Auditor Effect on Merger and Acquisition Outcomes: Evidence from Targets' Auditor-Provided Nonaudit Services

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ABSTRACT

We study the role of auditors in the market for corporate control by examining the relation between nonaudit services (NAS)-related auditor independence and acquisition outcomes. We find that a target's NAS purchases from its incumbent auditor are associated with a lower deal premium, more time and effort taken for due diligence verification, and a higher likelihood of using stock as a method of payment. These relations are more pronounced in situations where the target is more incentivized to manage earnings and the auditor face less risk to acquiesce to client pressure. We also find a negative relation between the target's NAS purchases and the actual deal quality measured by post-acquisition divestiture and goodwill impairment. Overall, our evidence indicates that audit quality affects multiple aspects of an acquisition deal and that the NAS provision compromises auditor independence both in appearance and in fact.

JEL Classification: M42; G34

Keywords: Auditor independence; Nonaudit services; Merger and acquisition; Audit quality

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1. Introduction

Mergers and acquisitions (M&A) are significant corporate events that affect a wide spectrum of stakeholders as bad deals cause massive value losses. M&As are thus among the most critical corporate investment decisions. Information uncertainty about a target's intrinsic value and acquisition synergy poses a significant challenge to an acquisition decision. DeAngelo (1990) shows that the M&A market exhibits an important demand for accounting information beyond that associated with debt contracts and equity markets. As a target's stock price is an inadequate measure of acquisition value, target valuations heavily rely on accounting numbers (DeAngelo 1990; Liu 2020).

This highlights a potential critical role of auditors in M&A transactions given that external audit is purported to provide assurance of the accuracy and completeness of company financial statements. The importance of this role is illustrated by anecdotal evidence such as the case of Hewlett-Packard's acquisition of the software company Autonomy, in which Deloitte's failure to properly audit the accounts of the target, due to its closeness with the client and reliance on the business, was blamed for the acquisition debacle.[1] Yet, the empirical evidence in this area is very limited, which is striking as it concerns the effectiveness of external audit for real resource allocation.

This paper studies whether the assurance role of auditors reduces information uncertainty about target valuation and affects the outcomes of a M&A transaction. To achieve this purpose, we examine the impact of auditor independence in relation to the target's purchases of nonaudit

[1] Please see https://www.accountingtoday.com/news/deloitte-fined-15m-in-u-k-for-autonomy-audits for details.

services (NAS) from its incumbent auditor on the acquirer's assessment of deal value, the time and effort taken for due diligence verification, and the likelihood of using stock as a method of payment. As an extension, we also look into post-acquisition actual deal outcomes.

We use NAS-related auditor independence to test the auditor effect on acquisition outcomes arising from the assurance role because auditor independence is at the core of external audit and auditors' economic incentives in the provision of NAS to clients are viewed by regulators, legislators, and oversight bodies as a threat to auditor independence. This concern has been manifested in a series of regulatory initiatives in the U.S. aimed at mandating the disclosure, and limiting the scope, of auditor-provided NAS.[2] Despite the restrictions on NAS provision, the allowable services still make up a sizable portion of the revenues that auditors collect from their audit clients (nearly 16 percent for our whole sample and over 24 percent for one quarter of our sample firms) and the NAS-induced auditor independence concern seems to be growing. For example, the EY Center for Board Matters shows that nearly 90 percent of companies in 2020 disclosed that the audit committee considers NAS when assessing auditor independence and this number is only 19 percent in 2012 (EY 2020). Outside the U.S., the European Union amended its directive in 2014 to limit the types of NAS that external auditors can provide to audit clients and cap the fees charged for those services for fiscal years beginning on or after June 17, 2016. The U.K. Financial Reporting Council has recently asked the Big 4 accounting firms for operational

[2] Securities and Exchange Commission (SEC) (2000) requires that public companies disclose in their proxy statements the amount and type of audit and NAS fees paid to their auditors. This mandatory disclosure serves as a way to "both deter an unhealthy relationship between auditor and client, and to inform investors of any risks" related to the relationship. The Sarbanes-Oxley Act (SOX) (2002) prohibits auditors from providing some NAS to audit clients, but still allows an extensive list of NAS, which includes benefit plan audits, mergers and acquisitions due diligence, attestation services, accounting consultations, tax compliance, tax planning, tax advice, and operational audits. The Public Company Accounting Oversight Board (PCAOB) (2004) further restricts the scope of taxation services with respect to tax planning due to the evidence of aggressive tax planning by several large accounting firms.

separation to address the audit practice's reliance on "persistent cross-subsidy from the rest of the firm."[3]

If the target's NAS purchases from the incumbent auditor impair auditor independence and raise concern about the credibility of its financial reporting, information uncertainty about its acquisition value increases. We expect that the acquirer will exercise extra caution in offering a high deal premium to avoid the winner's curse (i.e., the bidder pays too much for an asset with an uncertain value). Similarly, increased uncertainty about the target can make it more challenging for the acquirer to verify the fairness and accuracy of the representations and warranties made by the target. We expect bidders to be likely to spend more time and effort on the due diligence verification (Wangerin 2019). Also, given that uncertainty about the target's financial reporting quality elevates the risk of misvaluation, we expect a higher likelihood of the deal being structured in the form of stock payment to reduce losses from potential misvaluation. Essentially, we hypothesize that audit quality associated with auditor independence affects M&A decisions and that auditor-provided nonaudit services are detrimental to auditor independence and audit quality. Our empirical test on the relation between target's NAS purchases and M&A outcomes is therefore a test of the joint hypotheses that allow us to obtain insights into the effect on M&A outcomes of auditors as contracted assurance providers and the relation between auditor-provided NAS and auditor independence in the M&A setting.

However, we may not be able to observe a significant relation between targets' NAS and M&A outcomes. First, prior studies document quite mixed evidence on the effect of NAS on audit quality. Although there is some evidence that NAS provision is associated with negative perception of auditor independence in the equity and bond markets, these findings are not readily generalizable

[3] For details, please see https://www.bloomberg.com/news/articles/2020-07-06/u-k-asks-big-four-firms-to-separate-auditing-units-by-june-2024.

to the M&A market as the information needs are not necessarily the same on these markets. For example, Lim and Tan (2008) find that NAS fees can be associated with a less likelihood of beating analyst forecasts when auditors are industry specialists. Beating or missing analysts' forecasts causes changes in stock prices, which affect the cost of equity and debt, as documented by Khurana and Raman (2006) and Dhaliwal, Gleason, Heitzman, and Melendrez (2006). However, beating or missing analysts' forecasts may not be relevant to the assessment of the intrinsic value of the target and acquisition synergy. Second, acquirers, unlike equityholders and bondholders, have access to targets' private information during the due diligence process. Thus, audit quality may not matter that much to them.

We construct a sample of M&A deals involving U.S. public targets from 2003 to 2019 and measure the extent of targets' NAS purchases from incumbent auditors using both the magnitude of NAS fees and the ratio of NAS fees to total fees. After controlling for audit fees, attributes of acquirers and targets, and deal characteristics, we find strong negative associations between targets' NAS fees and deal premium, suggesting that acquirers put a lower value on deals involving targets with greater purchases of NAS from incumbent auditors. To put it in context, a one-standard-deviation increase in the magnitude of NAS fees (NAS fee ratio) can lead to a decrease in deal premium of 0.022 (0.027), accounting for 5.98% (7.34%) of the sample mean and amounting to $57 ($70) million in value loss. We also find that targets' higher NAS fees are related to acquirers' longer due diligence process. The impact is economically meaningful as a one-standard-deviation increase in the magnitude of NAS fees (NAS fee ratio) is associated with a 5.24% (3.90%) increase in time to deal completion, translating into roughly seven (five) extra days taken for due diligence verification. For the choice of method of payment, we find that higher NAS fees in targets are associated with a higher likelihood of using stock payment. For economic

significance, a one-standard-deviation increase in the magnitude of NAS fees (NAS fee ratio) leads to an increase of 0.022 (0.053) in the likelihood of using stock payment, which is 3.97% (9.67%) of the sample mean.

The findings from these tests suggest that the target's audit quality matters to M&A decisions and exhibits meaningful effect on M&A outcomes and that the acquirer associates the target's NAS purchases from incumbent auditor with diminished auditor independence and audit quality. Deal premium determines the amount of funds put into a M&A deal and thus is related to resource allocation. As a lengthy M&A process may distract from or cause disruption in operations and incur more costs to both acquirers and targets, more time taken for due diligence verification increases transaction frictions and costs. Method of payment concerns how to finance a M&A deal in an uncertain information environment. Collectively, our results show a significant effect of external audit on multiple aspects of a real economic decision.

We conduct two finer analyses. First, we examine cross-sectional variation in the relations between targets' NAS fees and M&A deal outcomes. We use Ohlson's (1980) O-score, financial loss, and bid-and-ask spreads to construct a composite measure to capture situations in which a target has greater incentive to manage earnings (when financial distress risk is high) and an auditor faces less risk to connive at client accounting choices (when earnings management is less likely to be discovered). The acquirer in these circumstances is expected to be more concerned about auditor independence and thus react more strongly to the deal. We find this is the case. Second, we decompose NAS fees into audit-related fees, tax service fees, and other fees. Across the three M&A outcomes and the two NAS measures, we find that the effect mostly comes from audit-related fees, although tax service fees exhibit certain effect in some specifications.

While reverse causality is less of concern in the M&A setting (i.e., targets' NAS fees are unlikely to be driven by M&A outcomes), correlated omitted variables can still complicate the interpretation of our findings. Our consistent results on multiple M&A outcomes and variation tests can to some extent alleviate this concern because it is a higher hurdle for correlated omitted variables to drive all these results. Nevertheless, we conduct several tests to further address this concern. First, given that more able managers may not need much advice and help from auditors (low NAS fees) and their firms may be more likely to have better deal outcomes, we control for managerial ability in the target firms and find that our main results remain largely unchanged. Second, we control for large shareholders' monitoring to address the concern that governance strength may cause a mechanical relation between targets' NAS fees and deal outcomes by affecting both constructs. Third, we control for accruals quality as prior studies find an impact of targets' accruals quality on deal outcomes. It is not surprising that accruals quality does not suppress the NAS effect, for accruals quality only captures an earnings attribute while auditor independence is associated with a much broader scope of accounting quality. Lastly, we estimate two-stage-least-squares (2SLS) regressions using the existence of foreign operations and the target's auditor local office NAS revenue (excluding NAS fees from the target) as instrument variables.[4] Our main results remain robust to the 2SLS estimations.

As an extension, we examine the association between targets' NAS purchases and the post-acquisition deal quality. In the main tests, we focus on acquirers' assessment of auditor independence in relation to targets' NAS purchases and the impact of this assessment on their M&A decisions. Prior studies find poor quality M&A deals are more likely to experience post-

[4] The rationale for the choice of the instrument variables is that targets with international operations are more likely in need of auditors' advices and a local auditor office is more likely to sell NAS to a target if it tends to provide NAS to other clients.

acquisition divestiture and goodwill impairment (Kaplan and Weisbach 1992; Francis and Martin 2009). If targets' NAS purchases indeed erode auditor independence and reduce audit quality, the effect should be reflected in the actual deal outcomes. Examining the post-acquisition deal quality serves to confirm acquirers' assessment and offer insights into the actual compromise of auditor independence by the provision of NAS. We find some evidence that targets' NAS fees are positively related to the likelihood of divestiture and the amount of goodwill impairment.

Our study contributes to the research examining the auditor role in the market for corporate control. While several studies explore auditor effect on M&A outcomes through the information role and advisory role (Louis 2006; Dhaliwal, Lamoreaux, Litov, and Neyland 2016; Cai, Kim, Park, and White 2016), only a few explore their effect through the assurance role in the U.S. (Xie, Yi, and Zhang 2013; De Franco, Gavious, Jin, and Richardson 2011) despite providing assurance is the most primitive objective set for external audit (Wallace 1980). Our study differs from Xie et al. (2013) and De Franco et al. (2011) in that they focus on the target's auditor size (Big-N auditors) while we are interested in NAS-related auditor independence. Given that nonaudit services have a greater cross-sectional variation than Big-N auditors and are more likely on the radar of regulatory initiatives, our findings have broader economic and policy implications.

Our study also contributes to the literature that examines the economic implications of NAS in two important ways. First, prior studies report mixed results on the impact of auditor-provided NAS on auditor independence. Examining this relationship in the market for corporate control, a unique setting in which M&A transactions are significant events and multiple M&A outcomes in different stages of the acquisition process allows us to examine both the acquirers' perception of diminished auditor independence and the factual impairment of independence, we find evidence consistent with NAS impairing auditor independence both in fact and in appearance. Second, we

find that the NAS auditor-client relationship in the target affects multiple aspects of a M&A transaction. The real effect of NAS goes beyond what is documented in the extant literature that focuses on its accounting and financing cost ramifications.

Finally, our study contributes broadly to the M&A literature by providing the first evidence that compromised auditor independence through the NAS provision is a significant factor that impacts M&A deal valuation, time and effort for deal completion, payment method, and deal quality as manifested in post-acquisition performance.

2. Literature and Hypotheses

2.1 Literature on the role of auditors in mergers and acquisitions

Auditors play multiple roles in M&As. Dhaliwal et al. (2016) and Cai et al. (2016) examine an information intermediary role of auditors. Dhaliwal et al. (2016) find that a target is more likely to receive a tender offer from a bidder that shares the same auditor with it and deals struck in such a condition have higher completion rates. But these deals are usually favorable to bidders, with lower deal premiums, lower target announcement returns, and higher bidder announcement returns. Cai et al. (2016) find that common auditors between acquirers and targets facilitate information flow and improve the quality of acquisition as measured by higher combined announcement returns of acquirers and targets. Louis (2005) examines an advisory role of auditors and finds acquirers with non-Big4 auditors have higher announcement returns, which is attributable to small auditors having close relations with clients and superior local knowledge. De Franco et al. (2011), Xie et al. (2013), and Kim, Su, Zhou, and Zhu (2020) examine auditor effect through the assurance role. De Franco et al. (2011) document that private targets with Big4 auditors receive higher sale proceeds from acquirers. Xie et al. (2013) report that firms with Big4 auditors are more likely to become M&A targets and more likely to be ultimately acquired in M&A deals. Kim et al. (2020) focus on PCAOB international inspections of non-U.S. auditors and find that clients of inspected

auditors are more likely to become M&A targets, and these deals have higher completion rates and higher combined announcement returns.

2.2 Literature on nonaudit services and auditor independence

Prior studies examine the effect of NAS on auditor independence in fact and in appearance. The overall evidence on auditor independence in fact, nevertheless, is quite mixed. Some studies find evidence consistent with NAS impairing actual auditor independence. For example, Frankel, Johnson, and Nelson (2002) use abnormal accruals and beating or meeting analysts' forecasts as indicators of the actual independence erosion and find their positive associations with NAS. Srinidhi and Gul (2007) measure accruals quality using the Dechow and Dichev (2002) model and find a significant negative association with NAS. Blay and Geiger (2013) find some evidence of association between NAS and auditors' going-concern opinions but caution that their results are sensitive to different time periods and control samples. Rice and Weber (2012) find a negative association between NAS and the likelihood of issuing adverse internal control report. Carcello, Neal, Reid, and Shipman (2020) report that nonaudit fees are inversely related to the likelihood of impairment in settings where goodwill is likely to be impaired.

Other studies find no association between NAS and audit quality. Ashbaugh, LaFond, and Mayhew (2003) and Larcker and Scott (2004) challenge Frankel et al.'s (2002) finding, arguing that they are sensitive to research design choices. DeFond, Raghunandan, and Subramanyam (2002) find no relation between the likelihood of auditors issuing going-concern opinions and NAS, Using restatements as a proxy for impaired auditor independence, Kinney, Palmrose, and Scholz (2004) find no relation with fees for either internal audit services or financial information systems design and implementation. Lennox (2016) find no effect of PCAOB's restrictions on tax services on firm misstatements and auditors' going-concern opinions. Still others find that the NAS provision is

associated with higher audit quality. For example, Kinney et al. (2004) find a negative relation between fees for tax services and financial restatements. Lim and Tan (2008) examine the moderating effect of auditor specialization in the relation between NAS and audit quality and find that industry specialists' auditor-provided NAS actually increases the likelihood that clients miss analyst forecasts and receive going-concern opinions.

Research finds that participants in equity and bond markets perceive NAS as a threat to auditor independence. Francis and Ke (2006) report that the market response to quarterly earnings surprises is lower for firms with high levels of nonaudit fees. Khurana and Raman (2006) show that an auditor's economic dependence on a client through NAS is positively related to the client's implied cost of equity. Dhaliwal et al. (2006) find a higher bond spread for issuers with a higher level of nonaudit fees.

2.3 Nonaudit services and auditor independence (audit quality)

There are two competing views on the relation between auditor-provided NAS and auditor independence or audit quality. The first regards NAS as detrimental to auditor independence. Three non-mutually exclusive reasons are offered for holding this view. First, nonaudit services have a higher profit margin and generate more quasi-rents than audit services, thus enhancing the auditor-client economic bond. If an auditor's realization of revenue streams from NAS is contingent on maintaining such a relationship, the auditor may be prone to deferring to the client's accounting preferences. Second, even if the auditor does not deliberately water down independence, the enhanced economic incentive involving NAS may increase the so-called "self-serving bias," that is, the auditor may be unconsciously predisposed in favor of the client (the unconscious loss of objectivity).[5] Third, the provision of NAS may divert the auditors focus away from audit quality,

[5] The term "self-serving bias" refers to the cognitive characteristic that individuals cannot separate their own self-interest from that of others in close proximity with whom they interact closely (Francis 2006).

and change their role and mindset from an objective outside inspector with professional skepticism to an advisor who aids executives, thus compromising their ability as independent reviewers (Francis 2006).

The second argues that the economic incentive arising from the provision of NAS can be offset by countervailing incentives and effects (such as reputation concerns, litigation exposure, and knowledge spillovers) on the part of the auditor not to lose independence and sacrifice audit quality. Indeed, prior studies find that concerns about reputation (Lim and Tan 2008) and litigation risk (Shu 2000) counteract the incentives that vitiate auditors' objectivity. Also, the provision of NAS enables the auditor to gain in-depth knowledge and profound understanding of a client's business, which in turn can improve the efficiency and quality of audit (Simunic 1984). However, SEC (2000) challenges the relevance and strength of these countervailing factors. Regarding reputation and litigation concerns, divergences exist in the reputational interests between the audit firm and the audit engagement partner or the office of the partner that performs most of the work for an audit client (Trompeter 1994; Clikeman 1998; Kinney 1999). While the latter has more to gain in profit by appeasing the client, it shares only a portion of reputational and litigation loss from audit failure. As to knowledge spillovers, a sharing of firm personnel between consulting side and auditing side is rarely observed, and the skills necessary to perform the two types of services are vastly different.

2.4 Audit quality and M&A outcomes

We take the first view as the basis to develop our hypotheses, that is, the NAS provision by the target's auditor raises the acquirer's concerns about target's auditor independence and thus the credibility of its audited financial statements, posing greater information risk and uncertainty in the M&A process. In an acquisition, the acquirer critically relies on the target's audited financial

information to assess the intrinsic value of the target's net assets and the synergy of the merger, and formulate offer price. The more uncertainty it faces over the target's financials, the less confidence it has on the precision of the estimated value and the more likely it sets a lower price.

Adverse selection occurs in the M&A market as in other markets such as private lending, IPOs, and SEOs–a bidder pays too much for an asset with an uncertain value. Bazerman and Samuelson (1983) and Samuelson and Bazerman (1985) show that the winner's curse can happen both in a setting of auction with multiple bidders and in a setting of bilateral negotiations. Bazerman and Samuelson (1983) further show that the degree of uncertainty about the true value of the target affects the incidence and magnitude of the winner's curse. Because the target's high-quality accounting information can help the acquirer to make precise estimation so that the offer price is close to the target's true worth, the acquirer is less concerned about the winner's curse. In contrast, greater uncertainty over the true value of the target elevates the acquirer's concerns about overbidding.

Cox and Isaac (1984) theorize that bidders recognize the winner's curse and rationally discount bids in response to greater uncertainty to mitigate the risk of overbidding. Thus, we expect that NAS-induced concerns over reduced audit quality in target firms lead acquirers to pay a lower deal premium. We propose our first hypothesis as follows:

H1. A target with greater purchase of nonaudit services from its incumbent auditor receives lower deal premium.

Generally, an M&A transaction goes through three stages (Skaife and Wangerin 2013). In the preliminary due diligence stage, an acquirer relies on public information to identify, assess, and screen targets. The selected target signs a confidentiality agreement with the acquirer, and then the in-depth diligence review starts. In this stage, the acquirer accesses and reviews limited private information of the target to update its initial valuation and decide whether to make a formal offer

for the target. After singing an acquisition agreement and publicly announcing the deal, the acquirer begins its transactional due diligence. At this stage, the acquirer has extensive access to the target's books to verify the accuracy of the representations and warranties made by the target in the acquisition agreement.

Only until the stage of transactional due diligence does an acquirer gain rights to the target's financial records and contracts. According to practitioners, the review of financial records is the "single most important aspect of due diligence" (Lajoux and Elson 2000). It includes verifying the target's financial numbers: reviewing receivables for collectability, counting inventories, identifying intangibles, and searching for unreported liabilities, as well as obtaining supportive evidence to assess valuation models used for complex items. The review also goes beyond the reported numbers and includes off-balance sheet items, one-time gains or losses misclassification, and revenues and expenses shifting across years. The more uncertainty about the target before the deal announcement, the greater importance of the due diligence verification. When the information risk is high due to low credibility of the target's financial reporting, bidders are likely to spend more time and effort on the verification of financial records (Wangerin 2019).

Our second hypothesis is concerned with whether the perceived compromise of auditor independence in relation to the target's NAS fees affects the acquirer's extent of due diligence verification. We predict that an M&A deal involving a target with greater amount of NAS purchases from its auditor will need longer time for the process of transactional due diligence (i.e., from the deal announcement date to the deal resolution date). Please note that a lengthy due diligence can distract from and cause disruption to ongoing business activities and increase out-of-pocket costs to both the acquirer and the target (Lajoux and Elson 2000), thus representing significant transaction costs. We present our second hypothesis as follows:

H2. A deal involving a target with greater purchase of nonaudit services from its incumbent auditor takes longer time to complete.

Uncertainty about targets' financial reporting quality elevates the risk of misvaluation. Potential misvaluation bothers both the acquirer and the target: the former is concerned about overpayment while the latter is worried about underpayment. To make the deal go through, both parties have incentives to move toward minimizing losses from potential misvaluation. One solution is to allow the acquirer and target shareholders to share in both gains and losses of the combined entity occurring from the misvalution.

As a contingent pricing contract, stock offer generally serves this function. For the acquirer, using stock as a method of payment can minimize losses from overpayment as overpayment-induced stock price drop in the combined entity also affects the well-beings of the target shareholders, making the losses being effectively shared (Hansen 1987). For the target, the concern about underpayment is lessened by stock offer because the target shareholders can partake in underpayment-induced stock price gains in the combined entity to compensate for the initial underpayment (Fishman 1989). Consistent with the arguments, Raman et al. (2013) find a negative relation between targets' accounting quality and the use of stock as a method of payment. Because the target's NAS fees raise doubt about the credibility of its financial information, increasing the risk of misvaluation, we expect a higher likelihood of the deal being structured in the form of stock payment. Hence, we propose the third hypothesis as follows:

H3. A deal involving a target with greater purchase of nonaudit services from its incumbent auditor is more likely to conclude in the form stock payment.

We argue that an acquirer is concerned about the credibility of financial information of a target that has a strong NAS relationship with its auditor. This concern should be more salient in situations where the target is more prone to pushing the envelope of reliable accounting and

reporting and its auditor faces less risk to acquiesce to its accounting choices. For example, firms tend to manage earnings when financial distress risk is high (DeFond and Jiambalvo 1994; Charitou, Lambertides, and Trigeorgis 2007). Meanwhile, an opaque information environment can mask earnings management as it increases the difficulty for stakeholders to "see through" managed earnings (Schipper 1989; Richardson 2000), making auditors more willing to bow to client pressure. Thus, when the target has a higher financial distress risk and an opaque information environment, the acquirer should have a greater concern about auditor independence associated with NAS and react more strongly to the deal. We propose a hypothesis regarding the cross-sectional variation in H1, H2, and H3 as follows:

H4. The associations of a target's NAS purchases from incumbent auditor with deal premium, the time to deal completion, and the use of stock as a method of payment are stronger when there is greater concern about the credibility of the target's financial information.

3. Sample, Data, and Model

3.1 Data and sample

We obtain a sample of U.S. M&As between 2003 and 2019 from the Securities Data Corporation's Mergers and Acquisitions Database (SDC). We start our sample in 2003 because we require the availability of nonaudit fee data in Audit Analytics and we focus our analysis on periods after the Sarbanes-Oxley Act. Following prior literature, we exclude deals that are leveraged buyouts, spinoffs, exchange offers, self-tenders, recapitalizations and repurchases. We also require transactions to have deal values greater than $1 million. We further limit our sample to deals in which targets have audit fee data available from Audit Analytics. At last, we remove deals with acquirers and targets in financial industries and having missing financial values. The above sample selection process leaves a final sample of 1,048 observations. Additional variable requirements

further reduce the sample to 1,021 for the test of deal premium and to 903 for the test of days to deal completion. Table 1 presents details of the sample selection procedure.

3.2 Regression models

To examine the impact of targets' NAS on deal premium and the time and effort taken for due diligence verification, we estimate the following regression model:

$$\begin{aligned} PREMIUM / DAYCOMP = {} & b_0 + b_1 TGT\_NAUDFEE / TGT\_NAUDFEE\% \\ & + b_2 TGT\_AUDFEE + b_3 LNMV + b_4 MTB + b_5 TGT\_MTB \\ & + b_6 TGT\_ROA + b_7 TGT\_BIGN + b_8 RELMV + b_9 PCTBUY \\ & + b_{10} TENDER + b_{11} HOSTILE + b_{12} COLLAR \\ & + b_{13} MULTIBID + b_{14} SAMEIND + b_{15} SAMEAUD \\ & + Industry\ fixed\ effects + Year\ fixed\ effects, \end{aligned} \quad (1)$$

where the dependent variable is either *PREMIUM*, a measure of deal premium offered to the target by the acquirer, or *DAYCOMP*, a measure of time and effort for due diligence verification. *PREMIUM* is the difference between the price offered in the bid and the target's trading price one week prior to the announcement date as reported by SDC, minus 1 (Skaife and Wangerin 2013; Dhaliwal et al. 2016).[6] *DAYCOMP* is calculated as the natural logarithm of the number of days between the deal announcement date and the deal resolution date (either completion or termination) (Marquardt and Zur 2015; Wangerin 2019).

The variable of interest is either the natural logarithm of target's NAS fees (*TGT_NAUDFEE*) or the ratio of nonaudit fees to total fees paid to the target's auditor (*TGT_NAUDFEE%*). The magnitude measure captures the client's financial importance to the auditor and the ratio measure captures the revenue from nonaudit services relative to that of total services. The two NAS measures together capture the auditor-client economic bond that could incentivize the auditor to behave less objectively (SEC 2000). We expect b_1 to be negative when the dependent variable is

[6] We also use, as an alternative measure, the deal premium four weeks prior to the deal announcement, as calculated by SDC. Our results remain qualitatively unchanged.

PREMIUM and positive when the dependent variable is *DAYCOMP*, to keep consistency with the negative perception of auditor independence (H1 and H2),

We include a variety of control variables. First, we control for the target's audit fees (*TGT_AUDFEE*). This control serves two purposes: (1) test the separate incentive effects of nonaudit and audit fees (Blay and Geiger 2013) and (2) mitigate omitted variables bias as audit and nonaudit fees are positively correlated (Simunic 1984). Then we control for characteristics of acquirers and targets including acquirer size (*LNMV*), acquirer market to book ratio (*MTB*), target market to book ratio (*TGT_MTB*), target return on assets (*TGT_ROA*), and relative size of the target to the acquirer (*RELMV*) (Moeller et al. 2004; Dong, Hirshleifer, Richardson, and Teoh 2006; Asquith, Bruner, and Mullins 1983). The size of target relative to the acquirer can impact the negotiating power of the target and thus have implications for deal premium and due diligence (Asquith et al., 1983). We control whether the target has a Big-N auditor (*TGT_BIGN*), as Xie et al. (2013) find that target with a Big-N auditor is associated with favorable deal outcomes. Following prior studies (Schwert 2000; Mitchell et al., 2004; Hsieh and Walkling 2005), we include several deal characteristic control variables: the percentage that acquirer sought to buy (*PCTBUY*), tender offer indicator (*TENDER*), hostile bid indicator (*HOSTILE*), collar provision indicator (*COLLAR*) and multiple bidders indicator (*MULTIBID*). We further include the indicator variable *SAMEIND* to control for differences across within- and cross-industry deals and the indicator variable *SAMEAUD* to represent whether the acquirer and the target share the same auditor at the city level (Dhaliwal et al. 2016; Cai et al. 2016). Finally, we control for year and industry fixed effects.

To examine the impact of targets' NAS on the use of stock as a method of payment, we estimate the following regression model:

$$
\begin{aligned}
STOCKOFFER = {} & b_0 + b_1 TGT\_NAUDFEE / TGT\_NAUDFEE\% + b_2 TGT\_AUDFEE \\
& + b_3 LNMV + b_4 MTB + b_5 ROA + b_6 LOSS + b_7 LEV + b_8 TGT\_MTB \\
& + b_9 TGT\_ROA + b_{10} TGT\_BIGN + b_{11} RELMV + b_{12} PCTBUY \\
& + b_{13} TENDER + b_{14} HOSTILE + b_{15} COLLAR + b_{16} MULTIBID \\
& + b_{17} SAMEIND + b_{18} SAMEAUD + Industry\ fixed\ effects \\
& + Year\ fixed\ effects, \qquad (2)
\end{aligned}
$$

where the dependent variable, *STOCKOFFER* is an indicator equal to 1 if a deal involves the use of stock as a method of payment and zero for all cash payment. Relative to Equation (1), we add acquirer's performance (*ROA* and *LOSS*) and leverage (*LEV*) as acquirers' cash flows and liquidity affect the method of payment. Because we include industry and year fixed effects, we follow Kim, Shroff, Vyas, and Wittenberg-Moerman (2018) and estimate the regression as a linear probability model to avoid incidental parameter problem. All acquirer and target attributes are measured at the fiscal year end prior to the deal announcement date. Variable definitions are in Appendix. All continuous variables are winsorized at the 1 percent and 99 percent of the sample. Results are estimated with heteroskedasticity-robust standard errors.

4. Main Empirical Results

4.1 Summary statistics

Table 2 reports summary statistics for variables in Equations (1) and (2). The average nonaudit fee is $447,720 and the average ratio of NAS fees to total fees is 0.158. One quarter of the sample targets have NAS fees of more than $364,000 and NAS fee ratio of more than 0.243. These statistics suggest that despite cutbacks in NAS by the SOX, NAS fees still make up a sizable portion of the revenue that auditors collect from their audit clients, posing potential threat for auditor independence.

The average deal premium is 0.368, suggesting that acquirer offer price on average is 37% higher than targets' stock price prior to the deal announcement. The average days from the announcement date to the deal resolution date is 127, roughly four months. About 54.9 percent of

deals using stock as a method of payment. The statistics for the deal outcomes are generally in line with prior studies (Skaife and Wangerin 2013; Dhaliwal et al. 2016; Wangerin 2019). Targets in general are much smaller than acquirers (35.4% in terms of market value) and have poorer accounting performance and fewer growth opportunities. More than 80% of the targets are audited by Big4 accounting firms. Nearly 19% of deals are tender offers, 1.9% are hostile takeovers, 8.9% receive multiple bids, and 6.6% occur between an acquirer and a target with shared auditors at the city level.

We also estimate the correlations among these variables. Three observations emerge from the untabulated results. First, the two measures of NAS fees are correlated negatively with deal premium and positively with days to completions and the use of stock as a method of payment. Second, the correlation coefficient between nonaudit fees and audit fees is 0.322, suggesting that they are correlated but distinct from each other. Third, the correlation coefficients between control variables are generally below 0.50, indicating a minimal concern for multicollinearity.

4.2 Nonaudit services and deal premium

We report the estimated results from Equation (1) with deal premium (*PREMIUM*) as the dependent variable in Table 3. Consistent with our H1, we find a negative and significant coefficient on both NAS fee measures. The coefficient on the NAS fee magnitude measure (*TGT_NAUDFEE*) implies that a one-standard-deviation increase in *TGT_NAUDFEE* leads to a decrease in deal premium of 0.022, accounting for 5.98% of the sample mean. Similar economic significance is also found for the NAS fee ratio measure: a one-standard-deviation increase in *TGT_NAUDFEE%* is associated with a decrease in deal premium of 0.027, accounting for 7.34% of the sample mean. Given the sample mean of 2,588 million for targets' market value, the effect amounts to $57 or $70 million in value loss, signifying an economically significant implication of

targets' NAS fees for deal valuation. This suggests that acquirers tend to reduce deal value of targets that have strong NAS relationship with incumbent auditors, consistent with acquirers perceiving nonaudit services as a detriment to auditor independence.

On one hand, audit fees can help create the economic bond between the audit and the client that might affect auditor independence (Kinney and Libby 2002). On the other hand, auditors earn less rents from providing audit services due to the regulated and more competitive audit market. Also, audit fees are more likely to reflect effort in engagements (Srinidhi and Gul 2006). Thus, the impact of audit fees on auditor independence is an empirical issue. We find that the coefficients on audit fees are negative but not significant, suggesting little impact of targets' audit fees on acquirers' decision regarding deal premium.

Consistent with Skaife and Wangerin (2013), we find that small targets relative to acquirers receive higher deal premium and targets with higher market-to-book ratio and better accounting performance receive lower deal premium. One possible explanation for the latter finding is that these firms have higher stock price. We further find that tender offer deals, hostile deals, and deals with multiple bids generate higher deal premium to targets.

4.3 Nonaudit services and days to completion

In the transactional due diligence stage, the acquirer has extensive access to the target's private information to verify the representations and warranties made by the target in the acquisition agreement. The length and intensiveness of this fact-finding process critically hinge on the acquirer's confidence in the target's financial information. We hypothesize that the doubt about the target's auditor quality associated with NAS fees can turn into more time and effort in this process. The estimated results of Equation (1) with days to completion (*DAYCOMP*) as the dependent variable are reported in Table 4. Consistent with H2, we find that the coefficients on the two NAS

fee measures are positive and significant. To put the estimations in economic perspective, a one-standard-deviation increase in the magnitude of NAS fees (*TGT_NAUDFEE*) is associated with a 5.24% increase in time to deal completion (from the deal announcement date to the deal resolution date), translating into about seven (mean value of days to completion 127.272 * 0.0524 = 6.67) more days, and the corresponding increase is 3.90% for NAS fee ratio (*TGT_NAUDFEE*) with approximately five extra days to deal completion.

Turning to coefficients on the control variables, we find that the economic bonds created through audit fees in the target prolongs the transactional due diligence process. We also find that deals with large acquirers merging small targets take less time and effort for due diligence. Consistent with the notion that deals with collar provision are riskier, we find a positive association between the existence of collar provision and days to completion. We further find that tender offer deals require less time to complete and hostile deals take more time.

4.4 Nonaudit services and method of payment

We hypothesize that doubts over the target's audit quality in relation to NAS fees increase the concern about misvaluation, leading to a higher likelihood of the use of stock as a method of payment that allows the acquirer and target shareholders to share the gains and losses in the combined entity occurring from the misvaluation. The results on method of payment estimated from Equation (2) is reported in Table 5. As hypothesized, we find a positive relation between NAS fees and the use of stock as a method of payment. For economic significance, a one-standard-deviation increase in the magnitude of NAS fees (NAS fee ratio) leads to an increase of 0.022 (0.053) in the likelihood of using stock payment, accounting for 3.97% (9.67%) of the sample mean. Thus, we find supportive evidence for H3.

Regarding coefficients on the control variables, we find a positive relation between targets' audit fees and the use of stock as a method of payment. Consistent with financial constraints limiting acquirers' ability to pay in all cash, we find that small acquirers and acquirers with financial losses are more likely to use stock payment. We also find that a deal is more likely to be consummated in the form of stock payment if it involves a large target relative to the acquirer. In line with the notion that a riskier deal is more likely to have collar provision, we find a positive relation between the use of collar provision and the use of stock as a payment method.

4.5 Cross-sectional tests

We argue that the acquirer is dubious of audit quality if the target has a strong NAS tie with its auditor. This doubt would be stronger when the target is more incentivized to manage earnings (such as in high financial distress risk) and its auditor faces less risk to acquiesce to its accounting choices (such as when opaque information environment makes earnings management less likely to be discovered). Using Ohlson's (1980) O-score and financial loss as proxies for the target's financial distress risk and bid-and-ask spread as a proxy for the target's information environment transparency, we conduct a principal component analysis to extract the common factor of the three variables. We use this composite measure (*DOUBT*) to represent the extent to which the acquirer is concerned about the target's audit quality.

We partition our sample into two subsamples based on the annual medians of *DOUBT* and estimate Equation (1) separately for each subsample. As reported in Table 6, targets' NAS fees are negatively associated with deal premium only in the subsample with high *DOUBT*, and the differences in the coefficients on the NAS fees measures between the two subsamples are statistically significant. For the time and effort taken for due diligence verification, we find positive relations between targets' NAS fees (both magnitude and ratio) and days to completion in the

subsample with high *DOUBT*. In the subsample with low *DOUBT*, only the magnitude measure of NAS fees is marginally associated with days to completion. The difference is significant only for the NAS fee ratio measure. Similarly, for method of payment, the difference between high *DOUBT* and low *DOUBT* subsamples is significant for the NAS fee ratio measure only. Thus, we find some evidence consistent with H4. Overall, the documented associations are moderated as theory predicts, which helps establish a causal relation from targets' NAS fees to deal outcomes (Bloomfield, Nelson, and Soltes 2016).

4.6 Nonaudit fee components

SEC (2000) requires public companies to separately report four types of fees for services received from incumbent auditors: audit fees, audit-related fees, tax services fees, and all other fees. The last three are grouped together as nonaudit services fees.[7] Prior studies find that different types of fees can have different impact on auditor independence. Paterson and Valencia (2011) find a positive relation between audit-related fees and restatements and some evidence on the negative relation between tax nonaudit fees and restatements. Carcello et al. (2020) find that the relation between NAS fees and goodwill impairments are driven by audit-related fees.

We estimate Equation (1) by replacing each NAS fee variable with the corresponding three types of NAS fees and report the estimated results in Table 7. Across all six model specifications, we find a dominant effect of audit-related NAS fees. Only in two cases do we find that the ratio of tax fees to total fees is negatively related to deal premium and positively related to the use of stock payment. We fail to find evidence on the effect of other NAS fees. One possible explanation for

[7] Audit fees include only those fees for services necessary in the audit of 10-Ks and the review of 10-Qs. Audit-related fees are for assurance and related services including, among others, employee benefit plan audits, due diligence procedures related to M&As, internal control review, accounting consultations and audits in connection with acquisitions, attest services that are not required by statute or regulation and consultation concerning financial accounting and reporting standards. Tax services fees include fees for tax compliance, tax planning, and tax advice.

the dominant effect of audit-related fees can be found in the SEC's independence rules (Carcello et al. 2020). The SEC (2003) establishes that "an accountant is not independent if, at any point during the audit and professional engagement period, any audit partner, other than specialty partners, earns or receives compensation based on selling engagements to that audit client, to provide any services, other than audit, review, or attest services." This suggests that audit partners could potentially benefit from the sale of services that are considered audit-related, but less likely from other services. Thus, audit-related NAS fees feature high among all the fees as more of a concern.

4.7 Robustness checks

We are less concerned about the possibility of reverse causality in our setting as it is unlikely that deal outcomes drive the target's NAS fees. Not only is there a time lag between deal outcome decisions and the target's NAS decisions (we use the target's NAS fees in the year before the deal announcement), but these two decisions are also made by different parties. Some may argue that the target could reduce NAS fees to influence the acquirer's perception of auditor independence in anticipation of an acquisition. Erickson and Wang (1999) argue and find that this strategy rarely works as targets generally have difficulty anticipating if and when they will receive a bid. Nevertheless, to rule out this possibility, we conduct two tests. We first check whether there is a systematic reduction in NAS fees before the deal announcement. We fail to find this is the case, as the median change of NAS fees in the two consecutive fiscal years prior to the deal announcement is zero. Second, we measure NAS fees as the three-year average before the deal announcement and our results remain qualitatively the same.[8]

[8] In the regression of *PREMIUM*, the coefficient on three-year averaged *TGT_NAUDFEE* (*TGT_NAUDFEE%*) is -0.009 (-0.214) with one-tailed p-value of 0.026 (0.005). In the regression of *DAYCOMP*, the coefficient on three-year averaged *TGT_NAUDFEE* (*TGT_NAUDFEE%*) is 2.733 (44.952) with one-tailed p-value of 0.007 (0.013). In

Our major endogeneity concern lies in correlated omitted variables bias. Some factors, such as managerial quality and corporate governance, may affect both targets' NAS fees and deal outcomes. The results on multiple M&A outcomes and cross-sectional variation can to some extent alleviate this concern because it sets a higher hurdle for correlated omitted variables to drive all these results. Nevertheless, we conduct four tests to address this concern. First, given that more able managers may need less advices from their auditors (low NAS fees) and their firms are more likely to have better deal outcomes, we control for managerial ability. We use ranked managerial ability score developed by Demerjian, Lev, and McVay (2012) to proxy for overall managerial ability, and find the main results remain largely unchanged (untabulated). Second, if effective governance reduces NAS purchases and ensures better deal outcomes, we may observe a mechanical relation between the target's NAS and deal outcomes. As large shareholders monitor both board of directors and managers, we use large shareholders' monitoring to proxy for governance strength (Liu, Low, Masulis, and Zhang 2020). After controlling for the number of blockholders, we obtain similar results (untabulated).

Third, several prior studies document an effect of targets' accounting quality, mostly accruals quality, on M&A deal outcomes (Marquardt and Zur 2015; Raman et al. 2013; McNichols and Stubben 2015; Skaife and Wangerin 2013), although there is very limited evidence on the effect of NAS fees on accruals quality. To test whether NAS fees have incremental effect on deal outcomes, we control for accruals quality. We use the absolute abnormal accruals estimated from the modified Dechow and Dichev (2002) model based on industry-year panel data.[9] Untabulated

the regression of *STOCKOFFER*, the coefficient on three-year averaged *TGT_NAUDFEE* (*TGT_NAUDFEE%*) is 0.007 (0.305) with one-tailed p-value of 0.088 (0.001).

[9] Specifically, we use the following model to obtain abnormal accruals: $TAA_t = a_0 + a_1 CFO_{t-1} + a_2 CFO_t + a_3 CFO_{t+1} + a_4 \Delta REV_t + a_6 PPE_t + \varepsilon_t$, where TAA_t is total accounting accruals, computed as the difference between income before

results show that the effect of NAS fees is not subsumed by accruals quality. This is not surprising given that accruals choice is only one of the channels that managers use to meet their reporting goals while auditors' professional responsibilities also include scrutinizing other possible channels such as off-balance sheet items, classification shifting, and opaque notes accompanying financial statements (Callen and Fang 2017).

Lastly, we further employ 2SLS estimations to address other unidentified correlated omitted variables. In the first stage, we model the target's NAS decision by regressing the NAS fee measures on the determinants of NAS fees and two instrumental variables. After obtaining the predicated value of NAS fee measure, we use it in the second stage. The critical part of 2SLS is to find at least one valid instrumental variable that satisfies both relevance (related to NAS) and exclusion requirements (not related to deal outcomes). We use two instrumental variables: the existence of foreign operations in the target and an indicator variable based on whether NAS fee measures of all clients of the target's auditor local office exclusive of the target itself is higher or lower than the annual medians[10]. The rationale for the choice of these two instrumental variables is as follows: (1) firms with international operations may need more advices from auditors, (2) if a local office tends to provide greater nonaudit services to other clients, it is more likely to sell them to the target, and (3) there is no strong economic reason to believe that foreign operations and other firms' NAS fees affect M&A deal outcomes through channels other than the target's NAS fees.

We report the first stage results in Panel A of Table 8 and the second stage results in Panel B. Across all models in the first stage, we find positive and significant relations of NAS fee measures

extraordinary items and operating cash flow (*CFO*); ΔREV_t is change in sales; PPE_t is gross property, plant, and equipment. All variables are scaled by total assets (TA_{t-1}).

[10] The median of all audit offices is calculated based on the Audit Analytics nonaudit fee population.

with the existence of foreign operations and the auditor local office NAS fees. In the second stage, we find that our results remain unchanged after using the 2SLS to control for endogeneity.

5. Post-Acquisition Analyses

5.1. Nonaudit services and divestiture

Empirical evidence has so far been supportive of the notion that acquirers associate targets' NAS purchases with diminished auditor independence and audit quality. To explore whether the NAS provision affects actual deal quality, we examine post-acquisition performance. If the target's NAS purchases indeed compromise auditor independence and reduce audit quality, the effect should be reflected in the consequential outcome of the M&A deals. Prior studies find that poor quality deals are more likely to experience post-acquisition divestiture (Kaplan and Weisbach 1992; Francis and Martin 2009).

We obtain data on divestiture from SDC. Following Francis and Martin (2009), we identify a divestiture if an acquiring firm divest a subsidiary in the same 4-digit SIC industry as the target firm in the five years after the completion of the deal. There are 126 (or 14%) firms that experience post-acquisition divestiture and we code these deals as having a value of one for an indicator variable, *DIVEST*. We alter Equation (1) in two ways: (1) adding time to completion as a control variable given that the extent of due diligence can affect deal quality (Wangerin 2019); and (2) using an *DIVEST* as the dependent variable. As shown in Table 9, we find a positive and significant association between NAS fee ratio and divestiture and a positive but insignificant relation between the magnitude of NAS fees and divestiture. Therefore, there is some evidence that the target's NAS purchases are related to the actual deal quality measured in terms of post-merger divestiture, suggesting that NAS is related to factual impairment of auditor independence.

5.2 Nonaudit services and goodwill impairment

We use another measure, goodwill impairment, to gauge the actual deal quality. Inaccurate assessment of the target and merge synergy, and/or unsuccessful integration processes can lead to goodwill impairments. If the target's NAS purchases harm audit quality, leading to less accurate evaluation of the target and more difficulties in integration, we should see a positive relation between the target's NAS fees and post-acquisition goodwill impairment.

We measure goodwill impairment as the natural logarithm of total goodwill impairment losses (*LNGWIP*) in the five years after deal completion. The mean value of *LNGWIP* is 2.685. We use *LNGWIP* as the dependent variable and control for deal premium in addition to the controls in Equation (1). We report the estimated results in Table 9. Both NAS fee measures are positively related to the amount of goodwill impairment. The results support that the target's NAS purchases reduce actual deal quality, as evidenced by the larger amount of post-acquisition goodwill impairment.

6. Conclusion

The market for corporate control has an important demand for accounting information beyond that associated with equity markets and debt markets. Although deal valuations highly rely on accounting numbers and auditors serve a critical role in verifying company financial statements, the auditor effect on M&A decisions arising from the assurance role is under-studied. We examine the relation between targets' NAS purchases from incumbent auditors and M&A outcomes, which is essentially a joint test of the two hypotheses that audit quality affects M&A outcomes and that the NAS provision impairs auditor independence and reduces audit quality.

We find that targets' NAS fees are negatively related to deal premium and positively related to the time and effort taken for due diligence verification and the use of stock as a method of payment. These associations are stronger in situations where targets are more incentivized to manage

earnings and auditors face less risk to acquiesce to client pressure. The documented effects mostly arise from audit-related fees. We further find that targets' NAS fees negatively affect deal quality measured by post-acquisition divestiture and goodwill impairment, providing some evidence on the factual compromised auditor independence and audit quality. The overall results suggest that (1) audit quality has effect on multiple aspects of an M&A transaction and (2) targets' NAS relation with their auditors is detrimental to auditor independence and audit quality.

Appendix: Variable Definition

Dependent variables		
PREMIUM	=	Percentage difference between the bid price offered and the target's trading price one calendar week earlier, as calculated by SDC.
DAYCOMP	=	Natural logarithm of the number of days from deal announcement to deal completion.
STOCKOFFER	=	1 if a deal involves the use of stock as a method of payment; 0 for all cash payment.
DIVEST	=	1 if acquirer divests a subsidiary in the same 4-digit SIC industry as the target firm within the five years after the deal completion; 0 otherwise.
LNGWIP	=	Natural logarithm of total goodwill impairment losses in the five years subsequent to deal completion.
Variables of interest		
TGT_NAUDFEE	=	Natural logarithm of target's non-audit fees in the fiscal year end prior to the deal announcement.
TGT_NAUDFEE%	=	Percentage of target's non-audit fees over target's audit fees in the fiscal year end prior to the deal announcement.
Control variables		
TGT_AUDFEE	=	Natural logarithm of target's audit fees in the fiscal year end prior to the deal announcement.
LNMV	=	Natural logarithm of acquirer's market value in the fiscal year end prior to the deal announcement.
MTB	=	Acquirer's market value of equity, divided by book value of total assets as of the fiscal year end prior to the deal announcement.
ROA	=	Acquirer's return on assets, measured as income before extraordinary items, divided by total assets as of the fiscal year end prior to the deal announcement.
LOSS	=	1 if acquirer's return on assets is less than zero, 0 otherwise.
LEV	=	Acquirer's leverage, measured as total liabilities divided by total assets as of the fiscal year end prior to the announcement.
RELMV		The relative market value of target over acquirer, measured as the market value of target divided by the market value of acquirer as of the fiscal year end prior to the announcement.
TGT_MTB	=	Target's market value of equity, divided by the book value of total assets as of the fiscal year end prior to the deal announcement.
TGT_ROA	=	Target's return on assets, measured as income before extraordinary items, divided by total assets as of the fiscal year end prior to the deal announcement.
TGT_LEV	=	Target's leverage, measured as total liabilities divided by total assets as of the fiscal year end prior to the announcement.
TGT_BIGN	=	1 if the target's auditor is a big N auditor, 0 otherwise.
PCTBUY	=	Percentage sought to be purchased by acquirer.
TENDER	=	1 if a bid is structured as a tender offer, 0 otherwise.
HOSTILE	=	1 if a bid is classified as hostile, 0 otherwise.
COLLAR	=	1 if a deal includes a collar provision that restricts the value and/or amount of equity shares to be exchanged in the bid, 0 otherwise.
MULTIBID	=	1 if there are more than one bidder in an auction, 0 otherwise.

SAMEIND	=	1 if the acquirer and the target are in the same Fama-French-12 industry group, 0 otherwise.
SAMEAUD	=	1 if the acquirer and the target share the same auditor at the city level, 0 otherwise.
DOUBT	=	The principal component analysis-extracted common factor of three variables: O-score, LOSS, and BidAsk. O-score is Ohlson's bankruptcy score, calculated as -1.32 - 0.407*log(total assets/PPI) + 6.03 * (total liabilities/total assets) - 1.43*(working capital/total assets) + 0.0757*(current liabilities/current assets) - 1.72*X - 2.37*(net income/total assets) - 1.83*(operating cash flows/total liabilities) + 0.285*Y - 0.0521*change in net income, where PPI is price index; X = 1 if LT > AT and 0 otherwise; and Y=1 if the total of NI for years *t* and *t*-1 is negative and 0 otherwise. BidAsk is the average bid-and-ask spread in the year prior to the deal announcement. All three variables are calculated based on target's data.
FOREIGN	=	1 if target's pre-tax foreign income is nonmissing; 0 otherwise.
TGT_OFFNAFEE	=	1 if target's local office's nonaudit fees excluding target itself is larger than the median of all audit office in Audit Analytics fee data; 0 otherwise.

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Table 1
Sample Selection Procedure

Acquisitions reported by SDC from January 1, 2003 to December 31, 2019 with U.S. public acquirers	41,096	
Exclude:		
Leveraged buyouts, spinoffs, exchange offers, repurchases, etc.	(4,387)	
Value of transaction less than $1 million	(18,922)	
Missing acquiror Permno and GVKEY	(2,808)	
Missing targets' auditing data in Audit Analytics	(13,269)	
Acquirers and targets in financial industries	(455)	
Missing other financial variables and M&A related data	(662)	
Final sample	1,048	
For different tests:		
Method of payment		1,048
Acquisition premium		1,021
Days to completion		903

Table 2
Descriptive Statistics

Variables	Mean	Median	Q1	Q3	Std Dev
TGT_NAUDFEE	10.286	11.665	10.127	12.805	4.364
TGT_NAUDFEE%	0.158	0.117	0.028	0.243	0.158
PREMIUM	0.368	0.300	0.170	0.470	0.338
DAYCOMP	4.656	4.635	4.220	5.075	0.623
STOCKOFFER	0.549	1.000	0.000	1.000	0.498
TGT_AUDFEE	13.790	13.803	13.082	14.492	1.204
LNMV	8.423	8.236	7.062	9.866	1.975
MTB	3.990	2.617	1.736	4.136	5.407
ROA	0.035	0.050	0.017	0.085	0.115
LOSS	0.173	0.000	0.000	0.000	0.378
LEV	0.528	0.526	0.382	0.663	0.219
RELMV	0.354	0.177	0.043	0.485	0.469
TGT_MTB	3.056	2.199	1.365	3.632	4.060
TGT_ROA	-0.047	0.024	-0.048	0.065	0.227
TGT_LEV	0.499	0.486	0.282	0.678	0.266
TGT_BIGN	0.812	1.000	1.000	1.000	0.391
PCTBUY	98.754	100.000	100.000	100.000	6.421
TENDER	0.189	0.000	0.000	0.000	0.392
HOSTILE	0.019	0.000	0.000	0.000	0.137
COLLAR	0.033	0.000	0.000	0.000	0.179
MULTIBID	0.089	0.000	0.000	0.000	0.285
SAMEIND	0.777	1.000	1.000	1.000	0.417
SAMEAUD	0.066	0.000	0.000	0.000	0.249

This table presents the summary statistics of the variables used in our primary analyses. See variable definitions in Appendix. We winsorize continuous variables at the 1st and 99th percentiles.

Table 3
Targets' Nonaudit Services and Deal Premium

	Dependent variable:	*PREMIUM*
Intercept	0.0231	0.140
	[0.11]	[0.66]
TGT_NAUDFEE	**-0.005*****	
	[-2.02]	
TGT_NAUDFEE%		**-0.170*****
		[-2.74]
TGT_AUDFEE	-0.003	-0.012
	[-0.19]	[-0.77]
LNMV	0.015*	0.016*
	[1.84]	[1.93]
MTB	0.000	0.001
	[0.19]	[0.23]
TGT_MTB	-0.009***	-0.009***
	[-3.61]	[-3.59]
TGT_ROA	-0.310***	-0.299***
	[-4.02]	[-3.86]
TGT_BIGN	-0.015	-0.017
	[-0.47]	[-0.52]
RELMV	-0.061**	-0.060**
	[-2.17]	[-2.1]
PCTBUY	0.004***	0.003***
	[3.03]	[2.92]
TENDER	0.084***	0.081***
	[2.89]	[2.78]
HOSTILE	0.144*	0.142*
	[1.92]	[1.91]
COLLAR	0.056	0.057
	[0.89]	[0.91]
MULTIBID	0.139***	0.138***
	[2.99]	[2.99]
SAMEIND	0.010	0.010
	[0.44]	[0.46]
SAMEAUD	-0.038	-0.038
	[-1.28]	[-1.32]
Industry FE	Yes	Yes
Year FE	Yes	Yes
Obs.	1,021	1,021
Adjusted R^2	0.177	0.179

This table presents the OLS estimations of Equation (1) that examines the association between targets' nonaudit services and deal premium. *T-statistics* reported in bracket are based on heteroskedasticity-robust standard errors. ***, **, * indicate significance at the 1%, 5% and 10% levels based on a one-tailed test for the coefficients on *TGT_NAUDFEE* and *TGT_NAUDFEE%* and a two-sided test for the other variables, respectively. See variable definitions in Appendix.

Table 4
Targets' Nonaudit Services and Time to Deal Completion

	Dependent variable:	*DAYCOMP*
Intercept	3.692***	3.500***
	[7.10]	[6.65]
TGT_NAUDFEE	**0.012*** **	
	[2.79]	
TGT_NAUDFEE%		**0.247** **
		[2.22]
TGT_AUDFEE	0.089***	0.106***
	[2.70]	[3.13]
LNMV	-0.013	-0.014
	[-1.11]	[-1.12]
MTB	0.000	0.000
	[-0.01]	[-0.08]
TGT_MTB	-0.004	-0.004
	[-0.91]	[-0.98]
TGT_ROA	0.122	0.114
	[1.52]	[1.43]
TGT_BIGN	-0.008	-0.001
	[-0.16]	[-0.01]
RELMV	0.166***	0.163***
	[3.38]	[3.21]
PCTBUY	-0.002	-0.002
	[-0.59]	[-0.52]
TENDER	-0.594***	-0.594***
	[-13.15]	[-13.17]
HOSTILE	1.089***	1.11***
	[2.68]	[2.72]
COLLAR	0.228***	0.23***
	[2.64]	[2.64]
MULTIBID	0.141	0.147
	[1.47]	[1.55]
SAMEIND	0.085**	0.086**
	[2.27]	[2.29]
SAMEAUD	-0.012	-0.015
	[-0.17]	[-0.21]
Industry FE	Yes	Yes
Year FE	Yes	Yes
Obs.	903	903
Adjusted R^2	0.403	0.401

This table presents the OLS estimations of Equation (1) that examines the association between targets' nonaudit services and time to deal completion. *T-statistics* reported in bracket are based on heteroskedasticity-robust standard errors. ***, **, * indicate significance at the 1%, 5% and 10% levels based on a one-tailed test for the coefficients on *TGT_NAUDFEE* and *TGT_NAUDFEE%* and a two-sided test for the other variables, respectively. See variable definitions in Appendix.

Table 5
Targets' Nonaudit services and Method of Payment

	Dependent variable:	*STOCKOFFER*
Intercept	-0.747	-0.927
	[3.00]	[-3.73]
TGT_NAUDFEE	**0.005****	
	[1.73]	
TGT_NAUDFEE%		**0.336*****
		[4.12]
TGT_AUDFEE	0.065***	0.079***
	[4.63]	[5.60]
LNMV	-0.036***	-0.039***
	[-3.77]	[-4.00]
MTB	0.001	0.001
	[0.54]	[0.48]
ROA	-0.018	-0.010
	[-0.11]	[-0.07]
LOSS	0.119**	0.129***
	[2.51]	[2.74]
LEV	-0.001	0.003
	[-0.01]	[0.05]
TGT_MTB	0.005	0.005
	[1.48]	[1.63]
TGT_ROA	-0.199***	-0.225***
	[-2.89]	[-3.26]
TGT_BIGN	0.020	0.016
	[0.53]	[0.42]
RELMV	0.203***	0.197***
	[5.39]	[5.26]
PCTBUY	-0.003	-0.003
	[-1.53]	[-1.48]
TENDER	-0.184	-0.175
	[-4.87]	[-4.68]
HOSTILE	-0.053	-0.054
	[-0.51]	[-0.53]
COLLAR	0.370***	0.361***
	[9.83]	[9.51]
MULTIBID	-0.049	-0.051
	[-1.04]	[-1.11]
SAMEIND	0.045	0.043
	[2.31]	[2.45]
SAMEAUD	0.109**	0.116**
	[2.31]	[2.45]
Industry FE	Yes	Yes

Year FE	Yes	Yes
Obs.	1,048	1,048
Adjusted R^2	0.313	0.321

This table presents the OLS estimations of Equation (2) that examines the association between targets' nonaudit services and the use of stock as payment method. *T-statistics* reported in bracket are based on heteroskedasticity-robust standard errors. ***, **, * indicate significance at the 1%, 5% and 10% levels based on a one-tailed test for the coefficients on *TGT_NAUDFEE* and *TGT_NAUDFEE%* and a two-sided test for the other variables, respectively. See variable definitions in Appendix.

Table 6

Targets' Nonaudit Services and M&A Deal Outcomes: Cross-sectional Tests

Dependent Variable	*PREMIUM*		*DAYCOMP*		*STOCKOFFER*	
Subsample: DOUBT = High						
TGT_NAUDFEE	**-0.011*** **		**0.015*** **		**0.004**	
	[-2.60]		**[2.60]**		**[0.89]**	
TGT_NAUDFEE%		**-0.467*** **		**0.539*** **		**0.390*** **
		[-4.25]		**[3.36]**		**[3.96]**
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	491	491	435	435	514	514
Adjusted R^2	0.148	0.162	0.369	0.374	0.321	0.322
Subsample: DOUBT = Low						
TGT_NAUDFEE	**0.004** **		**0.008***		**0.003**	
	[1.80]		**[1.36]**		**[0.71]**	
TGT_NAUDFEE%		**0.103** **		**0.025**		**0.171***
		[1.70]		**[0.18]**		**[1.48]**
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	505	505	448	448	514	514
Adjusted R^2	0.137	0.137	0.443	0.439	0.319	0.320
Non-audit fee coefficient difference (DOUBT =High vs. DOUBT =Low)						
t-stat.	-3.04	-4.54	0.79	2.45	-0.10	-1.45
one-tailed p-value	0.001***	0.000***	0.215	0.007***	0.462	0.074*

This table presents the results on the cross-sectional variation in the associations between targets' nonaudit services and M&A deal outcomes (*PREMIUM*, *DAYCOMP* and *STOCKOFFER*). *DOUBT* is high if its value is above the annual medians of the sample and low otherwise. *T-statistics* reported in bracket are based on heteroskedasticity-robust standard errors. ***, **, * indicate significance at the 1%, 5% and 10% levels based on a one-tailed test for the coefficients on *TGT_NAUDFEE* and *TGT_NAUDFEE%* and a two-sided test for the other variables, respectively. See variable definitions in Appendix.

Table 7
Targets' Nonaudit Service Components and M&A Deal Outcomes

Dependent Variable	*PREMIUM*		*DAYCOMP*		*STOCKOFFER*	
TGT_AUDRELFEE	-0.006***		0.004***		0.010***	
	[-3.15]		[5.05]		[3.84]	
TGT_TAXFEE	-0.003		0.003		-0.001	
	[-1.35]		[1.28]		[-0.57]	
TGT_OTHFEE	0.003		0.075		0.002	
	[1.45]		[0.72]		[0.68]	
TGT_AUDRELFEE%		-0.196***		0.395**		0.474***
		[-2.01]		[2.06]		[3.63]
TGT_TAXFEE%		-0.174***		0.180		0.258**
		[-1.94]		[1.19]		[2.11]
TGT_OTHFEE%		-0.104		0.284		0.397
		[-0.65]		[0.85]		[1.45]
Other Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,021	1,021	903	903	1,048	1,048
Adjusted R^2	0.183	0.177	0.417	0.400	0.320	0.321

This table presents the OLS estimations examining the associations between targets' nonaudit service components: audit-related fees (*TGT_AUDRELFEE*), tax service fees (*TGT_TAXFEE*) and other fees (*TGT_OTHFEE*) and M&A deal outcomes (*PREMIUM*, *DAYCOMP* and *STOCKOFFER*). *T-statistics* reported in bracket are based on heteroskedasticity-robust standard errors. ***, **, * indicate significance at the 1%, 5% and 10% levels based on a one-tailed test for the coefficients on *TGT_AUDRELFEE, TGT_TAXFEE, TGT_OTHFEE, TGT_AUDRELFEE%, TGT_TAXFEE%,* and *TGT_OTHFEE%* and a two-sided test for the other variables, respectively. See variable definitions in Appendix.

Table 8
Targets' Nonaudit Services and M&A Deal Outcomes: 2SLS

Panel A. First stage Dependent Variable	*TGT_NAUDFEE* (1)	*TGT_NAUDFEE%* (2)	*TGT_NAUDFEE* (3)	*TGT_NAUDFEE%* (4)	*TGT_NAUDFEE* (5)	*TGT_NAUDFEE%* (6)
TGT_OFFNAFEE	**0.513****	**0.021****	**0.601****	**0.026*****	**0.466****	**0.022*****
	[2.02]	**[2.24]**	**[2.16]**	**[2.63]**	**[1.85]**	**[2.42]**
FOREIGN	**1.037*****	**0.038*****	**1.10*****	**0.039*****	**1.01*****	**0.037*****
	[3.52]	**[3.48]**	**[3.43]**	**[3.35]**	**[3.43]**	**[3.43]**
TGT_AUDFEE	0.549***	-0.040***	0.507***	-0.042***	0.587***	-0.040***
	[3.41]	[-6.71]	[2.95]	[-6.80]	[3.67]	[-6.80]
TGT_LNMV	0.624***	0.027***	0.590***	0.027***	0.575***	0.026***
	[5.48]	[6.43]	[4.79]	[5.96]	[5.09]	[6.27]
TGT_MTB	-0.108***	-0.003**	-0.106***	-0.003**	-0.090***	-0.003***
	[-3.41]	[-2.57]	[-2.92]	[-2.36]	[-2.86]	[-2.58]
TGT_ROA	-0.224	0.042*	-0.060	0.039*	-0.004	0.044**
	[-0.32]	[1.66]	[-0.08]	[1.45]	[-0.01]	[1.83]
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,016	1,016	898	898	1,043	1,043
Adjusted R^2	0.198	0.178	0.178	0.176	0.189	0.174

Panel B. Second Stage

Dependent Variable	*PREMIUM*		*DAYCOMP*		*STOCKOFFER*	
	(1)	(2)	(3)	(4)	(5)	(6)
TGT_NAUDFEE	**-0.052*** **		**0.117*** **		**0.085*** **	
	[-3.21]		**[3.87]**		**[3.38]**	
TGT_NAUDFEE%		**-1.535*** **		**3.405*** **		**2.104*** **
		[-3.76]		**[4.42]**		**[3.81]**
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	1,016	1,016	898	898	1,043	1,043
Adjusted R^2	0.133	0.130	0.267	0.254	0.233	0.230

This table presents 2SLS estimations examining the associations between targets' nonaudit services and M&A deal outcomes. Panel A reports the first-stage regression of each of six models (1) through (6) with *TGT_NAUDFEE* or *TGT_NAUDFEE%* as dependent variable, respectively. The first-stage regression includes two instrumental variables: *TGT_OFFNAFEE* and *FOREIGN*, and other determinants of nonaudit services. Panel B reports the second-stage regression of each of six models (1) through (6), corresponding to those in the first stage, and with *PREMIUM*, *DAYCOMP* or *STOCKOFFER* as dependent variable, respectively. *T-statistics* reported in bracket are based on heteroskedasticity-robust standard errors. ***, **, * indicate significance at the 1%, 5% and 10% levels based on a one-tailed test for the coefficients on *TGT_NAUDFEE* and *TGT_NAUDFEE%* and a two-sided test for the other variables, respectively. See variable definitions in Appendix.

Table 9
Targets' Nonaudit Services and Post-Acquisition Divestiture and Goodwill Impairment

Dependent Variable	*DIVEST*		*LNGWIP*	
TGT_NAUDFEE	**0.001**		**0.067****	
	[0.33]		**[2.19]**	
TGT_NAUDFEE%		**0.154****		**2.005****
		[2.10]		**[2.33]**
DAYCOMP	-0.037*	-0.039*		
	[-1.74]	[-1.87]		
PREMIUM			0.0003	0.001
			[0.08]	[0.17]
Other Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Obs.	894	894	562	562
Adjusted R^2	0.168	0.170	0.142	0.144

This table presents the OLS estimations examining the associations between targets' nonaudit services and the post-acquisition divestiture and goodwill impairment. Specifically, Equation (1) is estimated with *DIVEST* and *LNGWIP* as dependent variable, respectively. Additional controls, log of number days to completion (*DAYCOMP*), is added to estimate divestiture, M&A premium (*PREMIUM*), is included to estimate goodwill impairment. *T-statistics* reported in bracket are based on heteroskedasticity-robust standard errors. ***, **, * indicate significance at the 1%, 5% and 10% levels based on a one-tailed test for the coefficients on *TGT_NAUDFEE* and *TGT_NAUDFEE%* and a two-sided test for the other variables, respectively. See variable definitions in Appendix.