we restrict our sample to Big 4 clients only, which results in a sample of 1,813 observations. Second, we remove deals with Andersen clients (acquirer or target) in years 2001 and 2002. In both tests, our results continue to hold at the 1% level.

Finally, we examine whether the common-auditor effect on announcement returns is stronger for one of the largest eight auditors in the sample (PricewaterhouseCoopers, Ernst & Young, Deloitte & Touche, KPMG, Arthur Andersen, Grant Thornton, BDO Seidman, or Crowe Chizek & Company). Specifically, we include an interaction term, where we interact *Common auditor* with an indicator for a specific auditor. While *Common auditor* remains positive and statistically significant at the 1% level, none of the interaction terms are significant, suggesting that the common-auditor effect is not stronger for any particular auditor.

6. Conclusion

The acquisition process often involves significant uncertainty, which can negatively impact M&A quality by reducing managers' ability to identify the most profitable investment projects. This paper examines whether M&A quality is higher when acquirers and targets share the same external auditor. Given their considerable knowledge regarding both the acquirer and the target, common auditors can help reduce uncertainty, and thus improve M&A quality, via (i) direct communications with the merging parties, (ii) enhanced financial statement comparability, and (iii) limiting misreporting.

Using the acquisition announcement return to capture M&A quality, we find that M&As involving firms with a common auditor are of higher quality than M&As involving firms with different auditors. We also find that the common-auditor effect is stronger when there is greater pre-acquisition uncertainty. Collectively, these results are consistent with common auditors

reducing uncertainty during the M&A process, which leads to higher quality M&As. We then provide evidence on the three mechanisms through which common auditors reduce M&A uncertainty. With respect to the first mechanism, i.e., direct communications with the parties, we show the common-auditor effect is larger when the acquirer and target use the same local office of the common auditor, and we show there is an increased probability of an M&A for firms with a common auditor. We then show that acquirers and targets with common auditors have more comparable financial statements (i.e., second mechanism) and less misreporting (i.e., third mechanism) than do those with different auditors. Combined, these results support our inferences that common auditors reduce uncertainty in the M&A process, leading to higher quality M&As.

Our study contributes along several dimensions. First, we contribute to the literature that examines the role of acquirer auditors or target auditors in M&As by providing new insights into the role of common auditors in M&As. Second, our study contributes to the literature on the real effects of accounting and auditing by showing that common auditors reduce uncertainty in the M&A process, and thus improve M&A quality. Third, we contribute to the large literature examining the effect of sharing an agent on economic outcomes by providing evidence on the impact of sharing an auditor on M&A outcomes. Finally, we complement concurrent work by Dhaliwal et al. (2014), who also examine the role of common auditors in M&A outcomes. While we show that common auditors are associated with higher quality M&As, Dhaliwal et al. (2014) find that the benefits accrue to the acquirers at the target's expense. Further, they focus on the role of auditor quality in mitigating the conflict of interest, while we explore the mechanisms through which common auditors impact M&A outcomes and the role of pre-M&A uncertainty in that relation.

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Appendix. Variable definitions

Variable	Definition	Data source
Panel A: Measures of acquisition performance		
ANN_CAR	Cumulative abnormal percentage return for a value-weighted portfolio of the acquirer and the target using the market model estimated using the return data of two hundred trading days ending two months before the announcement date. The weights are based on the market capitalizations of the acquirer and the target at two months prior to the deal announcement. The target's weight is adjusted for the acquirer's toehold.	CRSP
ΔROA	The change in income before extraordinary items scaled by assets from three years before the acquisition announcement to three years after the acquisition completion.	Compustat
Prob_GW_Impair	Indicator variable equals one if a firm records goodwill impairment losses in the three-year period following an acquisition that generates a large increase in goodwill, and zero otherwise. A large increase in goodwill is defined as an increase in goodwill greater or equal to 1 percent of total assets.	Compustat
Panel B: Auditor characteristics		
Common auditor	Indicator variable equals one if the acquirer and the target share the same audit firm and zero otherwise.	Compustat
Big 4 auditor	Indicator variable equals one if the firm is audited by a Big 4 accounting firm and zero otherwise.	Compustat
Auditor industry dominance	Indicator variable equals one if the auditor is the largest auditor based on clients' assets in the two-digit SIC industry and its market share is at least 10% greater than that of the second auditor and zero otherwise.	Compustat
Panel C: Acquirer and target firm characteristics		
Firm size	Market value of equity in millions calculated as the number of shares outstanding multiplied by the stock price at two months prior to the deal announcement. Natural logarithm of the market value of equity is used in regressions.	CRSP
Operating cash flows	Sales minus the cost of goods sold, selling and general administrative expenses, and working capital change, scaled by book value of assets.	Compustat
Tobin's Q	Market value of assets over book value of assets.	Compustat
Leverage	Book value of debt over book value of assets.	Compustat
Pre-announcement stock price-run-up	Buy-and-hold abnormal returns during the two hundred trading days ending two months before the announcement date with CRSP value-weighted return as the market index.	CRSP
Panel D: Deal characteristics		
Relative deal size	Deal value divided by acquirer's market value of equity.	SDC, CRSP
Percentage of stock financing	Percentage of financing with stocks.	SDC
Tender offer	Indicator variable equals one for tender offers and zero	SDC

	otherwise.	
Hostile	Indicator variable equals one if the bid is hostile and zero otherwise.	SDC
Multiple bidders	Indicator variable equals one if there is more than one bidder and zero otherwise.	SDC
High-tech firms	Indicator variable equals one if the acquirer and the target are both from the high-tech industries as defined in Loughran and Ritter (2004) and zero otherwise.	SDC
Panel E: Additional controls		
Diversifying acquisition	Indicator variable equals one if the acquirer and the target do not share the same two-digit SIC code and zero otherwise.	SDC
Corr(stock return)	Correlation of stock returns between the acquirer and the target during the six-month period ending two months prior to the deal announcement.	CRSP
Previous business relation	Indicator variable equals one if strategic alliances or joint ventures exist between the acquirer and the target in the three years prior to the deal announcement and zero otherwise.	SDC
Toehold	Acquirer's percentage equity ownership in the target firm prior to the deal announcement.	SDC
Local deal	Indicator variable equals one if the acquirer's headquarters is located within 100 kilometers of the target's headquarters and zero otherwise.	SDC, Form 10-K, Compustat
Panel F: Uncertainty proxies		
Target sales growth	Percentage change in sales from the previous year.	Compustat
Target stock return volatility	Daily stock return volatility over the one-year period ending two months prior to the deal announcement.	CRSP
Target R&D intensity	R&D expenditure scaled by sales.	Compustat
Target Bid-ask spread	Average of daily bid-ask spreads (scaled by the midpoint of the spread) over the one-year period ending two months prior to the deal announcement.	CRSP

Table 1: Sample distribution

This table presents the distribution of sample acquisitions by announcement year and by acquirer Fama and French 48 industry classification, respectively. Numbers for the full sample are presented first, followed by subsamples based on whether the acquirer and the target share a common auditor around the acquisition announcement. Common-auditor deals are the acquisition transactions in which the acquirer and the target share the same audit firm. Non-common-auditor deals are the transactions without shared auditors.

Panel A: By announcement year

		Common-auditor deals		Non-common-auditor deals	
Year	Full sample	Number	Percentage	Number	Percentage
1988	44	7	15.9	37	84.1
1989	40	9	22.5	31	77.5
1990	35	9	25.7	26	74.3
1991	25	7	28.0	18	72.0
1992	25	8	32.0	17	68.0
1993	39	9	23.1	30	76.9
1994	58	9	15.5	49	84.5
1995	114	30	26.3	84	73.7
1996	122	37	30.3	85	69.7
1997	164	54	32.9	110	67.1
1998	171	38	22.2	133	77.8
1999	173	52	30.1	121	69.9
2000	167	51	30.5	116	69.5
2001	108	34	31.5	74	68.5
2002	67	15	22.4	52	77.6
2003	81	18	22.2	63	77.8
2004	74	24	32.4	50	67.6
2005	84	27	32.1	57	67.9
2006	108	25	23.1	83	76.9
2007	97	29	29.9	68	70.1
2008	53	11	20.8	42	79.2
2009	63	24	38.1	39	61.9
2010	59	20	33.9	39	66.1
Total	1,971	547	27.8	1,424	72.2

Panel B: By acquirer Fama and French 48 industry classification

		Common-auditor deals		Non-common-auditor deals	
Industry	Full sample	Number	Percentage	Number	Percentage
Agriculture	3	0	0.0	3	100.0
Food products	22	4	18.2	18	81.8
Candy and soda	4	1	25.0	3	75.0
Beer and liquor	2	0	0.0	2	100.0
Tobacco products	2	2	100.0	0	0.0
Recreation	21	5	23.8	16	76.2
Entertainment	26	4	15.4	22	84.6
Printing and publishing	16	1	6.3	15	93.8
Consumer goods	28	6	21.4	22	78.6
Apparel	11	0	0.0	11	100.0
Health care	45	15	33.3	30	66.7
Medical equipment	78	30	38.5	48	61.5
Pharmaceutical products	117	28	23.9	89	76.1
Chemicals	36	8	22.2	28	77.8
Rubber and plastic products	8	1	12.5	7	87.5
Textiles	5	3	60.0	2	40.0
Construction materials	24	6	25.0	18	75.0
Construction	14	4	28.6	10	71.4
Steel works etc.	26	5	19.2	21	80.8
Fabricated products	6	0	0.0	6	100.0
Machinery	51	16	31.4	35	68.6
Electrical equipment	15	5	33.3	10	66.7
Automobiles and trucks	20	5	25.0	15	75.0
Aircraft	8	0	0.0	8	100.0
Shipbuilding, railroad equipment	7	5	71.4	2	28.6
Defense	4	0	0.0	4	100.0
Precious metals	9	4	44.4	5	55.6
Mining	3	1	33.3	2	66.7
Coal	2	1	50.0	1	50.0
Petroleum and natural gas	96	22	22.9	74	77.1
Utilities	58	27	46.6	31	53.4
Communication	93	22	23.7	71	76.3
Personal services	12	1	8.3	11	91.7
Business services	304	70	23.0	234	77.0
Computers	244	70	28.7	174	71.3
Electronic equipment	17	6	35.3	11	64.7
Measuring/control equipment	67	16	23.9	51	76.1
Business supplies	20	8	40.0	12	60.0
Shipping containers	3	2	66.7	1	33.3
Transportation	24	10	41.7	14	58.3
Wholesale	49	9	18.4	40	81.6
Retail	74	19	25.7	55	74.3
Restaurants, hotels, motels	28	13	46.4	15	53.6
Banking	72	23	31.9	49	68.1
Insurance	90	31	34.4	59	65.6
Real estate	4	2	50.0	2	50.0
Trading	91	33	36.3	58	63.7
Other	12	3	25.0	9	75.0
Total	1,971	547	27.8	1,424	72.2

Table 2: Descriptive statistics

This table presents the descriptive statistics of announcement returns and control variables. All variables are defined in Appendix. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent level, respectively, based on two-tailed tests.

Panel A: Announcement returns

	(1) Full Sample (N=1,971)		(2) Common-auditor Deals (N=547)		(3) Non-common-auditor Deals (N=1,424)		(2)-(3)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
ANN_CAR[-1,+1]	1.91***	1.22***	2.67***	1.44***	1.61***	1.14***	1.06***	0.30**
ANN_CAR[-2,+2]	1.97***	1.29***	2.74***	1.73***	1.68***	1.18***	1.06***	0.54**
ANN_CAR[-3,+3]	1.99***	1.18***	2.89***	1.66***	1.65***	1.00***	1.24***	0.66**

Panel B: Control variables

	Full sample							
Variable	Mean	S.D.	Median	P25	P75	Common-auditor deals	Non-common-auditor deals	Difference
Auditor characteristics								
Acquirer Big 4 auditor	0.97	0.18	1.00	1.00	1.00	0.98	0.96	0.02**
Target Big 4 auditor	0.94	0.23	1.00	1.00	1.00	0.98	0.93	0.05***
Acquirer auditor industry dominance	0.14	0.35	0.00	0.00	0.00	0.16	0.14	0.02
Target auditor industry dominance	0.12	0.33	0.00	0.00	0.00	0.17	0.11	0.06***
Acquirer characteristics								
Firm size	8,990	20,909	1,743	461	6,398	9,095	8,949	146
Operating cash flows	0.12	0.10	0.12	0.07	0.18	0.12	0.12	-0.01
Tobin's Q	2.30	1.86	1.69	1.23	2.59	2.27	2.30	-0.03
Leverage	0.21	0.18	0.18	0.06	0.33	0.22	0.21	0.01
Pre-announcement stock price-run-up	0.07	0.35	0.02	-0.13	0.18	0.08	0.07	0.01
Target characteristics								
Firm size	870	1,929	196	62	727	915	853	62
Operating cash flows	0.07	0.16	0.10	0.03	0.15	0.06	0.08	-0.02**
Tobin's Q	1.99	1.61	1.44	1.10	2.16	1.92	2.02	-0.09
Leverage	0.22	0.22	0.16	0.02	0.36	0.22	0.22	0.01
Pre-announcement stock price-run-up	0.00	0.40	-0.05	-0.25	0.17	0.00	-0.01	0.01
Deal characteristics								
Relative deal size	0.49	0.96	0.20	0.07	0.53	0.49	0.49	0.00
Percentage of stock financing	46.91	45.01	45.64	0.00	100.00	46.20	47.19	-0.99
Tender offer	0.24	0.42	0.00	0.00	0.00	0.22	0.24	-0.02
Hostile bid	0.02	0.14	0.00	0.00	0.00	0.01	0.02	-0.01*
Multiple bidders	0.06	0.23	0.00	0.00	0.00	0.04	0.07	-0.03**
High-tech firms	0.29	0.45	0.00	0.00	1.00	0.29	0.29	0.00
Additional controls								
Diversifying acquisition	0.35	0.48	0.00	0.00	1.00	0.34	0.35	-0.02
Corr(stock return)	0.19	0.20	0.15	0.05	0.29	0.21	0.18	0.03***
Previous business relation	0.02	0.12	0.00	0.00	0.00	0.01	0.02	0.00
Toehold	3.12	11.31	0.00	0.00	0.00	4.86	2.45	2.41***
Local deal	0.19	0.39	0.00	0.00	0.00	0.27	0.16	0.11***

Table 3: Common auditors and acquisition announcement returns

This table presents results from the regression of acquisition announcement returns. The dependent variable is *ANN_CAR*, the cumulative abnormal returns of the value-weighted portfolio of the acquirer and the target from one day before to one day after the deal announcement. The other variables are defined in Appendix. All the regressions include controls for calendar year fixed effects and Fama and French 48 industry fixed effects whose coefficients are suppressed for brevity. *t*-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and firm clustering are reported in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent level, respectively, based on two-tailed tests.

Variable	(1)	(2)
Common auditor	1.166***	1.064***
	(2.967)	(2.911)
Auditor characteristics		
Acquirer Big 4 auditor		-1.109
		(-1.027)
Target Big 4 auditor		0.400
		(0.645)
Acquirer auditor industry dominance		0.033
		(0.064)
Target auditor industry dominance		-0.077
		(-0.154)
Acquirer and target firm characteristics		
Acquirer size		-0.742***
		(-5.959)
Acquirer Operating cash flows		1.940
		(0.888)
Acquirer Tobin's Q		-0.052
		(-0.386)
Acquirer leverage		2.018*
		(1.906)
Acquirer pre-announcement stock price-run-up		-1.058
		(-1.631)
Target Operating cash flows		-0.155
		(-0.113)
Target Tobin's Q		-0.164
		(-1.069)
Target leverage		-2.537***
		(-2.972)
Target pre-announcement stock price-run-up		-0.525
		(-1.151)
Deal characteristics		
Relative deal size		1.387***
		(6.200)
Percentage of stock financing		-0.033***
		(-7.687)
Tender offer		1.028**
		(2.320)
Hostile bid		2.792**
		(2.399)

Multiple bidders		0.307
		(0.402)
High-tech firms		-0.774
		(-1.240)
Additional controls		
Diversifying acquisition		-0.861**
		(-2.374)
Corr(stock return)		2.176**
		(2.091)
Previous business relation		-0.002
		(-0.109)
Toehold		0.598
		(0.676)
Local deal		0.267
		(0.649)
Year fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Observations	1,971	1,971
Adj. *R*-squared	0.004	0.199

Table 4: Common-auditor effect and target uncertainty

This table presents regression results with interaction terms of common auditor and target uncertainty proxies. The dependent variable is *ANN_CAR*, the cumulative abnormal returns of the value-weighted portfolio of the acquirer and the target from one day before to one day after the deal announcement. The other variables are defined in Appendix. All the regressions include controls for calendar year fixed effects and Fama and French 48 industry fixed effects whose coefficients are suppressed for brevity. *t*-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and firm clustering are reported in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent level, respectively, based on two-tailed tests.

Variable	(1)	(2)	(3)	(4)
Common auditor	0.785**	-0.823	0.992***	-0.852
	(2.117)	(-1.057)	(2.702)	(-1.148)
*Common auditor * Target sales growth*	0.928**			
	(2.026)			
Target sales growth	-0.044			
	(-1.225)			
*Common auditor * Target stock return volatility*		49.922**		
		(2.327)		
Target stock return volatility		-29.836**		
		(-2.373)		
*Common auditor * Target R&D intensity*			0.158***	
			(3.814)	
Target R&D intensity			-0.134***	
			(-3.923)	
*Common auditor * Target bid-ask spread*				37.430**
				(2.532)
Target bid-ask spread				-16.330*
				(-1.764)
Controls	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Observations	1,971	1,971	1,971	1,971
Adj. *R*-squared	0.196	0.199	0.197	0.199

Table 5: Analyses of same-office common auditors

This table presents results from the regression of acquisition announcement returns on same- and different-office common auditor indicators. The dependent variable is *ANN_CAR*, the cumulative abnormal returns of the value-weighted portfolio of the acquirer and the target from one day before to one day after the deal announcement. *Same-office common auditor* is an indicator equal to one if the acquirer and the target share a common auditor from the same local office and zero otherwise, and *Different-office common auditor* is an indicator equal to one if the acquirer and the target share a common auditor from different local offices and zero otherwise. The other variables are defined in Appendix. All the regressions include controls for calendar year fixed effects and Fama and French 48 industry fixed effects whose coefficients are suppressed for brevity. *t*-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and firm clustering are reported in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent level, respectively, based on two-tailed tests.

Variable	(1)	(2)
Common auditor	1.125***	
	(3.413)	
Same-office common auditor		1.976***
		(3.389)
Different-office common auditor		0.873**
		(2.347)
Auditor characteristics		
Acquirer Big 4 auditor	-1.097	-1.093
	(-1.334)	(-1.325)
Target Big 4 auditor	0.273	0.290
	(0.472)	(0.501)
Acquirer auditor industry dominance	-0.122	-0.112
	(-0.284)	(-0.261)
Target auditor industry dominance	-0.275	-0.261
	(-0.630)	(-0.597)
Acquirer and target firm characteristics		
Acquirer size	-0.644***	-0.639***
	(-5.835)	(-5.782)
Acquirer Operating cash flows	-0.095	-0.092
	(-0.857)	(-0.840)
Acquirer Tobin's Q	1.695*	1.689*
	(1.709)	(1.705)
Acquirer leverage	1.325	1.294
	(0.697)	(0.682)
Acquirer pre-announcement stock price-run-up	-0.149	-0.150
	(-0.268)	(-0.270)
Target Operating cash flows	0.016	0.015
	(0.120)	(0.115)
Target Tobin's Q	-1.573**	-1.562**
	(-2.068)	(-2.053)
Target leverage	0.500	0.455
	(0.401)	(0.367)
Target pre-announcement stock price-run-up	-0.550	-0.551
	(-1.228)	(-1.231)

Deal characteristics		
Relative deal size	0.899***	0.901***
	(4.455)	(4.457)
Percentage of stock financing	-0.030***	-0.030***
	(-7.309)	(-7.331)
Tender offer	0.537	0.524
	(1.394)	(1.359)
Hostile bid	1.117	1.183
	(0.925)	(0.979)
Multiple bidders	0.550	0.558
	(0.703)	(0.709)
High-tech firms	-0.648	-0.650
	(-1.166)	(-1.171)
Additional controls		
Diversifying acquisition	-0.432	-0.425
	(-1.322)	(-1.301)
Corr(stock return)	1.716*	1.702*
	(1.876)	(1.857)
Previous business relation	0.567	0.602
	(0.509)	(0.545)
Toehold	0.006	0.003
	(0.417)	(0.191)
Local deal	0.402	0.119
	(1.078)	(0.289)
Test: *Same-office common auditor*		F-statistic = 2.80
= *Different-office common auditor*		Prob > F = 0.0945
Year fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Observations	1,591	1,591
Adj. *R*-squared	0.183	0.184

Table 6: Common auditors and M&A likelihood

This table presents probit regression results of the probability of merger and acquisition (M&A) transactions (marginal effect reported). For each acquirer (target), we define the set of all potential acquirer (target) firms as the ones in the same three-digit standard industrial classification industry with similar size (within 20 percent band of market capitalization). Our dependent variable is an indicator variable that equals one if an M&A transaction takes place between the potential acquirer and the potential target and zero otherwise. *ROA* is operating income before depreciation, scaled by book value of total assets. *Stock return* is stock returns over the one-year period ending two months prior to the deal announcement. *Industry Herfindahl* is the sum of the squares of the sales market shares over all firms within the industry. The other variables are defined in Appendix. All the regressions include controls for calendar year fixed effects and Fama and French 48 industry fixed effects whose coefficients are suppressed for brevity. Z-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and firm clustering are reported in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent level, respectively, based on two-tailed tests.

Variable	(1)	(2)
Common auditor	0.003***	0.002***
	(8.199)	(7.223)
Acquirer characteristics		
Acquirer size		0.001***
		(9.507)
Acquirer Tobin's Q		-0.000
		(-0.732)
Acquirer leverage		-0.001*
		(-1.764)
Acquirer ROA		0.001
		(1.543)
Acquirer sales growth		0.000**
		(2.281)
Acquirer stock return		0.000*
		(1.791)
Acquirer stock return volatility		-0.030***
		(-4.051)
Acquirer industry Herfindahl		-0.027***
		(-2.688)
Target characteristics		
Target size		0.001***
		(5.147)
Target Tobin's Q		-0.000**
		(-2.409)
Target leverage		0.000
		(0.867)
Target ROA		0.001**
		(2.432)
Target sales growth		-0.001***
		(-4.331)
Target stock return		-0.000
		(-1.484)
Target stock return volatility		-0.005
		(-0.939)

Target industry Herfindahl		0.047***
		(7.236)
Year fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Observations	232,604	232,604
Pseudo *R*-squared	0.192	0.237

Table 7: Common auditors and financial statement comparability

This table presents regression results of financial statement comparability measures. The dependent variable in Column 1 is *Diff_Total_Accruals*, the absolute value of the difference in total accruals between the acquirer and the target in the year prior to acquisition announcement, where total accruals are calculated as the difference between income before extraordinary items and cash flows from operations, scaled by beginning of year total assets. The dependent variable in Column 2 is *ECOMP_COV*, the earnings co-movement between the acquirer and the target in the 16 quarters prior to acquisition announcement. In the total accruals difference regression, we control for the minimum value of and the difference in size, leverage, market-to-book, cash flow from operations, losses, standard deviation of sales, standard deviation of cash flow from operations, and standard deviation of sales growth. In the earnings comovement regression, we also control for cash flow comovement and return comovement across 16 consecutive quarters. Refer to Francis et al. (2014) for definitions of control variables. All the regressions include controls for calendar year fixed effects and Fama and French 48 industry fixed effects whose coefficients are suppressed for brevity. *t*-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and firm clustering are reported in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent level, respectively, based on two-tailed tests.

Variable	(1) *Diff_Total_Accruals*	(2) *ECOMP_COV*
Common auditor	-0.020**	0.026*
	(-2.215)	(1.742)
Size_diff	-0.006	0.008
	(-1.490)	(1.270)
Size_min	-0.004	0.002
	(-0.808)	(0.255)
LEV_diff	0.041	-0.092**
	(1.165)	(-2.202)
LEV_min	-0.000	-0.024
	(-0.014)	(-0.456)
MB_diff	0.010	-0.010*
	(1.286)	(-1.837)
MB_min	-0.004	0.001
	(-0.582)	(0.067)
CFO_diff	0.380***	
	(4.893)	
CFO_min	0.043	
	(0.500)	
LossProb_diff	0.023	-0.046
	(1.538)	(-1.601)
LossProb_min	0.030	0.005
	(1.094)	(0.134)
STD_Sales_diff	-0.000	-0.000**
	(-1.214)	(-2.047)
STD_Sales_min	-0.000	0.000
	(-0.438)	(0.807)
STD_CFO_diff	0.000	-0.000
	(0.916)	(-0.625)
STD_CFO_min	-0.000	0.000
	(-0.120)	(0.783)

STD_Sales_Grth_diff	-0.007*	-0.006
	(-1.788)	(-1.016)
STD_Sales_Grth_min	0.141***	0.046
	(3.070)	(0.650)
CFO_COMP_COV		0.090**
		(2.261)
RET_COV		0.087**
		(2.458)
Year Fixed Effect	Yes	Yes
Industry Fixed Effect	Yes	Yes
Observations	1,679	1,513
Adjusted *R*-squared	0.229	0.029

Table 8: Common auditors and earnings misreporting

This table presents ordinary least squares regression results of earnings management and probit regression results of earnings restatement (marginal effect reported). The dependent variable in Columns 1 and 2 is aggregate quarterly unexpected current accruals of the acquirer over the three quarters prior to the deal announcement. The dependent variable in Columns 3 and 4 is aggregate quarterly unexpected current accruals of the target over the three quarters prior to the deal announcement. The dependent variable in Columns 5 and 6 is an indicator variable that equals one if the beginning date of the misstatement period falls within a two-year window before the merger completion and zero otherwise. The other variables are defined in Appendix. All the regressions include controls for calendar year fixed effects and Fama and French 48 industry fixed effects whose coefficients are suppressed for brevity. t/Z-statistics based on standard errors adjusted for heteroskedasticity (White, 1980) and firm clustering are reported in parentheses. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent level, respectively, based on two-tailed tests.

	(1)	(2)	(3)	(4)	(5)	(6)
Variable	*Acquiror UA*		*Target UA*		*Restatement*	
Common auditor	-0.024**	-0.024**	-0.017	-0.015	-0.034**	-0.031*
	(-2.214)	(-2.181)	(-0.906)	(-0.746)	(-2.004)	(-1.920)
Auditor characteristics						
Acquirer Big 4 auditor		0.019		-0.023		-0.029
		(0.560)		(-0.574)		(-0.667)
Target Big 4 auditor		0.030		-0.012		0.033
		(1.334)		(-0.502)		(1.269)
Acquirer auditor industry dominance		-0.023		0.031		-0.009
		(-1.392)		(1.073)		(-0.373)
Target auditor industry dominance		-0.006		-0.011		-0.030
		(-0.410)		(-0.384)		(-1.500)
Acquirer and target firm characteristics						
Acquirer size		-0.005		-0.007		0.004
		(-1.331)		(-0.990)		(0.654)
Acquirer Operating cash flows		-0.130*		-0.059		-0.034
		(-1.803)		(-0.567)		(-0.434)
Acquirer Tobin's Q		0.001		-0.007		-0.000
		(0.158)		(-0.818)		(-0.094)
Acquirer leverage		0.011		-0.007		0.059
		(0.361)		(-0.147)		(1.054)
Acquirer pre-announcement stock price-		0.007		0.030		-0.002
		(0.335)		(0.827)		(-0.084)
Target Operating cash flows		0.022		-0.096		0.096*
		(0.541)		(-1.114)		(1.649)
Target Tobin's Q		0.005		0.026**		-0.009
		(1.307)		(2.504)		(-1.430)
Target leverage		0.019		0.073*		-0.080*
		(0.765)		(1.918)		(-1.687)
Target pre-announcement stock price-		-0.009		-0.021		0.057***
		(-0.671)		(-0.833)		(3.154)
Deal characteristics						
Relative deal size		-0.001		-0.020**		-0.001
		(-0.115)		(-2.168)		(-0.123)

Percentage of stock financing		0.000		-0.000		0.001***
		(0.402)		(-0.324)		(2.997)
Tender offer		-0.015		-0.009		0.022
		(-1.029)		(-0.414)		(0.912)
Hostile bid		-0.028		-0.047		0.022
		(-0.986)		(-1.323)		(0.295)
Multiple bidders		0.024		0.017		0.017
		(1.004)		(0.459)		(0.485)
High-tech firms		0.018		-0.015		-0.003
		(0.852)		(-0.422)		(-0.125)
Additional controls						
Diversifying acquisition		0.001		-0.009		0.037*
		(0.121)		(-0.427)		(1.928)
Corr(stock return)		0.026		-0.017		-0.058
		(0.782)		(-0.337)		(-1.313)
Previous business relation		0.002		0.095		0.216**
		(0.034)		(0.915)		(2.098)
Toehold		0.000		0.001		0.001
		(0.863)		(0.973)		(1.465)
Local deal		-0.019		-0.030		-0.014
		(-1.397)		(-1.121)		(-0.688)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,526	1,526	1,508	1,508	1,356	1,356
Adj. /Pseudo *R*-squared	0.031	0.050	0.021	0.045	0.059	0.117