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Health and Healthcare in the Financial Reporting and Audit Environments

Landi Morris

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Committee Member: Gopal V. Krishnan

Signature_____

External Reviewer: Matt Ege

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Date: 4/14/2022

Health and Healthcare in the Financial Reporting and Audit Environments

Landi Morris

A dissertation
submitted in partial fulfillment of the
requirements for the degree of

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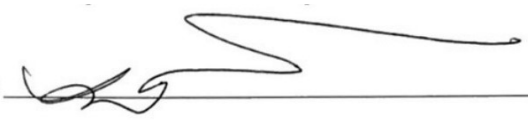
Signature 

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DEDICATION

To Joey, for encouraging me to try new things.

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ABSTRACT

Health and Healthcare in the Financial Reporting and Audit Environments

Landi Morris

Chair of the Supervisory Committee:
John E. Rhodes Professor of Accountancy, Rani Hoitash
Department of Accountancy

This dissertation is comprised of three papers that integrate analyses of health, health crises, and healthcare entities in the financial reporting and audit processes. The first paper considers how physical health influences audit outcomes via auditors' cognitive processing. The second paper considers a global health disruption that impacts the audit process. In the third paper, I examine financial and tax reporting of hospital entities. I describe each paper in further detail below.

The first paper, co-authored with Rani Hoitash, examines whether influenza (flu), a potential threat to the conduct of public company audits, is associated with audit outcomes. Because the peak months of flu season overlap with audit busy season, audit offices most impacted by the flu may be adversely affected. The demanding nature of audit busy season and the culture of audit firms may compel employees to go to work sick, a phenomenon known as presenteeism. When auditors go to work with flu-like symptoms, cognitive functioning is impaired. This impairment may influence auditors' ability to exercise judgment and professional skepticism, leading to adverse outcomes. Using data collected from the Centers for Disease Control and Prevention (CDC) we find that the filing of audit reports is delayed and audit quality suffers in audit offices most impacted by the flu. The observed effects of health impairments on company outputs have broad implications for both the audit profession and workplaces as a whole.

The second paper, co-authored with Rani Hoitash and Udi Hoitash, examines the likelihood and consequences of late filings during COVID-19. The COVID-19 pandemic introduced unprecedented challenges to the audits of public companies. In response, the SEC made available a unique one-time 45-day extension to file the audited annual report. We leverage the first year of the pandemic, in which audits completed prior to the national emergency serve as a control group, to execute a difference-in-differences design. We observe a significant increase in the likelihood of a late filing during the pandemic. We further manually identify late filings that are attributable to the auditor. Utilizing this data, we observe a decline in audit quality only when the delay is not attributed to the auditor, indicating that auditor-provoked delays are effective in maintaining quality. Additionally, while we observe an increase in the number of new modified going concern opinions, we also observe a decline in the number of Type I going concern errors made by auditors during the pandemic. Our study informs regulators about the impact of the unprecedented SEC filing extensions.

The third paper, sole-authored, focuses on reporting by a healthcare entity: hospitals. This paper examines extant research on hospital reporting and offers suggestions for future research. Early hospital studies have compared and evaluated financial reporting and other outcomes between different hospital ownership types, while more recent research has focused on non-profit hospital reporting. Within the latter topic, I synthesize studies that examine tax-exemption, its benefits, audits, and the competing incentives of non-profit management. For each subsection, I identify potential data sources and future research opportunities. I conclude that there is ample opportunity for meaningful research in this field of the nonprofit and accounting literatures.

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PART I: WORKING WITH THE FLU: THE ASSOCIATION BETWEEN AUDITOR HEALTH AND AUDIT OUTCOMES

I. INTRODUCTION

Influenza (the flu) infects as many as 60.8 million people in the U.S. each year (CDC, 2017), or approximately 20 percent of the population. The magnitude of individuals with the flu results in significant productivity loss in the workplace, where employees lose 69 percent of expected working hours while sick with the flu (Van Wormer et al., 2017). As auditing requires high cognitive functioning, a capability that is impaired when auditors are sick, we predict that audit firms are highly susceptible to the costly effects of influenza. Flu season peaks in the months of December through March and therefore directly overlaps with audit busy season.[1] Although the timing of the flu is consistent year-to-year, the severity and distribution of the disease vary over time and across states. This study considers the costly impact of the flu on auditors' work. Our findings have important policy implications for public accounting firms, who may consider what firm or busy-season characteristics incentivize auditors to work while sick.

Employees sick with the flu often go to work sick, an act referred to as presenteeism, which limits their productivity on the job (Goetzel et al., 2004; Hemp, 2004; Hansen and Anderson, 2008; Schultz et al., 2009; Petrie et al., 2016). Anecdotal evidence suggests that auditors rarely stay at home when sick. To corroborate this, we conduct an exploratory survey, the results of which identify that 87 percent of auditors go to work

[1] Most reported flu hospitalizations are of adults ages 18-64 (CDCF, 2018), the same working population that comprises employees of public accounting firms.

while sick.[2,3] Among other debilitating physical conditions, presenteeism is characterized by an influenza-induced phenomenon commonly referred to as "brain fog," a symptom that reduces alertness, memory, and accuracy (Smith et al., 2004). Audit work requires judgment, professional skepticism, and overall high cognitive functioning, and thus, brain fog may negatively influence auditors' work. We predict that when auditors go to work sick with the flu audit report lag will be prolonged and audit quality will suffer.

Our investigation is motivated by the human capital and pharma-economic literatures. The capacity of human capital is critical to corporate success (Schultz, 1961; Becker, 1962), and health is a critical component of human capital (Grossman, 1972; Becker, 2007), with health directly influencing the function and effort that drive employee productivity (Bartel and Taubman, 1979). The importance of human capital to firm success extends to the auditing context (Bröcheler et al., 2004), where improvements in [audit] inputs lead to improvements in audit quality (Knechel et al., 2013). Likewise, impairments to employee capacity or capabilities, a key audit input, may lead to impairments in audit quality and other audit outcomes. We are not aware of any prior study that links the physical health of auditors to audit outcomes and aim to contribute to the health and human capital literatures by leveraging influenza as a measure of auditor health.

To test our predictions, we employ a broad sample of firm-year observations from 2008 – 2018. Our sample focuses on firms with a December 31st or January 31st year-end to ensure that the busy season of the audit engagement overlaps with flu season. Influenza

[2] The most popular drivers of this decision were anxiety about making up work upon return, approaching deadlines, and to avoid judgment by coworkers.

[3] While the 2019 coronavirus disease (COVID-19) introduced greater cognizance of the threat of flu-like illnesses, this study examines the pre-COVID-19 period, in which auditors were more likely to go to work while sick.

activity is measured using state-level data from the U.S. Department of Health and Human Services' Centers for Disease Control and Prevention (CDC) in the period that overlaps with audit busy season.[4] Our test variable is based on a combination of flu spread and severity, which varies significantly over time and across states. This variation is depicted in Figure 1, presenting the distribution of influenza for each state and year in the sample.

[INSERT FIGURE 1 HERE]

To further illustrate variation, during the 2008 flu season influenza activity ranged from low in Alabama to high in Virginia. During the 2011 flu season, Virginia's flu activity was low and Alabama's was widespread. In addition to its time-series and cross-sectional variation, influenza is exogenous to the audit, thereby reducing concerns of reverse causality.

Our first tests examine the association between the flu and audit delay. We document a positive association between influenza and non-timely filings, indicating a greater likelihood of significant delays when auditors are sick. We also identify a positive association between influenza and the time it takes to file the audited annual report, suggesting that when auditors are sick, it takes a longer amount of time to complete the audit. The economic significance of these estimations yields a 15.0 percent (9.2 percent) increase in the likelihood of a non-timely filing (length of the audit report lag) when moving from the 25th to 75th percentiles of influenza. A falsification test identifies no

[4] Our data source is one of many novel sources that allow for the study of cognitive processing constraints in accounting processes (Teoh, 2018). Our data source is also consistent with recent papers leveraging data from the U.S. census bureau or similar sources to make inferences about financial reporting and other business outcomes (e.g. McGuire et al., 2012; Call et al., 2017; Caskey and Ozel, 2017; Aobdia et al., 2018; Beck et al., 2018; Christensen et al., 2018; Chhaochharia et al., 2019).

association between flu and either measure of audit delay for clients whose audit does not directly overlap with flu season.

We use discretionary accruals and material weakness errors to measure audit quality. These proxies are indicative of auditor judgments that could be impaired by flu-induced brain fog. We find that influenza is associated with lower audit quality, yielding a 2.3 percent increase in discretionary accruals, 1.5 percent decrease in accruals quality, and 14.4 percent increase in the likelihood of material weakness errors when moving from the 25th to 75th percentiles of flu activity. This evidence suggests that audit quality suffers when flu outbreaks impair auditors' mental capacities.[5] We do not observe a significant association between influenza and audit quality for clients whose audit is completed outside of busy season and does not directly overlap with flu season. This strengthens our inferences of a significant detrimental effect of the flu on the conduct of audits.

Financial reporting quality and audit quality are not independent measures. Rather, the "two processes are interdependent and jointly determine the (observable) outcome." (Gaynor, Kelton, Mercer, and Yohn 2016, 2). Thus, the quality of the audit depends on the financial reporting quality of the client. We acknowledge that if the client is sick with the flu and financial reporting quality deteriorates, this may also impact the quality of the audit. This concern is common to most archival audit studies that rely on publicly available post-audit outcomes. Nevertheless, to address the concern that our results are primarily driven by the client being sick, rather than the auditor, we examine the association between influenza and the delay in filing of quarterly reports. As these filings are not subject to the

[5] We do not find a significant association between influenza and restatements, either due to the effects of influenza not being significant enough to result in a misstatement, or perhaps because auditors are able to direct their limited cognitive resources to the areas of highest audit risk. Past research recognizes that a restatement, albeit very important, is only one indicator of audit quality.

same level of assurance as annual filings, delays are thus more attributable to the client than the auditor. Using a sample of companies whose quarterly reports must be filed in flu season, we examine the association between influenza and non-timely quarterly reports and quarterly report lags. We do not find evidence of an association between influenza and either measure of quarterly filing delays. These results suggest that our findings are driven by the auditor being sick, rather than the client.

In additional analysis we find a positive association between flu outbreaks and audit production costs. This suggests that auditors who go to work sick are inefficient from brain fog and other effects of the disease. Engagement team inefficiencies are then passed along to the client through audit fees (Palmrose, 1989).[6] As a falsification test, we examine the association between influenza and total non-audit fees, as well as tax and other service fees. In contrast to the concentration of audit work around the fourth quarter (Christensen et al., 2020), revenues from non-audit services are earned more evenly throughout the year. We therefore do not expect to find an association between non-audit fees and influenza.[7] Our results are consistent with this expectation.

Our results hold after execution of multiple robustness tests. First, our findings are robust to a propensity score matched sample, assuaging concerns that our results are due to companies located in states with severe flu having inherently different characteristics from those in lower flu states. We next control for general health, a characteristic that, unlike the flu, does not vary drastically from year to year. Results are consistent with our

[6] A conversation with an audit partner identifies that total audit fees, after accounting for additional resource needs, typically exceed fees initially agreed-upon with the audit committee by 10-30 percent.

[7] While tax fees, a common source of non-audit fees, are also subject to flu season deadlines, most tax-related work performed during this period relates to audit provisions, while fees for tax preparation services for extended return deadlines are earned after flu season.

expectations and show no significant association between general health and audit delay or audit quality. This test highlights that negative health influences are a threat to the audit process while general health, a stickier and more predictable measure, is not.

In our next test, we address concerns that state flu vaccination efforts may bias cross-sectional variation in our analyses.[8] We do so by controlling for two additional measures. First, we control for the level of vaccine coverage in each state in our sample period. Second, we control for the state resources available to prevent the flu, via vaccination or treatment efforts, by including state individual tax rates in our analyses. We find that the association between influenza and our dependent variables are robust to the inclusion of both vaccine coverage and taxes. Next, as the flu may spread faster in states with higher population density, we control for this variable and find that our results are not sensitive to the inclusion of population density. Because the CDC data is available at a state-level, a possible concern is that auditors commute to work across states. To address this potential limitation, we estimate our models after removing states in bi- or tri-state metropolitan areas.[9] Our results are robust to this specification. Finally, we document that our results are robust to alternative measures of busy season and the flu, alternative sample composition, and controlling for office growth and education, documenting that our results are robust to additional factors that could be driving the observed associations.

Our findings offer important insights to the audit profession, with broader implications for the role of disease and other health impairments in quality and

[8] The influenza data from the CDC is ex-post, and thus already reflects vaccination efforts and efficacy. However, these tests are designed to assuage additional concerns.

[9] For example, the New York City tri-state area includes the states of New York, New Jersey, and Connecticut. The Philadelphia bi-state area includes Pennsylvania and New Jersey. We also exclude the Boston, Chicago, and DC areas.

productivity. Regulators and standard setters have a vested interest in understanding threats, including influenza and brain fog, to auditors' abilities to exercise strong judgment and decision making. The Center for Audit Quality (CAQ) cites high quality performance by public company auditors as one if its primary focuses. Additionally, Auditing Standard 1015 addresses auditors' due professional care in the performance of their work, stating that "the matter of due professional care concerns what the independent auditor does and how well he or she does it (PCAOB, 2002)." The flu can directly impair how well an auditor performs an audit, making influenza a threat to audit quality that regulators should be cognizant of.

The findings of this study are further informative to audit firms, who dedicate significant resources to manage and improve human capital and audit quality. Our conversations with human resources representatives of five international audit firms reveal that the firms offer flu shots for employees in their local offices.[10] This practice suggests that audit firms are invested in maintaining employee health.[11] The results of this study suggest that investments in preventative healthcare may not be sufficient to deter the negative consequences of employees going to work when sick. The negative consequences of influenza and presenteeism are not likely to be mitigated over time. Public accounting firms may consider how challenging cultures (Wyatt, 2004; Tysiac, 2020) and the rigorous

[10] There are four primary types of influenza virus. Within each type there are additional subtypes, lineages, and strains. While flu vaccines are available annually, they only protect against specific viruses included in the vaccine. As a result, vaccine efficacy is limited to the viruses the vaccine was designed to protect against. In the sample period reviewed in this study, 2008 – 2018, vaccine efficacy ranged from 19-60 percent, with an average of 43.8 percent (CDC, 2019c).

[11] Interestingly, four of the five firms that we spoke with do not distinguish between sick days and vacation time and therefore have no documentation about the direct impact of the flu on their organization.

nature of busy season (Cohn, 2013; Persellin et al., 2019) influence employees' decisions to go to work while sick.[12]

Outside of the auditing context, pharma-economics research has documented the significant macroeconomic cost burden of influenza (Keech et al., 1998; Stewart et al., 2003; Molinari et al., 2007; Keech and Beardsworth, 2008; Peasah et al., 2013; Petrie et al., 2016). We contribute to the burgeoning line of research examining the impact of the flu on company-level outputs (Dorner and Haller, 2020; Grinza and Rycx, 2020).[13] While the overlap between flu season and audit busy season makes the audit context an attractive setting in which to examine this association, the implications of this study may extend beyond audit firms to the flu season outputs of all companies.

The remainder of this paper is organized as follows. Section II describes further background and develops the hypotheses. Section III describes the research method and sample. Section IV presents the results of the study, Sections V and VI report additional analysis and tests of robustness, respectively. Section VII includes discussion and concluding remarks.

[12] Notably, the 2019-2020 flu season is dominated by COVID-19, which is more severe than the typical seasonal flu (Adhanom Ghebreyesus, 2020). With auditors working from home during lockdown, the impact of presenteeism on audit outcomes may be less pronounced in this period, especially because of greater awareness of the need to exercise social distancing and the social acceptance of using masks to reduce the spread of illnesses. While COVID-19 is beyond the scope of the current study, future research may consider how COVID-19 impacts audit work processes and audit quality.

[13] These studies examine the impact of the flu on company outputs in the German and Belgian settings. To the best of our knowledge, no study has examined this in the U.S. context.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

Human capital serves as a key indicator of firm performance (Schultz, 1961; Becker, 1962). Prior literature has documented the influence of human capital on audit outcomes, with a focus on the education and skill of audit labor pools. For example, Beck et al. (2018) examine local labor characteristics and find that audit quality is positively associated with the education level in the city where the audit office is located. Similarly, Sherwood et al. (2020) document a positive association between the number of non-CPAs and audit quality in a local office. Beyond the scope of audit research, the human capital literature recognizes health as a critical component (Grossman, 1972; Becker, 2007) and identifies that employee productivity is driven by skills and effort, with health directly influencing skills (Bartel and Taubman, 1979). With stronger and healthier human capital, the quality of a firm's outputs should improve. To the best of our knowledge, this has not been examined in the context of audit or accounting. We therefore examine the association between poor health and audit quality by studying the association between influenza outbreaks and audit outcomes.

There are two mechanisms by which influenza may negatively impact auditors' work. It is possible that the flu may impair auditors' health and force them to miss work, a phenomenon referred to as absenteeism in pharma-economics. Keech and Beardsworth (2008) find that employees miss up to 5.9 days of work due to the flu. The National Institute for Occupational Safety and Health reports that U.S. employees miss 17 million workdays due to the flu (NIOSH, 2018). When an auditor is absent during busy season, the quality of the audit team's work may decline if the work is spread across a smaller engagement team. The second means by which influenza may influence audit outcomes is if auditors

continue to work while sick with the flu, an act referred to as presenteeism. Individuals may be more likely to go to work sick when they have an important deadline on the horizon, such as the audit report of a public company. Supporting this, Hansen and Anderson (2008) find that people are more likely to go to work sick when there is time pressure associated with the job, when they work more than 45 hours per week, and when a high degree of cooperation with coworkers is required. All are characteristic of an auditors' busy season experience.

Anecdotal evidence based on conversations with current and former auditors suggests that staying home sick during busy season is a rare occurrence. We supplement these conversations with an informal survey of auditors about their experience being sick during busy season.[14] 67 auditors completed the survey.[15] Respondents represented local (6), national (14), large international (12), and Big 4 (35) firms and were geographically dispersed throughout the U.S. 82 percent of auditors (55 respondents) reported being sick during busy season in the past several years. Participants reported the rank they held in the firm when they were sick, ranging from associate (11), senior associate, (27), manager (8), senior manager (4), and partner (5). 87 percent of auditors (48 respondents) went to work while sick with flu symptoms. Based on this exploratory survey evidence, audit firm culture (Wyatt, 2004; Tysiac, 2020), and the rigorous nature of the audit environment during busy season (Cohn, 2013; Persellin et al., 2019), we predict that presenteeism, rather than absenteeism, is the primary channel through which influenza influences the work of

[14] Prior to administering the survey, we solicited feedback from several academic researchers and audit practitioners. Approval to conduct the survey was provided by the Institutional Review Board of the authors' academic institution prior to distribution. The survey was administered via Qualtrics and made available on LinkedIn, www.goingoncern.com, and www.reddit.com/r/Accounting. The survey had a completion rate of 63 percent. The average age of survey participants was 29 years and 57 percent of respondent auditors were female.

[15] We removed 14 observations from respondents who identified "tax" or "other" as their service line.

auditors. We therefore develop our proceeding predictions based on presenteeism's potential impact on audit outcomes.[16]

The work of auditors requires significant expertise and professional judgment (DeFond and Zhang, 2014) and therefore, to be most effective, auditors should be of strong mental health. Influenza, a contagious respiratory illness, is a direct threat to auditors' cognitive capabilities. Flu symptoms include headaches and fatigue (CDC, 2019a), which contribute to "brain fog" during times of illness. Further, when a person is sick, the immune system release cytokines to alert the nervous system that the body is ill. However, cytokines also influence brain chemistry by reducing alertness, memory, and accuracy, increasing reaction times (Smith, 2013), and making people more sensitive to prolonged work (Smith et al., 2004). Studies also document that performance impairments persist after other physical symptoms of being sick pass (Smith et al., 2000).

Due to impaired judgments and cognitive capacities while employees are sick, presenteeism is estimated to cost companies more than $150 billion per year (Stewart et al., 2003). Goetzel et al. (2004) document that respiratory disorders, including the flu, cost employees an average of 1.4 hours of productivity loss per day. A 2002 study initiated by Lockheed Martin documented the impact of the company's employees' common medical conditions and illnesses on job performance (Hemp, 2004). The study reported that 17.5 percent of Lockheed Martin employees had the flu in the prior two weeks. The reported average productivity loss was 4.7 percent. Additionally, the symptoms of the flu persist

[16] We acknowledge that there is a possibility that absenteeism may also be driving the results. Our predictions remain vastly similar if absenteeism is a significant contributing factor. Longer audit delays are a product of fewer audit personnel (Behn et al., 2006; Abbott et al., 2012). Auditors being sick and absent from work may reduce audit quality as the existing work has to be spread amongst remaining team members. We present presenteeism based on anecdotal and survey evidence and to streamline the normative conclusions of the study.

longer if employees work, rather than rest, while sick (Shu, 2013). This may result in prolonged periods of impaired judgments if auditors have to work while sick during busy season.

The timing of flu season is a critical factor that suggests that the significant costs of the flu, including presenteeism, extend to audit firms. During the last 34 years, flu season peaks have most often occurred between the months of December and March (CDC, 2016). The Bureau of Labor Statistics (BLS, 2010) documents that illness related absences are 31.2 - 51.9 percent higher during flu season than other months of the year.[17] Importantly, this period spans audit busy season. The majority of public companies have a December 31st year-end (Lopez and Peters, 2012) and audit reports due between February and March. During this time period, auditors are often expected to work overtime, which leads to increased susceptibility to mental and physical health stresses (Shields, 1999; Harrington, 2001). These pressures are likely to be exacerbated by the timing of flu season.

Although the timing of flu season is consistent from year to year, the severity of the flu varies drastically by year and location. For example, in a given week during the 2008 flu season, influenza in U.S. states ranged from low (Alabama) to high (Virginia). Examining these same states in 2011, flu activity in Alabama was high and activity in Virginia was low. Further illustrating variation, the 2011 flu season was generally mild relative to prior years (CDC, 2014) while the 2012 season brought back high flu activity and a particularly long flu season (CDC, 2019b). Additionally, threats posed by the flu are not mitigated over time. The 2018 flu season was of high severity, with an increase in

[17] While the Bureau of Labor Statistics measures absences, this statistic is generally indicative of the prevalence of the flu during audit busy season. As suggested by anecdotal and survey evidence, auditors are unlikely to stay home while sick with the flu and instead may go to work sick.

hospitalizations, doctor's office visits, and mortality across the country (PwC, 2018). The season marked the third use of the high severity classification since the 2004 flu season, and the first season in which the high severity classification applied to all persons, regardless of age (CDC, 2018). With no promise of a guaranteed effective vaccine from the CDC, no solution to the flu is in sight in the near future, making it a continuing threat to the output of public accounting firms.

Hypotheses Development

We first study the association between influenza and audit delay, an important analysis because the value of financial statement information increases with the timeliness of such information (Ashton et al., 1987). However, delay may be prolonged when auditors lack the abilities and skills required for efficiency (Behn et al., 2006). While brain fog may lead to delays, it is also possible that auditors may push to file the audit report at an earlier date to meet statutory deadlines or satisfy expectations of shareholders and their clients. In this case, we would not find evidence of an association between influenza and audit delay. However, we predict that when auditors are sick, their daily productivity suffers, and there is a longer delay in the filing of the audit report.

We further predict that when auditors have the flu the report lag may be prolonged to such an extent that it results in a non-timely filing. Non-timely filings have adverse consequences for companies, including the possibility of being delisted, revocation of registration by the SEC, potential violation of debt covenants, and the signaling of accounting or other issues that may impose additional costs on shareholders. These consequences are evidenced by an increase in information asymmetry and trading costs for investors and negative market reactions to late filings (Bartov and Konchitchki, 2017).

Non-timely filings also present risk considerations for auditors, who charge higher fees for accelerated filers with non-timely filings (Wang et al., 2013). Both predictions are formalized in the following hypothesis:

H1: Influenza is positively associated with audit delay.

We next consider the association between influenza and audit quality, addressing the possibility that attempts to complete a timely audit may lead to sacrifices in quality arising from brain fog and other flu-induced cognitive impairments. Maintaining strong auditor judgment is critical to the success of an audit. Auditing Standard 1015 (AS 1015) defines auditors' responsibilities to exercise due professional care as what the independent auditor does and how well he or she does it (PCAOB 2002). AS 1015 and PCAOB Staff Audit Practice Alert No. 10 (PCAOB 2012) state that exercising due professional care requires the auditor to exhibit professional skepticism, or "an attitude that includes a questioning mind and a critical assessment of audit evidence." Due to brain fog and other physical and cognitive limitations, an auditor's ability to exercise due professional care and professional skepticism may be threatened when sick.

Recent literature has examined the association between cognitive functions and audit quality. Kallunki et al. (2019) empirically document an association between cognitive abilities and audit quality. Experimental evidence also finds that cognitive limitations can impair professional skepticism (Nelson, 2009). Bonner et al. (2018) examine the sufficiency of auditors' resources for self-control in decision-making and find that poor audit outcomes are exacerbated when auditors have low levels of cognitive resources. Thus, we predict that the flu will impair audit quality and formulate this expectation in the following hypothesis:

H2: Influenza is inversely associated with audit quality.

III. RESEARCH DESIGN

Sample

This study leverages seasonal influenza data collected by the Centers for Disease Control and Prevention (CDC). Flu data is measured in seasons and is available for the 2008-2009 season through the 2018-2019 season. We match each flu season with the corresponding fiscal year-end whose audit would occur during that flu season. For example, flu season 2008-2009 peaks in December 2008 through March 2009. We match this flu season with companies with December 31, 2008 or January 31, 2009 year-ends. This matching process yields a sample including fiscal years 2008 – 2018.[18] We begin with 50,690 client-year observations with flu data, audit-specific data available in Audit Analytics, and financial data available in Compustat. In our primary analysis we eliminate 10,373 client-year observations without December 31st or January 31st year-ends to ensure that the timing of the engagements' busy seasons coincides with the timing of flu season.[19]

Samples for audit delay, discretionary accruals, material weakness errors, and audit production costs are further limited by the necessary sample and control variable data and are limited to companies with over five million dollars in total assets. The discretionary accruals (accrual quality) samples exclude companies in the financial services industries (SIC 6000-6999) and additional observations without the necessary data for control variables, for a total sample of 21,748 (18,864) client-year observations. The audit report

[18] Because of data requirements, the accrual quality and material weakness error samples exclude observations in 2018. The restatement sample excludes years 2017 – 2018 to provide time for the restatement to be identified (Cheffers et al., 2010).

[19] The sample of companies without December 31st or January 31st year-ends are utilized in falsification tests for clients whose audit is completed outside of flu season.

lag, non-timely filing, material weakness error, and restatement samples are reduced by observations missing the required control variable data for total samples of 35,323; 36,902; 31,627; and 28,724 client-year observations, respectively.[20]

Variable of Interest

Influenza data is compiled by the CDC at the state-level.[21] We rely on CDC categorization of flu activity to measure our test variable. Flu spread is reported to the CDC by state health departments on a scale of 0-4, with 0 being not widespread and 4 being persistent across the state. Flu severity is measured on a scale of 0-10, with 0 being minimal and 10 being high. We first calculate the average spread and severity between December 1st and March 31st, the overlapping weeks of flu season and audit busy season. To synchronize the scales of the two flu measures we standardize the spread and severity measures by year.[22] We then sum the standardized measures of spread and severity of flu during audit busy season for the state in which the audit office is located. A higher value of *INFLUENZA* indicates higher spread and severity of the illness.

Multivariate Models

The models include industry and year fixed effects to control for variation in the dependent variables by industry and over time that are unrelated to the change in the independent variables. Standard errors are clustered by client and audit-firm to control for

[20] The number of observations in probit models may differ because observations are dropped when the independent variable perfectly predicts the dependent variable.

[21] Our study is one of many recent papers leveraging geographic variation in various constructs, such as the quality of human capital (Call et al., 2017; Beck et al., 2018) or social norms (McGuire et al., 2012; Christensen et al., 2018), to examine audit and accounting outcomes. Other uses of publicly available government data in recent literature include analysis of union membership (Caskey and Ozel, 2017), immigration and human capital (Aobdia et al., 2018) and state-level economic outcomes (Chhaochharia et al., 2019).

[22] The standard score for each year of the sample has a distribution with a mean of 0 and a standard deviation of 1. As we report later, results are not sensitive to alternative methods of constructing *INFLUENZA*.

potential correlation of error terms.[23,24] All continuous variables are winsorized at the 1st and 99th percentiles to mitigate the influence of outliers in the data. All variables are defined in detail in the Appendix.

Audit Delay

We first test H1, which predicts a positive association between the flu and audit delay. The dependent variable *NT* is an indicator variable equal to 1 if the delay resulted in the audit report being filed after the SEC filing deadline, as reported to the SEC on Form 12b-25, Notification of Late Filing (Wang et al., 2013; Cao, Chen, and Higgs, 2016; Czerney, Jang, and Omer, 2019). Our second delay measure, *LAG,* is equal to the number of days between the fiscal year-end date and the filing date of the audit report less the number of days provided by the SEC filing deadline (60, 75, and 90 days for large accelerated, accelerated, and non-accelerated filers, respectively (Hoitash and Hoitash, 2018)). H1 predicts a positive association between *INFLUENZA* and *NT* and *LAG*. Control variables are adapted from prior research (Knechel and Sharma, 2012; Cao et al., 2016; Sharma, Tanyi, and Litt, 2017; Hoitash and Hoitash, 2018).

$$NT/\,LAG=\beta_0+\beta_1 INFLUENZA+\beta_2 SIZE+\beta_3 LIT+\beta_4 LEVERAGE+\beta_5 ROA+\beta_6 GC+\beta_7 FOREIGN+\beta_8 RESTATE+\beta_9 LOSS+\beta_{10} RESTRUCTURE+\beta_{11} MW+\beta_{12} BUSSEG+\beta_{13} GEOSEG+\beta_{14} INVREC+\beta_{15} AUDITFEES+\beta_{16} BIG4+\beta_{17} AUDITORCHANGE+\beta_{18} OFFICESIZE+ industry\ \&\ year\ fixed\ effects+\varepsilon \quad \textbf{(1)}$$

Audit Quality

H2 predicts a negative association between the flu and audit quality. We posit that the flu will negatively impact auditors' abilities to exercise strong professional judgment

[23] Results are robust to clustering standard errors by client, state, and audit office and to double clustering by client/audit office and state/industry.

[24] Results are robust to including a time trend variable to address concerns that trends in the variable of interest are leading to false conclusions that changes in flu influence changes in the dependent variables.

and skepticism. We therefore identify discretionary accruals as our first proxy for audit quality that is reflective of auditor judgment.[25] We estimate discretionary accruals using two measures. First, the absolute value of the performance adjusted modified Jones model (Kothari, Leone, and Wasley, 2005) controlling for return on assets (*DA*). Second, we use the Dechow and Dichev (2002) method of accruals quality based on the adjusted recognition of cash flows over a five-year period (*AQ*). We first test H2 using the multivariate model defined below, which controls for auditor- and client-level characteristics documented in prior literature (Francis and Yu, 2009; Reichelt and Wang, 2010).

$$DA/AQ=\beta_0+\beta_1 INFLUENZA+\beta_2 SIZE+\beta_3 LOSS+\beta_4 FOREIGN+\beta_5 BUSSEG+\beta_6 STD\text{-}CASH+\beta_7 STD\text{-}SALES+\beta_8 LIT+\beta_9 MB+\beta_{10} EXTREMEGROWTH+\beta_{11} RESTATE+\beta_{12} MW+\beta_{13} INVREC+\beta_{14} RESTRUCTURE+\beta_{15} BIG4+\beta_{16} AUDITORCHANGE+\beta_{17} AUDITORTENURE+industry\ \&\ year\ fixed\ effects+\varepsilon \quad \textbf{(2)}$$

Measuring the accuracy of audit reports provides incremental information about audit quality (Lennox 1999), and accuracy may be impaired when influenza is high. We therefore further examine the association between influenza and audit quality via material weakness errors (*MWE*). Material weaknesses offer important information about the efficacy of a company's internal controls over financial reporting, yet only a fraction of companies report their existing weaknesses (Rice and Weber, 2012). We propose that a portion of these omissions may be due to errors by the auditor in completing control testing and identifying a material weakness. The criteria for assessing the likelihood and materiality of internal control classifications are complex to apply due to imprecise definitions and guidance (Bedard and Graham, 2011). Thus, this is an area in which

[25] Discretionary accruals serve as an appropriate proxy because they are associated with PCAOB findings related to complex estimates (Aobdia, 2019), which require significant auditor judgment.

impaired cognitive functions due to the flu may reduce auditors' abilities to accurately identify and classify material weaknesses.

We measure *MWE* as an indicator variable equal to 1 if the auditor failed to identify a material weakness (MW) in year t and management subsequently identified a MW in the first, second, or third quarters of year t+1.[26] H2 predicts a positive association between auditors' material weakness errors and influenza. We include restatements as an additional measure of audit quality as restatements are the most egregious indicator of poor audit quality and flu-induced brain fog may influence an auditor's failure to detect and correct a misstatement. *RESTATEMENT* is an indicator variable equal to 1 for the year in which the misstatement occurred. Control variables are consistent with prior research (Ashbaugh-Skaife, Collins, and Kinney, 2007; Rice and Weber, 2012; DeFond and Lennox, 2017).

$$MWE/RESTATEMENT=\beta_0+ \beta_1 INFLUENZA+ \beta_2 SIZE+\beta_3 LOSS+ \beta_4 FOREIGN+ \beta_5 BUSSEG+ \beta_6 LIT + \beta_7 MB + \beta_8 EXTREMEGROWTH +\beta_9 PRIORRESTATE +\beta_{10} INVREC+ \beta_{11} RESTRUCTURE+ \beta_{12} BIG4+ \beta_{13} AUDITORCHANGE + \beta_{14} AUDITFEES+ \beta_{15} NAF+ industry \& year\ fixed\ effects+\varepsilon \quad \textbf{(3)}$$

Descriptive Statistics

Table 1 Panel A presents descriptive statistics for all sample variables.[27] *INFLUENZA* ranges from -3.23 to 3.04 with an average of -0.01. The mean audit report lag is negative, indicating that, on average, companies file the audit report 6.9 days ahead of the mandated deadline. We further observe that 5.0 percent of 10-K reports result in non-timely filings with the SEC. Discretionary accruals are, on average, .114, accruals

[26] Results are robust to limiting management's identification of a MW to the first quarter and to the first and second quarters.

[27] We report the number of observations and corresponding statistics for the largest available sample in our analyses.

quality is .040, and 8.4 percent of our sample restate the audited financial statements. Auditors make an error related to material weaknesses in 3.5 percent of the sample.

[INSERT TABLE 1 HERE]

Table 1 Panel B presents the correlation matrix. Offering initial support for our hypotheses, we observe a positive and significant correlation between influenza and audit report lag (*LAG*) and non-timely filings (*NT)*. Further, the dependent variables *DA, AQ,* and *MWE* are positively and significantly correlated with our variable of interest, *INFLUENZA*. Inconsistent with our predictions, the correlation between *RESTATEMENT* and *INFLUENZA* is insignificant. Additionally, we observe a positive and significant correlation between *AUDIT FEES* and *INFLUENZA*. We control for additional factors that may influence these associations in multivariate analyses.

IV. RESULTS

Audit Delay

H1 predicts that *INFLUENZA* is positively associated with audit delay. Non-timely filings (*NT*) is a binary variable indicative of Form 10-K being filed past the SEC deadline. We present the results of this hypothesis in Table 2. We find evidence of a positive association between *NT* and *INFLUENZA* ($p<0.01$), as reported in Column (1). The area under the receiver operating characteristic (ROC) curve is .89, indicating that the model's discrimination between clients with and without non-timely filings is excellent.[28] To strengthen our findings, we present an alternative measure of audit delay. The dependent variable adjusted audit lag (*LAG*) measures the difference between the SEC filing deadline and the date the Form 10-K was actually filed. We find a positive association, reported in

[28] Acceptable values of ROC are at least .70, with values between .80 and .90 being excellent and values exceeding .90 being outstanding (Hosmer and Lemeshow, 2000).

Column (3), between the flu and *LAG* ($p < 0.01$), confirming H1.[29,30] The coefficients of statistically significant control variables are generally of the expected sign.

The results for those clients whose audit is completed during flu season are economically significant. Moving from the 25th to 75th percentiles of *INFLUENZA*, holding all other variables at the sample mean, increases the likelihood of non-timely filings (audit report lag) by 15.0 (9.2) percent. The economic significance is further evidenced by comparing states in the highest and lowest quartiles of influenza. Moving from Wisconsin (25th percentile, *INFLUENZA*= -1.34) to New York (75th percentile, *INFLUENZA*=.79) increases the likelihood of non-timely filings (length of audit lag) by 7.3 percent (5.2 days).

[INSERT TABLE 2 HERE]

Results in Columns (1) and (3) support H1 with a positive association between *INFLUENZA* and *NT* (*LAG*) for auditors whose busy season directly overlaps with flu season. In Columns (2) and (4) we perform falsification tests on clients whose audits are not completed during flu season and observe an insignificant association between *INFLUENZA* and *NT* (*LAG*) for these firms. Combined, the results indicate that when auditors are sick with the flu, they are less efficient or simply unable to complete their work, resulting in a delay in the filing of audited information.

Audit Quality

To test H2, we first examine the association between *INFLUENZA* and discretionary accruals. The coefficient of the test variable *INFLUENZA* in Table 3 Column

[29] Our results are robust to measuring report lag as the number of days between the fiscal year-end and filing date of the audit report.

[30] Both the *LAG* and *NT* estimations are robust to the exclusion of firms with circumstances that could significantly influence the timing of the audit report, such as material weaknesses and going concern opinions.

(1) is positive and statistically significant ($p < 0.01$), which supports H2 and suggests that an increase in flu spread and severity is associated with an increase in discretionary accruals, or a reduction in audit quality. These results are also economically significant. Holding all other variables at the sample mean, moving from the 25th to 75th percentile of *INFLUENZA* increases discretionary accruals by 2.3 percent. Further, moving from a state in the lowest quartile (WI) to the highest quartile of influenza outbreaks (NY) increases discretionary accruals by .07. Column (2) illustrates an insignificant association between influenza and discretionary accruals for those companies whose audit is completed outside of busy season.

[INSERT TABLE 3 HERE]

In Column (3), we offer supplemental evidence of an association between *INFLUENZA* and audit quality when measuring discretionary accruals based on Dechow and Dichev (2002). We find a positive and significant ($p<0.05$) association between *INFLUENZA* and *AQ*.[31] These results are also economically significant. When holding all other variables at the sample mean, a move from the 25th to 75th percentiles of *INFLUENZA* increases accrual quality by 1.5 percent. Moving from a state in the lowest quartile (WI) to the highest quartile of influenza outbreaks (NY) reduces accrual quality by .02. All coefficients of statistically significant control variables are of the expected sign. Column (4) presents results of the robustness test, in which we fail to find a significant association between *INFLUENZA* and audit quality when limiting the sample to those companies whose audit is completed outside of flu season.

[31] The *DA* and *AQ* results are robust to the exclusion of firms with non-timely filings, addressing concerns that quality may inherently be lower for firms that require more time to file the audit report.

H2 also predicts a positive association between *INFLUENZA* and material weakness errors. We posit that when *INFLUENZA* is high, the likelihood of an auditor error increases. The results of this estimation are presented in Column (1) of Table 4. We find further support for H2, where *INFLUENZA* is positive and significantly associated with material weakness errors ($p<0.05$).[32] This is indicative of a negative association between the flu and audit quality. The area under the receiver operating characteristic (ROC) curve is .83, indicating excellent fit. The coefficients of statistically significant control variables are of the expected directions.

To illustrate economic significance, moving from the 25th to 75th percentile of *INFLUENZA* (holding other variables at the sample mean) increases the likelihood of a material weakness error by 14.4 percent. Moving from Wisconsin (lowest quartile of influenza) to New York (highest quartile of influenza) increases the likelihood of a material weakness error by 4.1 percent. Column (2) suggests that there is no evidence of an association between influenza and material weakness errors for companies whose audit is completed outside of busy season.

[INSERT TABLE 4 HERE]

We do not find evidence of a significant association between *INFLUENZA* and the likelihood of restatements in Table 4 Column (3).[33] The lack of findings may suggest that the average effect of the flu does not result in a detectable material misstatement, or possibly because auditors are able to direct limited resources to the highest areas of risk and avoid the most severe adverse consequence of poor audit quality, even when sick with

[32] The results are robust to the exclusion of firms with restructures for whom structural changes could significantly influence the identification of material weaknesses.

[33] Likewise, we do not find evidence of an association between *INFLUENZA* and restatements for those companies whose audit is completed outside of busy season (Column (4)).

the flu. Overall, results presented in Tables 3 and 4 suggest that when auditors are sick with the flu, audit quality declines. This may be due to brain fog or other flu symptoms that impair auditors' ability to focus on the job.

V. ADDITIONAL ANALYSIS

Quarterly Filings

We acknowledge that all audit deliverables are a product of both the auditor and the client's financial statement preparers. To partially alleviate the concern that the client being sick, rather than the auditor, is driving the results, we examine the association between the flu and quarterly reports. In contrast to annual reports, the responsibility over quarterly filings can be more directly attributed to the client because auditors are not required to complete a full audit or issue a formal audit opinion. We expect that if the auditor being sick is driving the results, rather than the client, we will not observe an association between our measure of the flu and delay of quarterly Forms 10-Q.

The dependent variable *NT 10-Q* is an indicator variable equal to 1 if the delay resulted in the quarterly report being filed after the SEC filing deadline. The dependent variable *10-Q LAG* measures the number of days between the period-end date and the filing date of the quarterly report less the number of days provided by the SEC filing deadline (40 and 45 days for accelerated and non-accelerated filers, respectively). The samples for the *NT 10-Q* and *10-Q LAG* analyses include all companies with quarterly periods 1-3 ending in December or January whose reports must be completed and filed during flu season. The results of these falsification tests are reported in Table 5. Consistent with our expectations, we do not find evidence of an association between *INFLUENZA* and the non-timely quarterly reports (column (1)) or delay in quarterly filings (column (2)).

[INSERT TABLE 5 HERE]

These results suggest that financial statement preparers may be less susceptible to adverse effects of presenteeism and are consistent with the influence of the flu on the work of auditors. Relative to auditors, financial statement preparers may have better work-life balance and may not be expected to work prolonged hours during flu season. Financial statement preparers may thus be more likely to stay at home when sick, rather than go to work.

Audit Production Costs

In additional analysis we consider how the flu impacts audit production costs (Doogar, Sivadasan, and Solomon, 2015) which are primarily a factor of labor hours incurred by the audit firm (Davis, Ricchiute, and Trompeter, 1993; Bell, Landsman, and Shackelford, 2001). While fees are typically negotiated in advance of the audit commencing, firms adjust fees for fluctuations in hours incurred (Palmrose, 1989), often based on significant changes in the amount of audit team labor (Hackenbrack, Jenkins, and Pevzner, 2014). Anecdotal evidence from an audit partner confirms that, to adjust for increased audit hours, in a typical engagement total engagement fees increase by 10-30 percent from the amount initially proposed to the audit committee. If an employee is sick and inefficient due to the effects of flu-induced brain fog, the audit firm may exclude any additional labor hours incurred when calculating total audit fees. Alternatively, the firm may charge as much cost as possible to the client and thus increase total audit fees to include internal inefficiencies. Overall, it is ex-ante unclear whether audit production costs will be higher or lower on engagements impacted by the flu.

We examine the association between the flu and audit production costs, measured as audit fees, via the model depicted below. The dependent variable is the natural log of audit fees (*FEES*). As a falsification test, we also examine the association between influenza and non-audit fees, where the dependent variable *NAF* is the natural log of total non-audit service fees.[34] While audit fees are often concentrated during flu and busy season, non-audit service fees are earned consistently throughout the year. We thus do not expect to observe an association between influenza and *NAF*. We control for client-, auditor-, and engagement-level attributes expected to influence audit fees (Hay, Knechel, and Wong, 2006; Choi, Kim, Kim, and Zang, 2010; Chen, Gul, Veeraraghavan, and Zolotoy, 2015).

$$AUDIT\ FEES/NAF=\beta_0+\beta_1 INFLUENZA+\beta_2 SIZE+\beta_3 LOSS+\beta_4 LIT+\beta_5 MB+\beta_6 LEVERAGE+\beta_7 ACCELERATED+\beta_8 GC+\beta_9 FOREIGN+\beta_{10} RESTATE+\beta_{11} RESTRUCTURE+\beta_{12} MW+\beta_{13} BUSSEG+\beta_{14} GEOSEG+\beta_{15} INVREC+\beta_{16} NONAUDITFEES+\beta_{17} BIG4+\beta_{18} AUDITORCHANGE+industry\ \&\ year\ fixed\ effects+\varepsilon \quad \textbf{(4)}$$

Table 6 reports the estimation results. We find a positive association between influenza and audit fees, our measure of audit production costs ($p < 0.01$). The results suggest that when auditors are sick with the flu, they are less efficient in the audit. In attempts to recoup costs, firms appear to then charge some of these inefficiencies to the client.[35] We find no evidence of an association between *INFLUENZA* and *NAF*.[36] This is consistent with our expectations, as non-audit service fees are not concentrated during flu season. The associations between control variables and dependent variables are generally of the predicted directions.

[34] The non-audit fee sample is restricted to firms that report non-zero non-audit fees.
[35] We cannot observe actual versus billed time incurred. While our evidence is consistent with auditors' charging some inefficiencies to the client, it is possible that some additional time incurred when an auditor is sick is written off by the audit firm.
[36] We also find no evidence of an association between influenza and non-audit fees when separating non-audit fees into tax-related fees and other fees.

[INSERT TABLE 6 HERE]

VI. ROBUSTNESS TESTS

Matched Samples

We implement propensity score matching (PSM) to address endogeneity concerns arising from functional form misspecification between the dependent and independent variables (Rosenbaum and Rubin, 1983). Due to the potential self-selection issue of clients choosing where to locate their headquarters, we compare clients in states with high flu to those in states with limited influenza outbreaks. We first estimate propensity scores using logistic regression. The dependent variable in this regression (*HIGHFLU*) is an indicator variable equal to one if *INFLUENZA* exceeds the annual sample median, and zero otherwise. For each year in our sample we model the likelihood of selecting a high flu state based on client size, Big 4 auditor, litigious industries, foreign activity, inventory and receivables, material weaknesses, inventory and receivables, market to book ratio, and losses.[37] We generate 24,936; 25,414; 16,016; 14,348; and 23,446 matched companies for the audit delay, non-timely filings, discretionary accruals, accrual quality, and material weakness error analyses, respectively, by matching, without replacement, clients with audits that overlap with flu season and those whose do not with the closest propensity score within a maximum Caliper distance of .01. Regression results within the matched pair samples are robust and reported in Table 7.[38]

[INSERT TABLE 7 HERE]

[37] The covariance balance affirms the success of the matching procedures, as the normalized differences do not exceed 0.25, indicating an acceptable balance between treatment and control groups (Imbens and Rubin, 1997).

[38] All tabulated robustness tests include all control variables specified in models (1) – (3). For brevity, we report only the results for *SIZE*.

Controlling for General Health

We perform additional analysis to explore whether general health explains the associations we detect. Unlike the flu, health is predictable, as it does not vary drastically from year to year. We therefore do not expect a significant association between general health and audit quality. In addition to tracking flu activity, the CDC performs an ongoing health survey designed to collect data on health-related risk behaviors and conditions in U.S. adults.[39] *HEALTH* represents the average of survey participants' responses to a 1-5 scale where 1 indicates excellent health and 5 indicates poor health.[40] Within our sample, the average state heath is 2.57 (Table 1 Panel A). In Table 8 we include *HEALTH* as a control variable in all models and find that *INFLUENZA* remains statistically significant while *HEALTH* is not significantly associated with our dependent variables. These results suggest that the longer audit delays and reduced audit quality are not driven by overall health of the state in which auditors operate.

[INSERT TABLE 8 HERE]

Controlling for Vaccination Efforts

Influenza data from the CDC is ex-post prevention activities and thus already reflects vaccination efforts by the states. Nevertheless, we conduct two tests to assuage concerns that vaccination efforts may bias cross-sectional variation across tests. First, we control for the state-level of vaccine coverage each year.[41] This measure estimates annual influenza vaccination coverage and is available for years 2009 -2018 of our sample. The

[39] Survey data is available at https://www.cdc.gov/brfss/index.html.
[40] Results are robust to measuring health as the number of days physical health is not good.
[41] Vaccine coverage data is available from the CDC at https://www.cdc.gov/flu/fluvaxview.

results presented in Table 9 Panel A indicate a continued positive association between *INFLUENZA* and our dependent variables.[42]

[INSERT TABLE 9 HERE]

Second, addressing the concern that the intensity of influenza outbreaks is a function of state government resources, we update our analysis to control for these resources. We proxy for state-level resources with state individual tax rates because on average, the majority of state revenues are generated from individual income taxes.[43,44] It is possible that states with higher tax rates have more resources available to support flu vaccinations or treatments. We control for *TAXES* in Table 9 Panel B and continue to observe a statistically significant association between *INFLUENZA* and our measures of audit outcomes.

Controlling for Population Density

It is possible that influenza spreads more quickly in states with higher population density. To address this concern, we next control for state-level population density.[45] We document a (untabulated) positive correlation between our measure of influenza and population density. In Table 10 we include *DENSITY* as a control variable and find that *INFLUENZA* remains statistically significant. *DENSITY* is generally not significantly associated with our dependent variables. The results suggest that the observed association

[42] The results are also robust to controlling for vaccine efficacy. This measure compares the frequency of the flu vaccine in patients who had the flu compared to patients who did not have the flu. Vaccine efficacy depends on whether the strain in the vaccine matches the active influenza virus in that year. Thus, vaccination efforts are not equally successful in all years.

[43] Results are robust to controlling for corporate income taxes and the sum of corporate and individual income taxes.

[44] Individual tax rate data is obtained from The Tax Foundation at https://taxfoundation.org/.

[45] Population density data is obtained from https://www.census.gov/2010census/data/apportionment-data-map.html. The last U.S. census that collected this data was from 2010. We use the log value of this measure for all sample years, as we do not expect significant variation in population density over the sample period.

between influenza and audit delays and audit quality are not driven by the population density of the state.

[INSERT TABLE 10 HERE]

Alternative Measures and Sample Composition

We consider two alternative measurements of the flu variable to address concerns that results are driven by transformation of CDC data. First, as presented in Table 11 Panel A, we consider a different audit busy season period and measure *ALTINFLUENZA* starting in the month of January rather than in December. Second, as presented in Table 11 Panel B, we transform the variables by calculating quintiles of spread and severity data, with a value of 1 representing the lowest quartile and a value of 5 representing the highest. We then sum the quintiles of spread and severity to get a composite measure of *ALTINFLUENZA2*. Our results are robust to both alternative specifications of the flu. Finally, we present results for companies whose fiscal year-ends end in the months of November, December, or January. As presented in Table 11 Panel C, the results are robust to this alternative sample composition.

[INSERT TABLE 11 HERE]

Additional Tests

We complete the following tests in additional untabulated analyses. We recognize that because the CDC provides flu data at the state-level, our results may be influenced by bi- or tri-state areas in which auditors commute to work from multiple states. To address this concern, we exclude from our analysis each of the five largest bi- or tri-state metropolitan areas. With the exception of material weakness error in one specification, our results remain robust to excluding states commuting to New York City (New York, New

Jersey, and Connecticut); Chicago (Illinois and Indiana); Philadelphia (Pennsylvania and New Jersey); Washington DC (DC, Virginia, and Maryland); and Boston (Massachusetts, Rhode Island, and New Hampshire).

We next examine whether the results are driven by education, office growth, or poor company performance. It has been documented that audit offices in cities with higher levels of education have higher audit quality (Beck et al., 2018). To test if the impact of the flu is incremental to the education of the workforce, we control for *EDUCATION*, measured as the percentage of the state population with a Bachelor's degree or higher.[46] Table 1 Panel A reports that approximately 27 percent of the population of the states within our sample have a bachelor's degree, consistent with Beck et al., (2018). We find that our results are not affected by the inclusion of *EDUCATION* as a control variable in our models.

It is possible that our results are driven by increases in the number of clients served, rather than from auditors being sick. We therefore consider whether our results are driven by office growth. Bills, Swanquist, and Whited, (2016) document that increases in audit workload reduce audit quality. Our results are robust to controlling for office growth, measured an indicator variable equal to 1 if the office-year falls into the top decile of growth, measured as the percentage change in office size (fees), from year t-1 to year t, and 0 otherwise, following Bills et al. (2016). This suggests that the negative association between audit quality and *INFLUENZA* is incremental to the association between office growth and audit quality.

Finally, we examine the impact of the flu on overall company performance. If

[46] Education data is obtained from the U.S. Census Bureau's American Community Survey and is available for years 2008 – 2017 of our sample.

companies do not perform well (because of the flu), managers may be more likely to engage in earnings management. Additionally, auditors may assess higher risk and increase fees. We estimate regression models where the dependent variables are return on assets and Tobin's Q. We find no association between *INFLUENZA* and return on assets or Tobin's Q and conclude that the flu does not appear to be associated with company performance and our results are not driven by this alternative explanation.

VII. CONCLUSION

This paper investigates whether influenza, a disease whose peak season directly overlaps with audit busy season, is associated with audit outcomes. We examine the impact of the flu on audit delay and audit quality and find that audit delay, measured with audit report lag and the likelihood of non-timely filings, increases when auditors are more likely to be sick with the flu and flu symptoms induce inefficiencies in the audit. We find that audit quality, measured with discretionary accruals and material weakness errors, declines in states with the worst flu outbreaks. Overall, our results suggest that influenza impairs auditors' judgment and decision-making abilities. To our knowledge, this is the first study to examine the association between poor auditor health and audit outcomes.

The results of this study are highly informative to audit firms. While many firms offer in-office flu shots, our findings suggest that these preventative methods may not be fully effective in achieving the intended results. We propose that the effects of influenza on audit outcomes arise when auditors go to work while sick. This creates the opportunity for audit firms to evaluate policies that incentivize working while sick. The heavy demand of busy season workloads may create environments in which auditors feel like taking a sick day is not an option. In addition, culture and work-life-balance initiatives within a firm or

office may influence auditors' decision to work while sick. This issue further extends to inter-firm relationships, where interactions with other engagement team members may drive perceptions of the appropriateness of working while sick.. If auditors did not work while sick, firms and offices would have better visibility into the impact of influenza on productivity and be able to assign additional resources to audit tasks, as needed.

Our study is not without limitations. We rely on available proxies of audit quality to measure an unobservable phenomenon. Integral to our reliance on publicly available measures of audit quality is the fact that all studies examining audit quality rely on measures that are a joint effort of the client and the auditor (Gaynor et al. 2016). We acknowledge that the client may also get the flu. However, we do not believe that the potential for the client to be sick limits the contribution of the potential impact of auditor health on audit outcomes. We are also unable to examine the impact of the flu at the individual auditor level and thus cannot directly measure auditors' cognitive states (deHaan, Madsen, and Piotroski, 2017).

While this study examines consequences of working while sick on engagement-level outputs, future research may consider rewards or consequences for individual auditors who elect to go to work while sick. Research opportunities include examining changes in interactions of audit team members when one or more scheduled personnel are sick with the flu or otherwise unavailable or how individual health interacts with organizational structures and team practices and procedures to jointly influence audit quality (Seckler, Gronewold, and Reihlen, 2017). While this study does not consider earnings management tactics, future research may consider whether managers take advantage of auditors' poor health to engage in audit management (Luippold, Kida, Piercey, and Smith, 2015). Finally,

the effects of COVID-19 may have multiple consequences for audit outcomes in the U.S. First, the impact of the flu may be lessened as the practices of wearing masks and social distancing become more prominently accepted. Second, recent flu seasons likely differed in terms of auditors' response to flu-like symptoms. Auditors were more likely to work from home or rely on remote technologies. The impact of these changes in work processes on audit outcomes may be considered in future research.

PART II: It's Not Done Until It's Done: Late Audit Filings During COVID-19

I. INTRODUCTION

The COVID-19 pandemic introduced unprecedented challenges to the audits of public companies. Following the declaration of COVID-19 as a national emergency, audit firms across the country closed offices (Bramwell 2020), forcing auditors to work remotely. Remote work presented many challenges, including the adoption of new technologies, increased communication with clients and between audit teams, and the inability to audit physical assets in person. In addition, COVID-19 created an environment of economic uncertainty in which risks were heightened and continuous risk assessment was required.[47] In response to the extraordinary challenges imposed by COVID-19, the SEC offered unprecedented filing relief to companies, and their auditors, burdened by the pandemic. This study provides descriptive evidence of late filings, examines whether the likelihood of filing after the original deadline increased during the pandemic, and the consequences of late filings for the audit process.

Issued on March 4, 2020, SEC Order 34-88318 provided companies for whom COVID-19 impaired their ability to meet filing deadlines an optional 45-day extension of time to file. The SEC stated that the filing relief was "necessary and appropriate in the public interest and consistent with the protection of investors." To take advantage of the revised deadline, companies with filings due between March 1 and April 30, 2020 had to report the extension on Form 8-K. On March 25, 2020, in Order 34-88465, the SEC recognized the severe and ongoing impact of the pandemic and prolonged the availability of the 45-day extension to companies with reports due between March 1 and July 1, 2020. Combined with the traditional 15-day extension available via the filing of Form 12b-25, companies had the option of claiming a total of 60 days in which to file the annual report. Throughout the study we refer to 45-day 8-K extensions and 15-day 12b-25 extensions,

[47] We use the terms "COVID-19" and "pandemic" interchangeably throughout this study.

collectively, as late filings.[48]

Our measure further identifies late filings that specifically cite the auditor as a contributing factor in the delay of the report. These are primarily driven by issues arising from the remote work process. For example, on the 45-day extension filed by FAT Brands Inc., the company described that "*the COVID-19-related shelter-in-place orders and resulting office closures have severely limited access to our facilities by… the staff of our auditor and thus impacted our ability to fulfill required audit processes and procedures."* In the 15-day extension filed by FingerMotion, the company describes that "*our… independent auditors have not been able to conduct on-site accounting and auditing work due to the pandemic and related government-mandated lockdowns.*" These details link late filings, and the consequences of those filings, directly to the auditor, alleviating concerns that measures of audit timing fail to capture the efficiency of the audit process.[49]

Within the unique operating environment induced by COVID-19, and with such a unique extension opportunity provided by the SEC, it is reasonable to expect that many companies, and their auditors, would take advantage of the additional 45-days in which to file the annual report. Alternatively, traditional late filings consequences such as negative market signals may deter the use of extensions during this already challenging time. Indeed, out of 1,908 eligible filers, descriptive statistics identify just 214 late filings during SEC Order 34-88465, between March 1 and July 1 of 2020. Of these, 124 companies took advantage of the unique 45-day extension. The remaining 90 companies, although eligible for the 45-day extension, filed for the 15-day instead, raising questions about why companies chose one extension type over the other. However, descriptive statistics generally do not identify differences between companies who filed for the 15-

[48] Technically, the SEC confirmed that if the extension filings are timely, and the subsequent form is filed within the identified timeframe, be it 15 or 45 days, the filing is considered timely, not late. We use the term late filings to distinguish between filings that did and did not require an extension.
[49] Traditional measures of audit delay are critiqued as measurements of management's decision of when to file, rather than the time required to complete audit fieldwork (Glover, Hansen, and Seidel 2021).

day extension and those who filed for the 45-day extension. We do observe significant differences between the 214 companies that filed late, and those that did not.

To examine whether the likelihood of a late filing increased during the COVID-19 pandemic, we use a difference-in-differences design in which we compare changes in audit outcomes during the pre-and post-COVID-19 periods. We leverage the first year of the pandemic, in which audits completed prior to the national emergency serve as a control group, to execute this design. Treatment firms comprise a balanced panel of companies whose annual audit report was due between March 1, 2020 and December 31, 2020, and were therefore contemporaneous with the U.S. lockdown.[50] The difference-in-differences design addresses concerns that our findings may be influenced by time-trends in audit outcomes or contemporaneous non-COVID-19 related events (Abadie 2005). We include firm fixed effects to control for firm-specific time invariant factors that may influence the dependent variables.[51]

The difference-in-differences results indicate that companies whose audit overlapped with COVID-19 had a greater increase in the likelihood of a late filing than those whose audit was completed prior.[52] This increase is consistent for both late filings that reference the auditor, and late filings that do not. These findings, however, only apply to the early period of 2020 (i.e., after March 1, 2020 and before July 1, 2020) in which the 45-day extension was offered by the SEC. We do not find evidence to suggest that there was a greater increase in the likelihood of a 15-day extension in the latter half of 2020 (late pandemic period). This result is somewhat counterintuitive; as the pandemic was ongoing during these months, we expected to also see an increase in late filings

[50] Following SEC Order 34-88465, the treatment group is defined as companies whose audit report was filed after March 1st, 2020. The control group is comprised of companies whose audit was completed between January 1st and February 29th, 2020. The results are robust to the use of an alternative cutoff date, March 13th, 2020, the date in which COVID-19 was declared a national emergency in the United States.

[51] We find consistent evidence when executing the difference-in-differences design in a propensity matched sample.

[52] This finding is consistent when using a measure of audit delay capturing the number of days between the fiscal year-end and the date of the audit report, adjusted for filer status.

during this period. Instead, this finding suggests that, over time, auditors were able to create efficiencies in the remote audit process.

Our next tests identify whether companies that filed late experienced different audit quality outcomes than those that filed early, and whether the outcome varied based on whether the auditor was cited as a reason for the delay. We measure audit quality using discretionary accruals and the accuracy of going concern reporting. A difference-in-difference analysis of discretionary accruals does not reveal significant changes in quality for companies whose audit was completed during the pandemic relative to those whose audit was completed prior. However, when the audit report was filed late, there is evidence of a decline in audit quality. This evidence is consistent in the sample of late filings that did not reference the auditor as a reason for the delay. When the auditor is responsible for the delay, there is no evidence of a decline in quality, suggesting that the longer audit process is effective in maintaining quality during COVID-19.

We next examine the likelihood of a new modified going concern opinion, and errors related to the issuance of that opinion. Using the difference-in-differences design, we observe a significant increase in the likelihood of a new modified going concern opinion issued in the early pandemic period. Examining audit errors, we find evidence of a decline in the likelihood of an auditor issuance a modified going concern opinion and the client not subsequently filing for bankruptcy. This evidence is consistent in both samples citing the auditor as the reason for the delay and those that did not. Collectively, our results suggest that there was an increase in the issuance of new modified going concern opinions, and that the auditor was generally more accurate in the issuance of such opinions.

In additional analysis we examine whether the presence of a Big 4 or new auditor influenced the likelihood of a late filing, and identify whether there were companies who should have taken advantage of the SEC extension but did not. The results of our Big 4 tests indicate that when a company was audited by a Big 4 auditor, the likelihood of a late filing is reduced, suggesting that Big 4 auditors may have been better positioned to work in a remote audit environment. We

also find that when a company was audited by a new auditor, the likelihood of a late filing increases, suggesting that auditors may have struggled with auditing a new client in a remote environment. Both results are consistent in the sample of late filings that reference the auditor as the reason for the delay, but not in the sample of late filings that do not reference the auditor. Finally, we compare companies that filed late with companies that filed very close to the deadline. The results of this test indicate that late filers generally had poorer audit quality, measured via discretionary accruals and going concern errors, than those companies who filed very close to the deadline. This suggests that the companies who filed close to the deadline may not have benefited from an SEC extension.

This study makes several contributions to theory and practice. To the best of our knowledge, it is one of the first archival studies to examine the impact of COVID-19 on audit efficiency in the United States. Audit firms' rapid transition to remote auditing required ad-hoc changes to the audit process (Luo and Malsch 2020; Alberti 2021). Firms then prepared to permanently incorporate some of these changes into their audit procedures (KPMG 2020), with PwC implementing a full-time remote work policy as of October, 2021 (McCabe 2021). It is thereby important to understand how working remotely, including virtual communication and remote verification of assets, influences audit efficiency.

This study identifies late filings where the auditor was cited as a contributing factor in the delay. We thereby link late filings, and the consequences of those filings, directly to the auditor. Finally, this study confirms anecdotal evidence from audit firms that teams took the time they needed to adapt to auditing in a new format. As stated by Julie Vichot, audit partner at Deloitte, during the 2021 PCAOB Conference on Auditing and Capital Markets, "it's not done until it's done." Qualitative evidence provided by Alberti (2021) confirms this sentiment: "It [the audit process] still goes through what it needs to go through…. It's really a hit on the efficiency [takes more time], I think, more than anything." This study provides critical evidence on the consequences of late filings in a time of unprecedented economic uncertainty.

II. BACKGROUND AND HYPOTHESIS

SEC Deadlines, COVID-19, and Extensions

Public companies are required to file annual reports with the SEC based on filer status. Large-accelerated, accelerated, and non-accelerated filers are provided with 60, 75, and 90 days, respectively, to file the annual report. SEC Rule 12b-25 allows companies who cannot file timely to submit Form 12b-25 to receive an automatic extension of 15 days to file the annual report. Form 12b-25 must include a brief description of why the company cannot timely file. The 15-day extension is available to any public company, in any filing period.

The Coronavirus disease (COVID-19) was identified in December, 2019 (CDC 2020). COVID-19 is one of many types of coronavirus which cause upper-respiratory tract illnesses. The virus was declared a global pandemic by the World Health Organization, and a national emergency in the United States, both in March of 2020. In that same month, the SEC acknowledged the importance of health and safety in light of the coronavirus, as well as unique challenges in the reporting environment imposed by the pandemic. In response, the SEC issued Order 34-88318 to assist companies with significant operations impacted by COVID-19. The unique order allowed companies to file the annual report 45 days after the original due date. To receive the extension, companies had to file Form 8-K with a brief description of the reasons why the report could not be filed on a timely basis, as well as the estimated date the report was expected to be filed.

Order 34-88318, dated March 4, 2020, provided relief to companies with reports due between March 1 and April 30, 2020. Order 34-88465, dated March 25, 2020, was filed subsequently, and extended the relief period to filings due on or before July 1, 2020. While the second order, like the first, stated that it may be extended as the SEC monitored the situation, the SEC later confirmed that the relief expired and was not extended further.

Hypothesis Development

The receipt of high-quality financial information is particularly critical in the COVID-19 environment (SEC 2020a), but disruptions to economic activities may delay the provision of

information to the capital markets. This prompts our examination of the role of the pandemic in the timeliness of the audit report. Several factors, beyond the SEC Orders providing an explicit extension of time to file, may have contributed to an increase in the time required to complete the audit. Auditors faced challenges in obtaining and evaluating audit evidence (Luo and Malsch 2020; PCAOB 2020), and the completion of standard audit tasks may have taken longer due to communication or other challenges. In addition, the consistently changing economic landscape and new laws and regulations, such as the CARES Act, may have further prolonged an audit's completion (PCAOB 2020).[53]

There are, however, both economic and financial reporting consequences to late filings that may have deterred companies and their auditors from utilizing this option. There is often a negative market reaction to late filings (Griffin 2003; Cao, Calderon, Chandra, and Wang 2010; Impink, Lubberink, van Praag, and Veenman 2012), as companies that file late may signal weak internal controls over financial reporting (Impink et al. 2012) or lower financial reporting quality (Cao, Chen, and Higgs 2016). Companies who fail to comply with statutory deadlines may face debt covenant violations, deregistration by the SEC, or delisting by stock exchanges (Bartov and Konchitchki 2017).

Furthermore, audit firms claimed that remote audits were supported by pre-developed technology, and thus the transition may not have resulted in delays. All Big 4 firms made some declaration of this effect (EY 2020; KPMG 2020; PwC 2020; Deloitte 2021). PwC, for example, stated: "our audit technology infrastructure and tools have been in place for a number of years and enabled our people to carry out their work despite the significant change in our physical work environment." Thus, COVID-19 may have simply accelerated the pre-existing transition to remote auditing (Shneyder 2020). Nevertheless, given this unprecedent times and new challenges to the

[53] The CARES Act, or the Coronavirus Aid, Relief and Economic Security Act, was an economic stimulus bill introduced in March of 2020. The CARES Act is one of multiple government stimulus packages that may have influenced financial reporting and auditing via the reporting of financial instruments, income taxes, or subsequent events.

audit process, as suggested by the SEC, we predict an increase in late filings during the COVID-19 period:

H1: There is a positive association between the COVID-19 period and late filings.

Further analysis examines whether a late filing moderates the association between audits completed during the pandemic and audit outcomes. We consider multiple measures of audit quality, including discretionary accruals and modified going concern opinions, as well as errors related to the issuance of those opinions. Ex ante, it is unclear whether the transition to a remote environment was detrimental to audit quality. In their initial response to the pandemic, regulators expressed concerns about financial reporting and audit quality (SEC 2020a), prompting the PCAOB and CAQ, amongst others, to issue guidance for auditors on areas of focus for audits completed during the pandemic (CAQ 2020; PCAOB 2020a). This guidance offered suggestions for auditors on how to consider the impact of COVID-19 in risk assessments, communications with the audit committee, auditor reports, and quality controls. The PCAOB also delayed inspections to provide relief to audit firms (PCAOB 2020b).

The guidance on audit quality matters followed concerns about challenges imposed by the pandemic on both financial reporting quality and the audit process. For example, financial statement items requiring judgments and estimates, such as fair value measurements or income taxes and valuation allowances were particularly challenging in times of economic uncertainty (SEC 2020d). Auditors, likewise, faced additional risks in opining on such estimates. Auditors were also required to assess certain financial statement considerations that were not an issue in a typical reporting year, such as the disclosure of significant subsequent events or going concern, thus creating challenges in opining on new or different financial statement disclosures.

In addition, auditors may have experienced difficulties executing audit processes and procedures. Working remotely restricted access to client personnel (Luo and Malsch 2020), resulting in delayed information from management. Similarly, by working remotely, rather than in

a dedicated audit workroom, auditor experienced challenges communicating with other team members (Luo and Malsch 2020), and exercising professional skepticism in Zoom interviews (Robson, Annisette, and Peecher 2021). Remote auditing further prohibited auditors from accessing client worksites, presenting challenges for audit activities that typically require auditors' physical presence, such as confirming the existence of property, plant, and equipment or inventory.

Other challenges to remote work included Zoom fatigue (WSJ 2020; Fauville, Luo, Querioz, Bailenson, and Hancock 2021), distractions imposed by working from home (Bergefurt, Weijs-Perrée, Maris, and Appel-Meulenbroek 2021) and the burden of providing childcare (e.g. Du 2021). Additional consequences of COVID-19 on auditor health may have also presented significant challenges. Auditors may have experienced significant stress induced by the pandemic, making it challenging to focus on their jobs. Further, if an auditor contracted the virus, they would have been unable to work for an extended period of time, leaving audit teams down a team member and having to spread existing audit work among fewer individuals.

Alternatively, it is possible that audit quality did not suffer, or even that it improved, during by the COVID-19 pandemic. To give issuers and their auditors time to focus on maintaining quality in a time of unprecedented uncertainty, the SEC offered companies extensions of time to file (SEC 2020b; SEC 2020c) and the PCAOB offered temporary relief from inspections so that audit firms could prioritize maintaining the quality of current engagements (PCAOB 2020b). In addition to audit firms being provided with additional time in which to file the audit report, individual auditors were afforded more time in their day. Working in lockdown eliminated commutes, and many professionals dedicated this time to doing more work (Curtis 2019; Barrero 2020), which could have positive implications for audit quality. Indeed, prior research provides evidence that working from home can lead to increases in performance and work satisfaction (Bloom, Liang, Roberts, and Ying 2015).

Audit firms claimed that remote audits were already supported by pre-developed technology. All Big 4 firms made some declaration of this effect (EY 2020; KPMG 2020a; PwC

2020; Deloitte 2021). PwC, for example, stated: "our audit technology infrastructure and tools have been in place for a number of years and enabled our people to carry out their work despite the significant change in our physical work environment." Thus, COVID-19 may have simply accelerated the pre-existing transition to remote auditing (Shneyder 2020).

Further, audit firms dedicated additional resources to combat challenges imposed by the pandemic (PwC 2020). They devoted significant time to progress updates – often having daily meetings to review work plans in detail (Luo and Malsch 2020).[54] Audit partners reported having a heightened sense of professional skepticism and generally being more involved in the process than in a typical reporting year (Alberti 2021). Generally, auditors adapted their procedures to the remote work process, and did not compromise on material matters just because of the extreme circumstances (Luo and Malsch 2020).

Collectively, it is ex-ante unclear whether COVID-19 had a discernible effect on audit quality. We also consider whether audit quality outcomes may be influenced by the likelihood of a late filing, and whether this moderating effect may vary based on whether the auditor contributed to the delay. Auditor induced delays may indicate auditors taking longer to maintain effective audit procedures, resulting in improvements to quality.

III. RESEARCH DESIGN

Treatment and Control Groups and Timeline

The COVID-19 virus was declared a global health emergency in early 2020. In March, the SEC offered an extension to file to companies with annual reports impacted by the pandemic, those due after March 1st, 2020. The treatment group is therefore defined as companies whose audit report was filed between March 1st and December 31st, 2020 (*COVID AUDIT* = 1). Audits filed prior to March 1st were likely substantially complete before the pandemic significantly impacted U.S.

[54] However, frequent supervision can create mental exhaustion (Bedford, Speklé, and Widener 2020), and thereby limit the benefits of remote work for audit decision quality (Bhattacharjee, Hillison, and Malone 2020).

business operations. This control group is comprised of companies whose audit report was completed between January 1st and February 29th, 2020 (*COVID AUDIT* = 0). [55]

Our sample is comprised of a balanced panel, in which we require companies to have data in Audit Analytics and Compustat for audits completed in both 2019 and 2020 (Carcello and Li 2013; Cunningham, Li, Stein, and Wright 2019).[56] We define *POST*, a measure of time, as an indicator that takes a value of 1 for observations with an audited annual report filed in 2020, the year in which the COVID-19 pandemic hit, and 0 for the previous year, 2019. We further divide the sample into early and late periods of the first pandemic year. We define these periods following SEC order 34-88465. The early pandemic sample includes companies whose audit was completed during the initial months of the COVID-19 pandemic and whose audit report was filed between March 1st and July 1st of 2020. The late pandemic sample includes companies whose annual report was filed after July 1st, potentially giving auditors time to adjust to the remote auditing process. The control group for both samples is companies whose annual report was filed prior to March 1st, 2020 (*COVID AUDIT* = 0). Figure 1 outlines the timeline of the COVID-19 pandemic and the basis for our sample construction.

INSERT FIGURE 1 HERE

Difference-in-Differences Design

We use a difference-in-differences design to address concerns that the observed outcomes may be due to intertemporal events that coincided with the annual audit, but were unrelated to the COVID-19 pandemic. In this design, the untreated control group is used to identify variation in the outcome variable that is not attributable to the overlap of the annual audit with the COVID-19 pandemic (Abadie 2005). The difference-in-differences design thus compares changes in audit timing

[55] Our results are robust to the use of March 13th, the date COVID-19 was declared a National Emergency, as the cutoff for the treatment group. 2020 was a leap year.

[56] Audits completed in 2019 include Compustat fiscal years 2018 (month-ends May, 2019 and earlier) and 2019 (month-ends June, 2019 and later), while audits completed in 2020 include fiscal years 2019 (month-ends May, 2020 and earlier) and 2020 (month-ends June, 2020 and later).

between treatment and control firms following the COVID-19 pandemic. We examine the influence of COVID-19 on audit timing using the following estimation.

$$LATEFILE_{it} = \beta_1 POST + \beta_2 POST \times COVID\ AUDIT + \sum \beta_j \text{Controls}_{it} + \text{Firm FE} + \varepsilon_{it} \quad \textbf{(1)}$$

Our dependent variable is an indicator representing the late filing of the audit report (*LATEFILE*). This measure is equal to 1 if either of two conditions are satisfied. First, if a company filed Form 12b-25, Notification of Late Filing, with the SEC (e.g. Cao et al. 2016). Second, if the company filed for an additional 45-day extension with the SEC due to extenuating COVID-related circumstances (SEC 2020b; SEC 2020c). Both measures are obtained from Audit Analytics.[57]

The main effect of the treatment group, *COVID AUDIT*, is subsumed by the inclusion of firm fixed effects in this and each subsequent model.[58] The coefficient of interest is β_2, which informs the change in the dependent variable for treatment firms relative to changes in the dependent variable for control firms before and after the COVID-19 pandemic. We use a linear probability model with a dichotomous dependent variable to allow for a more straightforward interpretation of coefficients and interaction terms and the inclusion of firm fixed effects (Angrist and Pischke 2009). Standard errors are clustered by firm to avoid within-firm serial correlation. We run the model in the full, early, and late pandemic periods. We control for factors documented to influence late filings (Ashton, Willingham, and Elliott 1987; Sharma, Tanyi, and Litt 2017): company size (*SIZE*), complexity (*FOREIGN*, *NUMIND*), financial condition (*ROA*, *LEVERAGE*, *LOSS*, *MB*), inherent risk (*INVREC*, *LIT*, *GROWTH*), uncertainty in the operating environment (*CFTA*, *MW*), and auditor size (*BIG 4*).[59] We winsorize all continuous variables at the 1st and 99th percentiles. All variables are defined in detail in Appendix B.

[57] Our results are robust to the use of a continuous measure of audit timing. *DELAY* is equal to the number of days between the fiscal year-end date and the filing date of the audit report, less the number of days provided by the SEC filing deadline (60, 75, and 90 days for large accelerated, accelerated, and non-accelerated filers, respectively (Hoitash and Hoitash 2018).

[58] The results are robust to the use of industry, instead of firm, fixed effects.

[59] Subsequent models examining audit outcomes such as going concern opinions include controls consistent with prior literature (e.g. Dechow and Dichev 2002).

Critical to the difference-in-differences design is the parallel trends assumption, which implies that the treatment and control groups exhibit parallel movements in the dependent variables in the absence of the external shock (Abadie 2005). In our context, we should observe co-movement in late filings for companies whose audit was completed before and during COVID-19, absent the pandemic. To examine this trend in the pre-COVID period, we test for significant differences in the change in the dependent variable from $year_{t-2}$ to $year_{t-1}$ for the treatment and control groups (e.g. Lennox 2016). The results (untabulated) show no significant differences (p-value > 0.10) between pre-period trends in audit delay between COVID and non-COVID audits.

We next consider whether the parallel trend would have continued post-treatment, absent the COVID-19 pandemic. While this trend is unobservable, our design considers multiple approaches to reduce the concern that the parallel trend would cease in the post period. We control for firm fixed effects to account for company-specific characteristics that may influence the dependent variables. We also control for firm characteristics that may drive differences between our treatment and control groups. In addition, the use of a balanced panel provides comfort that the observed outcomes are not attributable to changes in sample composition.[60]

IV. EVIDENCE ON LATE AUDIT FILINGS DURING COVID-19

Descriptive Statistics

Number of Late Filings

Table 1 Panel A presents the number of companies who filed for a 15- or 45-day extension, or either (denoted as *late filings*) in the 2019 and 2020 periods. In the early pandemic period, there were fewer 15-day extensions in 2020 (n=109) than in 2019 (n=135). The difference between the two is statistically significant (p-value<0.10). In the late pandemic period, this number increased from 35 in 2019 to 39 in 2020, albeit the difference is not statistically significantly different (p-

[60] Our results are further robust to the use of a propensity score matched sample to alleviate concerns that the parallel trends would not continue in the post-COVID period.

value>0.10). There were 124 45-day extensions filed in 2020. This resulted in a greater number of late filings in 2020 (214) than in 2019 (135).[61] The difference between the totals in the two time periods is statistically significant (p-value<0.01). Of those who filed for a 15-day extension, 90 were eligible for a 45-day extension but chose not to take advantage of the additional time.

INSERT TABLE 1 HERE

Differences Between Late Filers and Timely Filers

In Table 1 Panel B, we present descriptive differences between companies that filed for the 15- and 45-day extensions as well as between companies who filed timely and those who filed late. We generally do not find evidence of significant differences between 15-day and 45-day extension companies. We do, however, find significant differences between late filers and timely filers. Late filers generally have higher discretionary accruals and are more likely to receive a new modified going concern opinion. Auditors are less likely to make a going concern error for late filers than those who filed timely.

Multivariate Analysis

We present the results of the estimations used to examine H1, the influence of COVID-19 on audit timing, in Table 2. The dependent variable in Panels A through C is an indicator variable equal to 1 if the annual report was not timely filed (*LATEFILE*). Columns (1), (2), and (3) report the results in the full *LATEFILE* sample, early pandemic, and late pandemic samples, respectively. The interaction of *POST* and *COVID AUDIT* is positive and significant in Columns (1) and (2). This is indicative of a greater increase in the likelihood of a late filing for the treatment group, those companies whose audit overlapped with COVID-19, than for the control group. These findings, however, only apply in the early pandemic period, rather than the late. Thus, H1 is supported in the early pandemic period.

[61] Note that some companies filed for both a 15-day and 45-day extension, hence why the 2020 late filing total in the early pandemic sample (214) does not equal the sum of the 15-day (109) and 45-day (124) extensions in the same period.

INSERT TABLE 2 HERE

Late Filings that Reference the Auditor

We next examine client communication about the audit, in the form of reasons for late filings, which inform how COVID-19 influenced the audit process. We leverage explanations for late filings provided by clients to identify non-timely filings that reference the auditor as a contributing factor in the reason for late filing of the annual report.[62] We code non-timely filings (Form 12b-25) based on categories provided by Audit Analytics. Non-timely filings with a reason of "Auditor unable to finish review or audit not complete" are classified as auditor-related. Examples of non-timely filings that reference the auditor may be found in Appendix C. To identify reasons for requiring an additional extension of time to file per SEC orders 34-88318 and 34-88465, we read the description of each extension and identify those that mention the auditor as responsible for the late filing.[63] Appendix D presents examples of extension requests that reference the auditor. Many of these requests cite audit challenges presented by remote work.

The results of this additional test are reported in Table 2 Panel B. We find consistent evidence of an increase in late filings when limiting the sample to late filings citing the auditor as a reason for the delay. The results in this panel are consistent with Panel A, and are only evident in the early pandemic period. In Table 2 Panel C, we present results of a repeated analysis where the dependent variable is late filings that do *not* reference the auditor as a contributing factor in the delay. The results in this panel are consistent with Panels A and B, indicating that there was a greater increase in the likelihood of late filings in the early pandemic period that do not cite the auditor. Taken together, both late filings that cite the auditor and those that do not have increased for audits completed during the early COVID-19 period. Interestingly, during the later COVID-19 period, when the pandemic was still on-going, we do not find evidence of an increase in late filings.

[62] Non-timely filings and extensions that do not cite the auditor are removed from the sample.
[63] We perform a text search of the description of the extension filed on Form 8-K for the terms "auditor" "audit" "consultant" "service provider" "review" and "advisor."

This non-result might suggest that as time passes, auditors and firms are more equipped to working remotely.

Alternative Measure of Delay

Changes in the regulatory environment have prompted questions about the reliability of the audit report lag in capturing the date of completion of audit fieldwork (Glover, Hansen, and Siedel 2020). Other research acknowledges that the audit report lag is the only publicly available measure of audit efficiency (Ashton, Graul, and Newton 1989; Knechel and Sharma 2012). We thus utilize the continuous measure of auditing timing as a robustness test. *DELAY* is equal to the number of days between the fiscal year-end date and the filing date of the audit report, less the number of days provided by the SEC filing deadline (60, 75, and 90 days for large accelerated, accelerated, and non-accelerated filers, respectively (Hoitash and Hoitash 2018)). The results of this analysis are reported in Table 2, Panel D. As reported in Column (2), we continue to find evidence of an increase in the time required to file the audit report. Column (3), however, shows evidence of, during the later pandemic period, a greater decline in the time required to file the audit report for those companies whose audit was completed during COVID-19. Overall, the results using the alternative measure of timing support the results presented in Panel A.[64]

V. AUDIT QUALITY WHEN FILING LATE

The next analyses examine whether audit quality, measured using discretionary accruals and going concern errors, varies based on whether or not the audit report was filed late during the COVID-19 pandemic, and whether the moderating effect differs based on whether or not the auditor contributed to the delay.[65]

Discretionary Accruals

[64] The continuous findings are robust to the exclusion of companies that filed late (*LATFILE* = 1).
[65] We also examine whether audit fees vary based on whether or not the audit report was filed late. Using the difference-in-differences design, we do not find evidence of a change in fees in the early pandemic period, but do observe a significant decline in audit fees in the late pandemic period, which is perhaps indicative of client fee pressure.

We begin by estimating the baseline change in audit quality using discretionary accruals. The dependent variable *DA* measures performance matched discretionary accruals consistent with Kothari, Leone, and Wasley (2005), as the absolute value of the performance adjusted modified Jones model, controlling for return on assets.[66] The results of the difference-in-difference estimation are presented in Table 3 Panel A. We do not find evidence of a statistically significant interaction of *POST* and *COVID AUDIT* (*p*-value>0.10) in either sample period.

INSERT TABLE 3 HERE

In Panel B, we observe whether audit quality varies based on whether or not the company filed late. In this and subsequent cross-sectional tests, we relax the difference-in-differences design and examine the differences between the treatment and controls groups in the *POST* period.[67] We examine the moderating effect of all late filings in Column (1), of late filings related to the auditor in Column (2), and late filings not related to the auditor in Column (3). We observe a positive and significant coefficient on the interaction of *COVID AUDIT* and *LATEFILE* when the late filing does *not* reference the auditor as a reason for the delay (Column (3), *p*-value<0.01)). Combined with the insignificant interaction term in Column (2) (*p*-value>0.10), this suggests that quality is maintained when the auditor takes more time to do their work during the pandemic, but not when the auditor is not a contributing factor to the delay.

New Modified Going Concern Opinions

Our next analysis looks at an alternative measure of quality, directly attributable to the auditor's decisions, the issuance and accuracy of new modified going concern opinions (DeFond and Zhang 2014). As going concern opinions can be sticky, we are specifically interested in going concern opinions newly issued during the pandemic (Hopwood, McKeown, and Mutchler 1994). We define

[66] The sample used in the *DA* analyses excludes companies in financial industries.

[67] Without multiple years of observations per company, we include industry instead of firm fixed effects. In addition, because we found evidence of an increase in late filings in the early pandemic period, we restrict this and subsequent analyses to the same time period. We acknowledge that the interpretation of cross-sectional variation does not infer causation between independent and dependent variables (Minutti-Meza 2021).

the dependent variable *NEW GC* as an indicator variable equal to 1 if the company received a modified going concern opinion in $year_t$, but not $year_{t-1}$. *NEW GC* is equal to 0 if the company was distressed, but did not receive a modified going concern opinion in $year_t$. The accuracy of this opinion indicates the success of auditors in warning investors of an entity's ability to operate as a going concern. Type I going concern errors are defined as those in which the auditor issued a modified going concern opinion, but the client did not go bankrupt within a one-year period of the opinion.[68] *TYPE I ERROR* is equal to 0 if the auditor issued a modified going concern opinion and the client declared bankruptcy within one year.

We limit the going concern analysis to financially distressed firms. We classify a firm as financially distressed if it has negative working capital, an operating loss, negative retained earnings, or bottom-line loss in any of the last three years (Hopwood et al. 1994).[69] Applying these criteria leaves us with 2,270 distressed treatment and control firms. The difference-in-differences results of the new going concern analysis are reported in Table 4 Panel A. We observe a positive and significant coefficient on the interaction of *POST* and *COVID AUDIT* in the early pandemic period, but not in the late pandemic period.

INSERT TABLE 4 HERE

Panel B of Table 4 examines going concern errors. Here the sample is limited to those companies who received a modified going concern opinion (Berglund, Eshleman, and Guo 2018), and we relax the difference-in-difference design because we lack sufficient observations of errors in the control group (*COVID AUDIT* = 0). Thus, this analysis compares the pre- and post-COVID periods within treatment firms (*COVID AUDIT* =1). We find evidence of a negative and significant coefficient on *POST* (p-value<0.05) in Column (2), suggesting that in the early COVID-19 period,

[68] Type II errors are those in which the auditor did not issue a modified going concern opinion, but the client filed for bankruptcy within one year. As this analysis is limited to companies that filed for bankruptcy, our sample lacks sufficient degrees of freedom for this analysis.

[69] Our analysis is robust to alternative measures of distress, such as firms who report a loss or negative operating cash flow (DeFond, Francis, and Hallman 2016).

auditors of treatment firms were less likely to make a going concern reporting error in the COVID-19 year than in the previous year.[70] Collectively, the going concern and going concern error analyses indicate that while auditors were more likely to issue new going concern opinions, they were more accurate in the issuance of those opinions than in prior years.

In Table 4 Panel C we examine the likelihood of a going concern reporting error changes based on whether or not the company filed late. We observe a negative and significant coefficient on the interaction of *POST* and *LATEFILE* in Columns (1) and (3) (p-value<0.05), and a marginally significant coefficient in Column (2) (p-value<0.10). These results suggest that when a company files late, regardless of whether the auditor is a contributing factor to the late file, the auditor is less likely to make a Type I going concern error.

VI. ADDITIONAL ANALYSIS

We next examine the results of the moderating effect of a Big 4 or new auditor on the likelihood of a late filing.

Big 4 Auditors

Big 4 auditors are associated with better audit quality (DeAngelo 1981). We thus examine whether Big 4 auditors are better able to manage late filings of the audit report. Table 6 presents the results of the moderating effect of a Big 4 auditor on the likelihood of a late filing. The variable *BIG 4* is equal to 1 if the auditor engaged by the reporting entity was one of the Big 4, and 0 otherwise. In Table 5 Panel A, we observe a negative and significant coefficient on the interaction of *COVID AUDIT* and *NEW AUDITOR* (p-value<0.01) in Columns (1) and (2). We do not find evidence of a significant coefficient in Column (3) (p-value>0.10). Hence, our results suggest that the presence of a Big 4 auditor reduces the likelihood of a late filing, but only when the late filing references the auditor as a reason for the delay.

[70] While we do not observe evidence of a significant coefficient in Column (3), the late pandemic period, we acknowledge that the sample of errors in this period may be understated due to the lack of availability of bankruptcy data for one year following the date of the audit report.

INSERT TABLE 5 HERE

New Auditors

Anticipating that new auditors may struggle with the transition to remote work in addition to the burden of working with a new client (Geiger and Raghunandan 2002), we examine the moderating effect of a new auditor in Table 5 Panel B. *NEW AUDITOR* is an indicator variable equal to 1 if the audit is completed by a new auditor for the first time in $year_t$, and 0 otherwise. In Table 5 Panel B, we observe a positive and significant coefficient on the interaction of *COVID AUDIT* and *NEW AUDITOR* (*p*-value<0.01) in Columns (1) and (2). We do not find evidence of a significant coefficient in Column (3) (*p*-value>0.10). Hence, our results suggest that the presence of a new auditor increases the likelihood of a late filing, but only when the late filings reference the auditor as a reason for the delay.

Should More Companies Have Utilized the Extensions

While there was an observed increase in the number of late filings from 2019 to 2020, there were perhaps less than expected late filings considering the significant effect of the pandemic on audit work. In our final analysis, we examine whether companies who filed timely would have benefited from taking advantage of either the 15- or 45-day extensions. We examine this issue with descriptive evidence where we compare companies that filed late with those companies that filed close to the deadline. We define those that filed close as those that filed within three days of the due date.[71,72] Of those companies who were eligible for either the 45-day or 15-day extension, 22 percent filed within 3 days of the due date.

If auditors of companies who filed close to the deadline would have benefited from taking more time to file, we would expect to see similar characteristics between close filers and late filers. Instead, in untabulated results, we observe statistically significant differences between the two

[71] The observed results are robust to measuring close as filing within four or five days of the due date. Evidence from multivariate analysis is consistent with the univariate.

[72] We get consistent results if we run in a matched sample (based on size, return on assets, and Big 4 auditor) of late filers and close filers.

groups. Generally, late filers have poorer audit outcomes, such as higher accruals and a greater likelihood of receiving a new modified going concern opinion. When the audit report is filed late, auditors are less likely to make an error related to the issuance of a going concern opinion. Overall, the results suggest that auditors of companies that filed close to the deadline may not have benefited from additional time to complete the audit of the annual report.

INSERT TABLE 6 HERE

VII. CONCLUSION

This study examines the unprecedented extensions of time to file during the COVID-19 pandemic. We use a difference-in-differences design to compare the changes in late audit filings between companies whose audit was contemporaneous with the pandemic and those whose audit was completed prior to, documenting evidence of an increase in the number of late filings. This analysis complements univariate evidence which documents a decrease in the number of 15-day extensions, but an overall increase in the number of late filings. Interestingly, this phenomenon is only observed in the initial months of the pandemic, suggesting that over time, auditors and their clients did not require additional time to file the audited annual report.

Importantly, this study further distinguishes between late filings that reference the auditor as a contributing factor in the delay and those that do not. We examine the moderating effect of late filings, both related and unrelated to the auditor, on audit outcomes during the COVID-19 pandemic. We do not observe evidence of a change in quality, measured using discretionary accruals, during the pandemic, but do observe a decline in quality among late filers, but only for reasons that are not attributable to the auditor. Finally, we observe an increase in the likelihood of a new going concern opinion, but a decrease in the likelihood of a Type I error made by the auditor. In additional analysis, we document that the presence of a Big 4 auditor reduces the likelihood of a late filing but only when the late filing references the auditor as a reason for the delay. We further find that when the late filing references the auditor, the likelihood of a late filing increases when the auditor is new to the engagement.

This study is not without its limitations. We rely on available measures of audit quality, and acknowledge that strong measures of quality, such as restatements and comment letters, are not yet available for our sample period. Future research may re-examine our quality findings utilizing these measures. As we don't observe an increase in the likelihood of a late filing in the latter part of 2020, future research may also determine whether there were negative consequences, such as restatements, associated with timely filings made during this period.

PART III: A Review to Motivate Future Research in Hospital Tax and Financial Reporting

I. INTRODUCTION

Hospitals are unique business entities, as evidenced by multiple ownership structures, significant regulation, and distinct institutional pressures. Hospitals are also substantial contributors to the U.S. economy. The U.S. healthcare industry, of which hospitals are the largest expenditure (CMS 2021), represents one of the largest categories of consumer spending (BLS 2020), and almost twenty percent of GDP (CMS 2021). Hospitals' unique operating environment and significant economic activity have motivated multiple reviews of the literature on management accounting and controls within the hospital industry (e.g. Eldenburg, Krishnan, and Krishnan 2017; Malmmose 2019). However, despite the importance of hospital financial performance and activity, the literature lacks a recent comprehensive review of hospital financial accounting, auditing, and tax reporting.

This study builds upon and extends the work of Forgione (1999), who reviews the professional hospital accounting literature and proposes relevant research opportunities.[73] This paper, likewise, reviews extant literature and, perhaps more importantly, seeks to advance future research in hospital accounting. I do so by providing an overview of data sources for hospital financial and tax research, providing descriptive evidence about publications in this field, and by offering specific suggestions for future research questions. Upon detailed review of relevant accounting research, I identify 41 studies of hospital research published in 14 leading accounting journals. Upon iterative processes of review

[73] Forgione (1999) offers suggestions for future research based on extant literature, but does not limit his discussion to literature related strictly to hospital financial and tax reporting.

and classification, I present the literature in this study based on two clearly identified research streams.

I first describe studies that compare financial reporting and other outcomes between hospital ownership structures: for-profit, nonprofit, and government. There are twelve papers in my sample that meet such criteria, but most of this literature was published more than fifteen years ago. The second, and more recent, research area comprises studies of tax-exempt hospitals. In addition to being more recent, this area offers unique opportunities to examine the role of hospital entities as both businesses *and* agents of social change. I identify literature that examines whether exempt status is warranted, the benefits of exempt status, competing incentives of managers of nonprofit entities, and issues related to audits of nonprofit hospitals.

Studies of tax-exempt hospitals also appear to offer the most promising avenues for future research. Within each subsection, I describe extant research, and propose ideas for future research. Suggestions for future research are motivated by both gaps in the literature and by significant regulatory and reporting changes that impact the hospital industry. I also offer summaries of the data sources used to pursue this research, and how extant and novel data sources may be leveraged to answer future research questions. The electronic Form 990 and related schedules made available by the IRS, for example, offer ample opportunity for hospital research, but is currently underutilized in the hospital accounting literature.

II. METHODOLOGY AND DATA SOURCES

Literature Review Methodology

My literature search was conducted in December, 2021 and January, 2022. To alleviate the concern of excluding papers that should be included in the study, i.e.,

committing a type II error, this initial search was intentionally comprehensive. I used Web of Science, EBSCO Business Source Complete, and ProQuest to access all accounting (Field 1501) and tax (Field 180125) journals ranked A*, A, or B on the Australian Dean's Council 2019 quality index. I searched within these journals for the terms "hospital" or "hospitals."[74,75] This search yielded 350 papers.[76] The complete list of journals included in the search may be found in Appendix E.

The second stage of my sample identification sought to reduce the likelihood of incorrectly including a paper that should be excluded from the study, a type I error. To reduce this concern, I reviewed all papers to identify those that related to hospital financial reporting, auditing, or tax. This process commonly eliminated literature related to cost accounting, managerial accounting, and management control systems, amongst others. I also removed from the sample studies about hospital reporting outside of the United States.[77] These review procedures narrowed my sample to 41 papers related to U.S. hospital financial accounting and tax reporting published in 14 unique journals.[78]

Figure 1 presents the distribution of papers published in each journal included in the sample. The *Journal of Accounting and Public Policy* has published the most hospital reporting papers (9), followed by the *Journal of Pubic Budgeting, Accounting, and*

[74] I limit my search to "hospital" rather than "healthcare" as I am interested in hospital financial reporting. Healthcare results instead yield literature related to insurance companies, federal agencies, and retirement benefits.

[75] To the best of my knowledge, this is the first comprehensive literature review about hospital financial reporting (rather than management accounting and controls). I thus do not limit my sample to any specific years. The earliest literature on hospital financial reporting was published in *The Accounting Review* in 1936.

[76] I exclude papers that do not include empirical analysis, such as book reviews or summaries of tax rulings.

[77] For a review of publications of hospital accounting research with an international scope, see Malmmose (2019).

[78] Studies cited in the footnotes of this paper, including literature reviews, are not included in the sample. These are generally studies that may be tangentially related to the associated topic but don't support the primary goal of this study.

Financial Management (5). Hospital financial research is also common in *Accounting Horizons* and *Financial Accountability and Management* (4 papers in each), as well as in *Contemporary Accounting Research*, *Journal of the American Taxation Association*, *National Tax Journal*, and *The Accounting Review*, which each published 3 papers on the topic. Within the sample, 24 percent of the papers (10) are published in journals ranked A*, 59 percent (24) in journals ranked A, and 17 percent (7) in journals ranked B.

INSERT FIGURE 1 HERE

In Figure 2, I present a summary of studies in each identified research category. I begin by introducing studies that consider how to best report and compare financial information between entities that are performing the same business activity, but based on organizational form, i.e. nonprofit, for-profit, or government, are required to report that activity in different ways (*Ownership Structure*). Each subsequent category examines activities within nonprofit hospitals (*Tax Exemption*). I focus on tax exempt hospitals for a number of reasons. First, the majority of the papers in my study (29) limit their analysis to nonprofit hospital entities. Second, these organizations are unique, and significantly influenced by competing incentives of business profits and community benefits. Finally, these hospitals have significant data available for study, from the Form 990 to audited financial statements.

INSERT FIGURE 2 HERE

The above categories were identified after a comprehensive review of the literature and designed to offer insights about extant accounting literature and to inform future research. Within the sample of studies examining differences based on hospital organizational form (12 papers), 5 papers examine financial reporting, 4 papers examine

competition, and 3 papers examine compensation. Within the sample of papers researching tax-exempt hospitals (29 papers), 9 studies examine strategic reporting, 8 study debt financing, 6 study exempt status, 5 study audit-related research questions, and 3 examine compensation-related issues.[79]

The distribution of sample papers by year is reported in Figure 3. Studies in my sample were published as early as 1936, and as recently as 2021. Of studies that examine various forms of hospital ownership structure, most were published in the earlier part of my sample, with 92 percent (11 papers) published in 2008 or earlier. Within the sample of studies examining tax exemption, 45 percent (13 papers) were published prior to 2008. The remaining 55 percent (16 papers) were published in the past 15 years. The more recent publication of nonprofit hospital research motivates the specific focus on these entities in Part IV and in my description of future research opportunities.

INSERT FIGURE 3 HERE

Hospital Data Sources

In this section I review common data sources in extant hospital research and identify rich sources of data that have not been frequently used in the literature. It is the latter sources that offer the most opportunities for future research related to hospital reporting.

Extant Research

In Table 1, I provide an overview of various sources of hospital financial and tax reporting data.[80] Some sources, such as California's Office of Statewide Health Planning and Development (OSHPD) and the Urban Institute's National Council for Charitable

[79] Two papers are reported in multiple categories. Beck et al. (2021) is included in both the debt financing and compensation categories and Zeidan and Khumawala (2014) is included in both the "is it earned" and strategic reporting categories.

[80] A review of sources for hospital management accounting research is provided by Eldenburg et al. (2017).

Statistics' (NCCS) Statement of Income (SOI) datasets, are commonly used.[81] Others, such as Internal Revenue Service (IRS) data on Amazon Web Services (AWS), are underutilized.

INSERT TABLE 1 HERE

In my sample, nine studies use OSHPD data. The OSHPD database includes hospital financial performance as well as nonfinancial performance metrics such as cost of care and patient discharge information. OSHPD also includes data on charity care and reporting requirements of the Affordable Care Act, such as Community Benefits reports.[82] One advantage of the OSHPD database is that it includes data on for-profit and government hospitals, as well as non-profit. However, of the studies using this data, the majority (6) examine only non-profit hospitals.[83] The remaining (3) leverage different ownership structures to compare outcomes between non-profit, for-profit, or government entities. One significant limitation of the OSHPD data is that it is limited to hospitals operating in California.

Within my sample, eight studies utilize SOI data. For many years, this was the only form of electronically formatted Form 990 data. As the dataset is comprised of tax returns filed by tax-exempt entities, this dataset only includes information for nonprofit hospitals. The data includes nonprofit organizations with total assets greater than $50 million plus a random sample of smaller nonprofit organizations, a sample representative of over 90 percent of all nonprofit revenues (Yetman and Yetman 2013). Leveraging the unique

[81] The SOI data originates with the Internal Revenue Service and is made available in a user-friendly format by NCCS.
[82] Charity care is patient care that is provided for free or at reduced costs. In a community benefit report, a hospital must document the means by which it provides for the community it serves.
[83] All but one of these studies precede the availability of comprehensive Form 990 data in electronic format.

disclosures on the Form 990, many of the studies in this review using SOI data examine research questions related to executive compensation. This data is only available from NCCS through tax year 2012, after which the IRS made data available via Amazon Web Services, as described below.[84]

Within my sample of 41 papers, four leverage data available in the Merritt Research Services database. While primarily used in studies examining debt financing, this dataset includes financial and non-financial hospital information, in addition to data about municipal bonds. As the Merritt database is focused on credit information related to municipal bonds, the dataset only includes those hospitals that have obtained bond ratings.[85] Unlike many sources described here, the Merritt database is a fee-based subscription service. There are three papers in my sample that utilize the U.S. Census Bureau Federal Audit Clearinghouse Single Audit (A-133) data. This dataset offers audit and control information for non-federal entities that have annual expenditures of Federal funds that exceed $750,000. The data includes the amount of federal awards as well as audit report outcomes such as internal control deficiencies. Thus, studies using this data commonly examine audit quality and control issues of nonprofit hospital entities.

Two papers in my sample utilize the American Hospital Association (AHA) Annual Survey Database.[86] This data source is comprehensive, including both financial and non-financial information, on hospitals of all ownership structures (government, non-profit, for-

[84] The Form 990 was originally introduced as a two-page form for tax years ending in 1941. In addition to basic financial information, the Form reported information about compensation and donors (Chasin, Kawecki, and Jones 2002). Today, the core Form 990 consists of 12 pages, with potential reporting of up to 15 additional schedules, the requirement of which depends on each nonprofits' individual activities.
[85] Watkins et al. (2003) report that the sample includes about 50 percent of U.S. nonprofit hospitals.
[86] The American Hospital Association (AHA), founded in 1898, is a membership organization representing nearly all U.S. hospitals.

profit) in all 50 states. Collectively, the AHA data includes information on approximately 6,200 hospitals. Studies utilizing AHA data are generally focused on areas related to financial reporting and disclosure. The AHA data is more comprehensive than publicly available Form 990 data, as it also includes nonfinancial information such as hospital beds, the presence of an emergency department, and whether the hospital is a teaching hospital. Similarly, the AHA data is more comprehensive than the OSPHD data, as it includes information for hospitals in all states, rather than a single jurisdiction. However, unlike many of the other listed sources of hospital data, the AHA data is not available to the public, but is available to subscribers for a fee.[87]

Future Research

One of the unique features of non-profits is that the information return filed annually with the IRS, Form 990, is the only publicly available form of tax return in the United States. As such, many studies related to non-profits and hospitals utilize data that is free and readily available to the public. However, distinctly lacking from this review is the utilization of Form 990 data made available on Amazon Web Services, with only one study in my sample acknowledging the use of this data. Starting in 2013, the IRS made all electronically filed Forms 990 available online.[88,89] The data is available in XML format,

[87] While not utilized in any other study in my sample, Lamboy-Ruiz, No, and Watanabe (2019) compare financial information presented in Medicare cost reports (MCRs), which are available for hospital entities in all states, with hospital financial statements. They find that most of the information in the MCRs is not consistent with what is presented in the audited financial statements. They conclude, however, that MCRs may still be a reasonable data source if financial statement information is not available.

[88] The data is available at https://registry.opendata.aws/irs990/. On December 16, 2021, the IRS announced it would no longer be updating 990 data published on Amazon Web Services (AWS). After December 31, 2021, all electronically filed Form 990 data will be made available on the IRS' Tax-Exempt Organization website, https://www.irs.gov/charities-non-profits/tax-exempt-organization-search-bulk-data-downloads.

[89] The availability of electronically filed returns also applies to Form 990-EZ, filed by organizations with gross receipts of less than $200,000 or net assets less than $500,000, and Form 990-PF, filed by Private Foundations.

requiring Python scripts to download and parse into a relational database (Wu and Dull 2021).[90]

The electronic 990 data includes Schedule H, *Hospitals*, the supplemental 990 schedule required for all nonprofit hospitals since 2009. The Schedule includes information about community benefits, bad debt, joint ventures, financial assistance, and other requirements of Internal Revenue Code (IRC) Section 501(r).[91] Further data on tax-exempt hospitals, including Form 990-T, the Exempt Organization Business Income Tax Return, may be found on the IRS' database of electronically filed returns or PDFs accessed through ProPublica's Nonprofit Explorer. The 990-T, the tax return that reports unrelated business income, is only available in electronic format following the Taxpayer First Act of 2019, which required tax-exempt hospitals, and other nonprofit organizations, to file the Form 990-T electronically for tax years ending December, 2020 and later.[92] While only available in PDF form, 990-T data accessed via ProPublica allows for longitudinal study of hospitals' unrelated business income. Prior to ProPublica, as illustrated by studies using 990-T data in this review, this data was obtained by means of a manual request for a copy of the Form 990-T to individual tax-exempt hospitals and other nonprofit entities.

III. LITERATURE REVIEW - OWNERSHIP STRUCTURE

Of the 5,141 community hospitals in the United States, 57.3 percent (2,946) are nonprofit, 24 percent (1,233) are for-profit, and 18.7 percent (962) are government-

[90] Example Python code is available from IRSx (https://github.com/jsfenfen/990-xml-reader) or at https://social-metrics.org/python/page/2/. However, both may require changes due to the transition of the data from AWS to the IRS' website.

[91] IRC Section 501(r) was introduced by the Affordable Care Act. The Section defines additional requirements, above and beyond IRC Section 501(c)(3), that hospitals must meet to maintain tax-exempt status.

[92] Unrelated business income is income that is generated by an activity that is considered a trade or business, is regularly carried on, and is not related to the organization's exempt purpose (IRC Section 512(a)(1)).

operated (AHA 2021).[93] While both nonprofit and for-profit hospital entities report financial statement activity using Generally Accepted Accounting Principles (GAAP), government entities follow standards issue by the Government Accounting Standards Board (GASB). Furthermore, the presentation of accounting information differs between for-profit and nonprofit entities, most notably via the use of fund accounting by nonprofit hospitals.[94]

Financial Reporting

The hospital financial reporting literature has long been concerned with the comparability of financial reports, as comparability is a key component of high-quality financial reporting. The FASB (2010) Statement of Financial Accounting Concepts No. 8 states: "information about a reporting entity is more useful if it can be compared with similar information about other entities and with similar information about the same entity for another period or another date." However, one of the fundamental challenges of hospital financial reporting is the differing ownership structures, each of which is accompanied by unique reporting requirements.

Over the years, the American Hospital Association (AHA) has made multiple recommendations for uniform reporting amongst hospital entities (in 1921, 1933, and 1966 (Flesher and Pridgen 2015)). Early literature on hospital financial reporting debated the best way to present financial information, and how to do so when dealing with multiple ownership structures. Rorem and Carroll (1936), describe the challenges of financial

[93] The varying ownership structures are one of the unique features of the hospital industry. The hospital setting is therefore frequently leveraged in management accounting and control research (see Eldenburg et al. (2017) for a review of this literature).

[94] Nonprofit hospitals and other tax-exempt entities use fund reporting, where income is designated based on whether or not the use of it is restricted by donors.

reporting when facing dual roles as a commercial enterprise and social agency. They offer support for the AHA's recommendations for distinct hospital financial reporting, including the benefits of standardized balance sheets, distinguishing income from patients from income from the community, and delineating operating and non-operating expenses. The distinction between commercial and social goals is further emphasized by later research which concludes that financial reports don't provide adequate information to compare performance across for-profit and non-profit hospitals. Consistent disclosure requirements between the two entities would be beneficial for users of hospital financial statements (Sherman 1986).[95]

To improve comparability between hospital entities, in 1986, the Healthcare Financial Management Association (HFMA) proposed that non-profit hospitals eliminate the use of fund reporting. Forgione and Giroux (1989) examine comment letter responses from U.S. hospitals and suggest that whether hospitals are in support of single-fund reporting depends on the size and profitability of the organization. The study raised concerns about the ability of unsophisticated financial statement users to distinguish between the operating position of a large hospital with many restricted funds from significant contributions and grants with donor stipulations, from a small hospital without such restrictions. With many questions about the appropriateness of financial reporting standards for hospitals, other research considers the best way to use financial statement information to evaluate hospital performance. Generally, profitability, liquidity, and debt

[95] Additional literature examines the disclosure of financial information. While hospital websites are easily accessible via common internet search engines, the majority of hospitals don't provide financial statement data on their website (Styles and Koprowski 2008). Some states, however, mandate the provision of financial information on a hospital's website. Future research on financial disclosure may consider variations in state reporting requirements.

coverage are strong measures of nonprofit hospital performance (Chu, Zollinger, Kelly, and Saywell 1991; Zeller, Stanko, and Cleverly 1996).

Competition

Other studies examine the role of ownership structure in hospital competition, with mixed results. Chang and Tuckman (1990) offer evidence, based on Tennessee hospitals, that higher property tax rates are not associated with greater market share for nonprofit hospitals. Using a larger sample, Gulley and Santerre (1993) do find that higher tax rates, both income and property, result in a lower market share of for-profit hospitals and a higher market share of tax-exempt hospitals. When hospitals acquire competition, purchase prices are higher when the seller is taxable than when the seller is tax-exempt (Dhaliwal et al. 2004), and for-profit hospitals are willing to purchase hospitals in financial trouble (Phillips 2003).

Compensation

Some studies examine executive compensation differences between hospital ownership types. Comparing government and private non-profit hospitals, Eldenburg and Krishnan (2003) predict and find that government hospital CEOs are paid less, and the hospitals have poorer financial performance. Eldenburg and Krishnan (2008) find that for-profit and nonprofit hospitals are more likely to use incentive contracts than government hospitals. Examining whether charity care is adversely affected by excess compensation, Eldenburg, Gaertner, and Goodman (2013) find a negative association between incentive-based compensation and charity care, but only in for-profit hospitals. This finding offers evidence that the institutional pressures of stakeholders in non-profit hospitals mitigates the negative effects of profit-based incentives.

Summary: Data and Publications

Table 2 Panels A, B, and C present summaries of the literature comparing financial reporting, competition, and compensation, respectively, between the various hospital ownership structures. The Panels describe each studies' research question, key findings, and sources of data. In addition, the Panels describe the states where the respective analyzed hospitals were located, and the type of hospital ownership structure included in each study. Early research on financial reporting was primarily based off of hospital financial statements, and thus samples were not limited to any specific state. However, the sample size of these studies was often very small. Two of the five papers (40 percent) were published in journals ranked A*, and the remaining three (60 percent) were published in journals ranked A. Some competition-related studies leverage state-specific data, thereby potentially limited the generalizability of the results to a broader population of U.S. hospitals. All four competition studies were published in A journals. All three compensation studies in this section utilize the California OSHPD data, and were published in journals ranked A*.

INSERT TABLE 2 HERE

IV. LITERATURE REVIEW - TAX EXEMPTION

The studies included in this section all examine tax-exempt hospitals. This subsector of the hospital industry is particularly interesting and important to study due to competing incentives and significant data availability.

Nonprofit hospitals must meet many standards to maintain their tax-exempt status. IRS Section 501(c)(3) requires that organizations be operated exclusively for exempt purposes, that there be no private benefit from the organization's earnings, that there be no

substantial lobbying, and that the organization not participate in any political activity. Beyond the minimum requirements for organizations qualifying under 501(c)(3), hospitals must also meet the standards of Revenue Ruling 69-545. This Ruling defines the community benefit standard, and requires that hospitals operate to serve a public interest, rather than a private. The Affordable Care Act introduced additional mandates for hospitals under IRC Section 501(r). These include the requirement to implement a community health needs assessment, to maintain a financial assistance policy, to limit charges to individuals who qualify for financial assistance, and to determine eligibility for assistance before engaging in collection actions.

Nonprofit hospitals exert significant efforts to meet these requirements and maintain their tax-exempt status. By doing so, they reap many benefits beyond exemption from federal income tax. They are eligible to receive tax-deductible contributions from donors, are exempt from many state taxes, including income, sales, and property, and may leverage tax-exempt financing. This section summarizes studies that consider the exempt status of non-profit hospitals. This literature includes the examination of whether hospitals have earned their exempt status, benefits of tax-exemption, the competing incentives of nonprofit hospital managers, and audits of tax-exempt hospitals.

Is it Earned?

Hospitals' tax-exempt status has been heavily scrutinized (Ofri 2020; Evans and Mathews 2021). Plante and Ragland (2017) examine whether hospitals "earn" their exempt status via the provision of charity care. They document that hospitals provide sufficient charity care to cover their share of property taxes. Kennedy, Burney, Troyer, and Stroup (2010) inform the debate by documenting that, in attempts to earn their tax-exempt status,

hospitals adjust charity care provisions based on minimum spending requirements. Likewise, Zeidan and Khumawala (2014) provide evidence that hospitals raise prices to report higher amounts of charity care. Considering perceptions of exempt-status, Wilkicki (2001) uses an experiment to document that participants respond negatively to high profits of tax-exempt organizations when charity care levels are low.[96]

Barniv, Danvers and Healy-Burress (2005) provide evidence related to the revocation of exempt status. They generally find that the size of the tax base (revenues) increases the likelihood of revocation, while the amount of charity care provided reduces the likelihood. Finally, Yetman and Yetman (2009) examine the likelihood of tax-exempt nonprofits to report income from activities that is unrelated to their charitable mission (UBIT). Generally, nonprofits select to engage in unrelated activities that have higher profits and lower costs. Hospitals are less likely to generate income from unrelated activities when they receive larger amounts of government funds.

Benefits

One significant benefit of tax-exemption available to hospital entities is the ability to finance activities via the issuance of municipal bonds.[97] The interest earned on these bonds is tax-free to investors, and thus investors are willing to accept a lower yield on their investment. This structure provides an incentive for individuals to finance hospital activities, and lowers the cost of debt financing for nonprofit entities.

Extant Research: Debt Financing

[96] Outside of academic literature, in a report by EY commissioned by the American Hospital Association, it is documented that nonprofit hospitals receive tax benefits of $9 billion, but provide community benefits of $95 billion (EY 2019).

[97] The bonds are issued by a state or local government which acts as a conduit for access to the tax-exempt bond market (Wedig 1996).

Trigeorgis (1991) discusses hospitals' incentives to engage in debt financing, suggesting that the inclusion of interest and other financing expenses in a cost-reimbursement system motivates the use of debt financing.[98] Some literature assesses credit ratings, the perceived creditworthiness of a tax-exempt hospital. Specifically, many studies critique determinants of bond ratings. Watkins (2000) suggests that while most studies examining bond ratings consider only financial accounting information, nonfinancial information, such as length of patient stay or occupancy percentage, is also representative of financial performance, and incrementally informative of a hospital's bond ratings. Motivated by the concern that the municipal bond market lacks adequate performance disclosures, Watkins et al. (2003) document that nonfinancial information predicts operating cash flows and is also informative to the bond market. Danvers (2003) examines credit rating agency disclosures for credit changes, but finds that many of these disclosures, such a profitability, aren't actually associated with credit rating changes. Examining the use of credit ratings, Gaver, Harris, and Im (2016) conclude that hospital donors consider both the presence and level of bond ratings when giving.

Beck, Gilstrap, Rippy, and Vansant (2021) examine strategies to reduce the cost of debt financing. They document that tax-exempt hospitals knowingly shift expenses from bad debt to charity care prior to a new bond issuance. They show further evidence that reporting a lower-than-expected bad debt expense results in lower cost of debt. Other studies examining the cost of debt financing find that hospital structure matters. Wedig, Hassan, Van Horn, and Morrissey (1998) show that chain hospitals, versus stand-alone, have greater leverage and lower cost of debt. Gershberg, Grossman, and Goldman (2001)

[98] Lynch (2003) continues this analysis in the context of a change in Medicare ruling that shifted cost reimbursement from actual to fixed fee, resulting in a decline in external financing.

demonstrate that competition among providers of tax-exempt debt results in lower costs of debt financing.

Future Research: Debt Financing

Future research about tax-exempt debt financing may consider rules that limit the use of debt-financed space, and recent regulatory changes that may influence debt-financing activities. One of the requirements of tax-exempt bond financing is that no more than 5 percent of the use of tax-exempt financed property should be private business use, which is the direct or indirect use of a tax-exempt financed property by an organization other than the borrower pursuing its exempt purpose.[99] Future research may examine the presence and reporting of private business use on Form 990 Schedule K, *Supplemental Information on Tax-Exempt Bonds*, and how this activity may influence credit ratings.[100]

The Tax Cuts and Jobs Act (TCJA) introduced multiple changes that may influence hospitals' debt financing activities. The reduction of the corporate tax rate from 35 percent to 21 percent may make the after-tax yield of tax-exempt bonds less attractive to investors, potentially increasing the cost of debt financial for hospitals and other nonprofit entities. In addition, the TCJA eliminated advance refundings, essentially removing hospitals' ability to refinance tax-exempt bonds to take advantage of low interest rates. Future research may examine how both of these changes influence the amount and source of debt hospitals utilize to fund capital projects.

[99] Examples of private business use include the use of the property in an unrelated trade or business, use of laboratory or research equipment by for-profit entities, or the leasing of parking spaces to third parties.
[100] This research may further examine how private business use influences donor contributions or executive compensation.

For fiscal years after December 15, 2017, nonprofits were required to apply Accounting Standards Update (ASU) No. 2016-14 (FASB 2016).[101] One of the most significant changes from the ASU was the presentation of net assets. Prior to the change, nonprofits were required to report three classifications of net assets: unrestricted, temporarily restricted, and permanently restricted.[102] Following the ASU, organizations will now report just two categories: net assets with donor restrictions and net assets without donor restrictions. In essence, the change is designed to reduce reporting complexity and confusion about how restrictions are imposed. The change is further designed to provide greater transparency about liquidity and financial performance. Future research may examine the impact of this change on donor behavior, on perceptions of liquidity, and whether costs of debt financing were impacted by the reporting changes. In addition, some organizations may continue to disclose three net asset classifications, offering opportunities to study voluntary disclosures and related consequences.

Competing Incentives

One of the defining features of tax-exempt hospitals are their dual responsibilities. Hospitals have institutional pressures to provide social benefits. By definition, excess funds are expected to be used to benefit the communities in which they serve, rather than to provide any private benefit. At the same time, hospitals are generally not funded by donations, and thus, profits and revenues from business activities are an important factor

[101] For most hospitals, this would most likely apply to financial reports for calendar years ending 12/31/2018 or fiscal years ending 9/30/2019.

[102] Unrestricted net assets are those that lack restrictions about the use of the funds. Temporarily restricted net assets are earmarked for a specific purpose, and must generally be used within a specified period of time. Permanently restricted net assets are also earmarked, and must to be invested in perpetuity.

in hospital success. Research about executive compensation and strategic reporting by managers considers these competing incentives.

Extant Research: Compensation

Management accounting literature often examines factors that influence compensation of physicians and other clinical staff. This review includes studies that examine hospital's executive compensation, including factors that influence how much executives are paid.

Gaver and Im (2014) examine how funding sources and regulation influence excess compensation within a sample of nonprofit hospitals. Within their sample, hospital executives receive the highest median pay. While hospitals don't have significant government grant funding or money from public donations, their primary income is program services revenues. However, program services revenues do include income from Medicare and Medicaid payments. Thus, hospitals are subject to significant regulation and oversight. The authors document a negative association between program service revenues and excess CEO compensation in the hospital industry.

Balsam and Harris (2018) also provide descriptive evidence of hospital executive pay. In their sample of nonprofit organizations, hospital executives are the most likely to receive bonuses, and receive the largest bonuses. They examine the association between pay and performance and document a positive association between hospital bonuses and hospital efficiency, program service revenues, and for-profit competition. Interestingly, bonuses are not associated with care-quality metrics, suggesting that executives are more likely to earn compensation incentives based on financial performance

In their sample of nonprofit hospitals, Balsam, Harris, and Saxton (2020) examine the determinants and consequences of perquisites. They find that, following universities,

hospitals have the highest number of disclosed perks. Paying for a health or social club and for tax indemnification is part of the compensation package for 19 and 15 percent of the hospital sample, respectively. However, the authors do not observe an association between total compensation and donations, which makes sense in the hospital context, as hospitals are reliant on patient revenues, rather than contributions, to support their activities.

Future Research: Compensation

With the introduction of electronic data and frequent legislative changes, perhaps the area most ripe for future research is hospital taxation and the reporting of executive compensation. The Tax Cuts and Jobs Act of 2017 (TCJA) made multiple changes applicable to compensation paid by non-profit organizations, and potentially hospitals in particular. Since 2018, non-profit entities have been required to pay an excise tax of 21 percent on compensation to covered employees that exceeds $1 million.[103] As extant research documents that hospitals have high compensation relative to other nonprofit entiteis (Gaver and Im 2014; Balsam and Harris 2018; Balsam et al. 2020), hospitals may be more likely to be subject to this new tax.

Nonprofits must report on the Form 990 whether the organization is required to file an excise tax return to make excise tax payments. Research may examine what types of organizations pay compensation in excess of $1 million, and whether and how donors respond to this disclosure. Research may also consider hospital actions in response to this rule. Did organizations lower compensation to avoid the tax? Did hospitals or other entities change the description of compensation or the compensation review process, as reported

[103] The 21 percent tax mirrors the current corporate tax rate. Covered employees include the CEO, CFO, and three highest paid individuals. Payments to medical professional including doctors and nurses are not subject to the excise tax.

on Form 990 Schedule J, *Compensation Information*? Did hospitals increase the amount of charity care reported on Form 990 Schedule H in attempts to justify high executive compensation?

Extant Research: Strategic Reporting

In this section I review studies that examine strategic reporting, in both the financial and tax contexts, by hospital managers. Nonprofit hospitals have incentives to manage earnings upwards to avoid scrutiny about poor financial performance, as well as pressure to reduce earnings and spend more to support their exempt purpose. The strategic management of financial reporting is evidenced in the use of discretionary accruals, classification of charity care and bad debt, and real earnings management.

Vansant (2016) offers evidence to support a traditional earnings management measure, discretionary accruals. He demonstrates that when a hospital provides charity care that exceeds normative expectations, managers use discretionary accruals to increase earnings. This indicates managers' belief that stakeholders are less critical of profits earned by tax-exempt organizations when the organization has provided sufficient charity care. Robbins, Turpin, and Polinski (1993) survey hospitals and document that management is more likely to use an income-increasing strategy when management compensation is tied to financial performance.

Beck et al. (2021) examine a less traditional measure of strategic reporting. They illustrate that hospital managers shift costs from bad debt, the unknown value of free care, to charity care, the known value of free care, in advance of a new bond issuance. In doing so, managers use accounting discretion to reduce creditors' uncertainty about revenue collectability and thus lower the costs of debt financing. Examining the reclassification of

bad debt to charity care in an earlier sample, Eldenburg and Vines (2004) document evidence that managers' decision to do so is related to the levels of cash on hand.

Other studies examine real activities management. Eldenburg, Gunny, He, and Soderstrom (2011) leverage the unique hospital setting to demonstrate that managers prefer to manage expenditures of non-operating and non-revenue generating activities as opposed to expenditures related to core patient activities. They further document that strong performance measures (in a setting uniquely absent equity-based compensation) are indicative of greater real earnings management. Soderstrom (1993) examines overbilling, in which hospitals misclassify patients into a diagnosis group that has a higher reimbursement, as a form of revenue manipulation.[104] Zeidan and Khumawala (2014) provide evidence that nonprofit hospitals increase prices to meet charity care requirements.

A number of studies examine strategic reporting in the tax context. A common measure of nonprofit performance is the program service expense ratio, which measures what percentage of an organization's' expenditures are used to support its exempt purpose. Krishnan and Yetman (2011) find that hospitals with significant normative pressures from stakeholders shift costs to program services. Those hospitals that instead face significant regulatory pressures are less likely to shift costs. Quosigk and Forgione (2018) examine the role of hospital affiliates in expense reporting. They find that those hospitals with unconsolidated affiliates report higher program service expense ratios, indicative of strategic reporting by management. Finally, Omer and Yetman (2003) examine the role of cost shifting on the Form 990-T. They document evidence to suggest that an abnormal

[104] In the context of for-profit hospitals, Heese (2018) extends this finding and documents that this practice allows hospitals to avoid other forms of earnings management such as discretionary accruals or expense reductions.

number of hospitals report taxable income of near zero, indicative of manipulation by management.

Future Research: Strategic Reporting

Numerous regulatory changes influence the potential for strategic reporting in hospital financial and tax filings. A significant change from ASU 2016-14 is the requirement to report a statement of functional expenses. All nonprofits, including hospitals, must now report expenses by both function (i.e. program, administrative, fundraising) and natural classification (i.e. salaries, rent). The change aligns the required financial statement disclosure with the presentation of functional expenses on the Form 990. Some argued against this requirement for hospitals, as they are not reliant on contributions (e.g. PwC 2015). As hospitals, and all nonprofit entities filing Form 990, were already required to make this disclosure on the tax form, future research may examine whether donors utilize the additional disclosure in the financial statements, and whether the disclosure is useful to other hospital stakeholders. Research may also consider whether program expense ratios, and managers' ability to manipulate the ratio, change in response to the disclosure requirement.

The Coronavirus Aid, Relief, and Economic Security (CARES) Act introduced many provisions that may influence hospitals' financial and tax reporting. One component, Provider Relief Funds (PRFs), provided for payments to hospitals to offset lost revenues during the pandemic. The receipt of PRFs raises questions about revenue recognition and how to account for government grants in financial reports. In addition, PRF receipt creates questions about the reporting of charity care and community benefits, as hospitals are

subject to limitations on the payments collected from COVID-19 patients.[105,106] It is therefore possible that COVID-19 increased the provision of charity care based on both the number of individuals requiring care and people's reduced ability to pay during times of economic crisis. However, the provision of community benefits, as reported on Form 990 Schedule H, may have declined due to social distancing requirements imposed by COVID-19. Other CARES Act induced changes include the expansion of telehealth networks, which may influence how hospitals define their community, and the related provision of community benefits. Future research may examine how COVID-induced changes influence the reporting of charity care and community benefits, and how managers respond to reporting these and associated accounts, like bad debt.

Other regulatory changes impacting hospital reporting include the TCJA's impact on the reporting of losses on Form 990-T. Prior to the tax law, profits and losses from different revenue streams generating unrelated business income tax (UBIT) were netted on the Form 990-T, with organizations paying income tax on the net amount. Following the change, nonprofits are no longer allowed to net profits and losses from different activities. Many nonprofit organizations report significant losses from investment activities, and utilize these losses to offset income from other revenue sources. Future research may examine whether the new rules to silo income streams results in an increase in organizations making tax payments. In addition, research examining unrelated business

[105] Charity care is care for which hospitals do not expect to be reimbursed. Charity care is one component of community benefits, which includes the provision of free or discounted medical care as well as investments in the community, an open emergency room, and financial assistance. Charity care represents 1.7 percent of total expenses, while community benefits represent 8.1 percent of total expenses (Zare, Eisenberg, and Anderson 2021).

[106] Providers may not pursue the collection of out-of-pocket payments in excess of what the patient would have been required to pay to an in-network provider (HHS 2022).

income tax liabilities (Omer and Yetman 2003) is dated; future research may examine whether nonprofit entities currently pay income taxes, whether managers manipulate reporting to avoid paying taxes, and whether the likelihood of a tax liability differs between different types of nonprofit entities, including hospitals.

The TCJA further deemed a tax-exempt organization's expenses related to qualified transportation fringe benefits taxable as unrelated business income. Organizations filed and paid such tax in years 2017 and 2018. In 2019, via the Taxpayer Certainty and Disaster Tax Relief Act of 2019, the tax on qualified fringe benefits was repealed. Organizations were instructed to file amended Forms 990-T to request refunds of tax liabilities associated with these expenses paid in prior years. While many hospital entities were likely already filing Form 990-T, it is possible that they weren't frequently reporting taxable income (Omer and Yetman 2003). Thus, this rule change offers a unique opportunity to examine how hospitals and other nonprofit entities respond to sudden and significant increases in tax liabilities, and whether reporting of other accounts changed to offset this new burden.

Research may examine how much tax organizations paid related to transportation expenses, and how organizations responded to this liability. For example, did hospitals have to alter the provision of charity care or other discretionary expenses to soften the burden of the new tax liability? Did hospitals or other nonprofit entities change benefit structures, as reported and described on Form 990 Schedule J? Finally, research may examine whether hospitals or other nonprofit organizations in different states responded differently; municipality-specific laws in locations such as New York City and Washington DC require the provision of certain commuter benefits that may conflict with new incentives arising from the unrelated business income tax.

Finally, Form 990 requires the accounting department to collect information from operations, human resources, and marketing departments, amongst others. Qualitative research may utilize Form 990 as a means to examine the relationship between the accounting and other departments and to identify how to improve the flow of information required for both tax and financial reporting. This research may also consider whether strategic reporting of certain activities, such as community benefits, occurs outside of the accounting department.

Audit

Extant Research

Studies considering hospital audits have focused on quality considerations and the audit committee. Following Sarbanes Oxley and increased public scrutiny and regulatory pressure, McGowan, Chan, Yurova, Liu, and Wong (2018) document improvements in quality, measured using internal control deficiencies and discretionary accruals in nonprofit hospitals. Other literature documents that hospitals using a Big 4 auditor had better internal control quality (Pridgen and Wang 2012; Lopez, Rich, and Smith 2013). However, Lopez et al. (2013) document a decline in hospital audits by Big 4 auditors during their sample period.

Early research surveys hospital trustees and finds evidence that trustees value the audit committee's expertise and relationship with the hospital CEO. Interestingly, trustees also thought that the audit committee should be responsible for overseeing hospital operations (Pumphrey and Howard 1986). Pridgen and Wang (2012) find that nonprofit hospitals with audit committees have better internal control quality. Vermeer et al. (2016)

document that nonprofit hospitals are less likely to have an audit committee comprised solely of independent directors.

Future Research

Extant audit research in the hospital context has focused on measuring audit quality and the moderating role of auditor size on quality outputs. Future research may consider other auditor characteristics, such as industry expertise. As hospitals straddle the line between for-profit and social entity, this research may consider whether non-profit industry expertise is sufficient to improve quality of non-profit hospital audits, or whether hospital-specific expertise is required. Consistent with recent research in the audit field, these lines of inquiry may examine expertise at the national, office, and partner-levels.

While some research has considered auditor size, measured as one of the Big 4 audit firms, future research may consider other measures of size, such as the size of the individual audit office. Other related considerations may include the number of clients served by an office or individual partner, which may capture busyness. Research may also consider an audit office or partner's ratio of for-profit to non-profit clients to examine whether other industry groups distract from audits of hospital entities. In this vein, research may likewise examine whether audit offices with significant hospital clients make more mistakes related to the identification of material weaknesses or restatements. As most hospitals have a fiscal year-end of September 30th, year-end audit work overlaps with the timing of control and interim testing for traditional December 31st year-end audit engagements, and thus auditors may be distracted from other engagements if working with a large portfolio of hospital clients.

To my knowledge, extant accounting literature has not examined financial restatements by hospitals. Future research may consider whether restatements, or other measures of audit quality, vary based on hospital ownership structure. Hospital audit quality research may also consider whether quality declined during COVID-19, when auditors were forced to work remotely. COVID-19 literature suggests that one of auditors' biggest challenges was obtaining electronic evidence from clients (Luo and Malsch 2020), which may be exacerbated in the non-profit industry, which often lags corporate America in technological developments.

Other audit-related literature may consider determinants of hospital mergers and acquisitions. Do any forms of auditor communication, such as going concern opinions, precede acquisitions of certain hospitals? How is audit quality impacted by hospital mergers? Future research may examine whether tax reporting risks influence hospital audit fees. These risks may include strategic reporting of program services expenses or charity care. Research considering the role of the audit committee in hospital reporting may examine whether the audit committee is responsible for reviewing Form 990, characteristics of the AC such as expertise, and consider textual analysis of descriptions of the role of governance in the filing of the annual tax return and affiliated schedules.[107]

Summary: Data and Publication

Studies of nonprofit hospitals and the related benefits, incentives, and audit issues are presented in Table 3. Each Panel describes the papers' research question, key findings, data source(s), and states in which the included hospitals reside. Panel A presents studies that examine tax-exemption. Data sources for these studies vary, including the SOI files and

[107] Additional directions for future research related to hospital governance functions may be found in Cardinaels and Soderstrom (2013).

the Merritt Research Database, with no clearly identifiable primary source for this research stream. Of the five studies in this category, four (80 percent) are published in journals ranked A, while the remaining study is published in a journal ranked B by the Australian Business Dean's List.

INSERT TABLE 3 HERE

Panel B presents a summary of the literature examining research questions related to debt financing. Data sources vary, but the OSHPD and Merritt Research databases are common. Accordingly, some of the data is limited to California hospitals, although many studies also utilize data from all fifty states. Just one of the studies examining debt financing (12.5 percent) is published in a journal ranked A*. Four of the studies (50 percent) are published in A journals, and the remaining three studies (37.5 percent) published in journals ranked B.

Panel C presents a summary of the compensation literature. These studies all utilize SOI data. One of the studies (33 percent) is published in a journal ranked as A* by the Australian Business Dean's List, while the remaining two studies (67 percent) are published in journals ranked A. Strategic reporting studies are summarized in Panel D. The OSHPD and SOI are common data sources, but other states' databases, including those of Texas and Florida, are also utilized. Of the nine papers in this category, four (44 percent) are published in journals ranked A*, and another four (44 percent) are published in journals ranked A. A summary of literature examining hospital audit issues is presented in Panel E. This literature exclusively examines nonprofit hospitals, likely due to availability of quality measures and auditor characteristics for these entities. The most common data sources for hospital audit research are Guidestar and A-133 audit reports. Audit-based hospital

research is commonly published in journals ranked A (three studies, 60 percent) and B (two studies, 40 percent).

V. CONCLUSION

This paper identifies, summarizes, and synthesizes research on financial and tax reporting in the hospital industry. In doing so, I aim to promote future research in this important area. Based on a review of all accounting and tax journals ranked A*, A, or B by the Australian Dean's Council, I identify 41 unique papers relevant to hospital reporting. I first present research examining the various hospital ownership structures in the areas of financial reporting, competition, and compensation, as well as a more detailed review of research of tax-exempt hospitals. This area presents significant opportunity for further research, in large part due to the availability of hospital data. Within this section I examine literature related to debt financing, compensation, strategic reporting, and auditing, and provide suggestions for future research based on data availability and regulatory changes in each field.

TABLE 1.1 Panel A: Descriptive Statistics

	N	Mean	Median	Std. Dev	p25	p75
INFLUENZA	36,902	-0.001	0.011	1.406	-1.045	1.059
NT	36,902	0.050	0.000	0.218	0.000	0.000
LAG	35,323	-6.892	-4.000	9.948	-12.000	-1.000
DA	21,748	0.114	0.068	0.138	0.029	0.141
AQ	18,864	0.040	0.029	0.034	0.017	0.050
MWE	31,627	0.035	0.000	0.184	0.000	0.000
RESTATEMENT	28,724	0.084	0.000	0.278	0.000	0.000
AUDIT FEES (log)	35,934	13.669	13.699	1.335	12.734	14.541
NAF (log)	30,661	11.742	11.724	1.834	10.508	13.019
SIZE	36,902	6.700	6.792	2.240	5.174	8.205
LIT	36,902	0.207	0.000	0.405	0.000	0.000
LEVERAGE	36,902	0.262	0.195	0.270	0.045	0.398
ROA	36,902	-0.057	0.012	0.297	-0.034	0.052
GC	36,902	0.052	0.000	0.222	0.000	0.000
FOREIGN	36,902	0.235	0.000	0.424	0.000	0.000
RESTATE	36,902	0.076	0.000	0.264	0.000	0.000
LOSS	36,902	0.441	0.000	0.496	0.000	1.000
RESTRUCTURE	36,902	0.245	0.000	0.430	0.000	0.000
MW	36,902	0.110	0.000	0.313	0.000	0.000
GEOSEG	36,902	1.663	1.000	1.980	0.000	2.000
BUSSEG	36,902	1.702	1.000	1.414	1.000	2.000
INV-REC	36,902	0.274	0.199	0.245	0.067	0.425
STD-CASH	21,748	0.076	0.045	0.098	0.024	0.086
STD-SALES	21,748	0.174	0.111	0.192	0.057	0.215
MB	31,627	2.700	1.617	5.851	0.938	3.059
EXTREME GROWTH	31,627	2.011	2.000	1.365	1.000	3.000
ACCELERATED	36,902	0.677	1.000	0.468	0.000	1.000
BIG 4	36,902	0.651	1.000	0.477	0.000	1.000
AUDITOR CHANGE	36,902	0.060	0.000	0.238	0.000	0.000
AUDIT TENURE	21,748	13.772	9.000	16.455	4.000	16.000
HEALTH	36,899	2.567	2.560	0.143	2.487	2.660
VACCINE	33,434	88.304	89.000	46.221	54.000	119.000
TAXES	36,872	0.059	0.058	0.038	0.032	0.088
DENSITY (log)	36,902	3.190	3.219	0.607	3.045	3.638
OFFICE GROWTH	36,902	0.039	0.000	0.194	0.000	0.000
EDUCATION	33,835	0.268	0.300	0.120	0.263	0.349

Table 1, Panel A presents descriptive statistics for the sample period 2008 – 2018. The variable of interest, *INFLUENZA*, measures the spread and severity of the flu within each state in our sample period. We define all variables in detail in the Appendix. We winsorize all continuous variables at the 1st and 99th percentiles. N is the number of observations based on the sample size in each respective multivariate model, Std. Dev. is the standard deviation, and p25 (p75) is the 25th (75th) percentile of the variable's distribution.

TABLE 1.1 Panel B: Pearson Correlation Matrices

	(1) *INFLUENZA*	*NT*	*LAG*	*DA*	*AQ*	*RESTATEMENT*	*MWE*	*AUDIT FEES*	*SIZE*
FLU	1								
NT	0.0155**	1							
LAG	0.0450***	0.366***	1						
DA	0.0293***	0.0841***	0.0805***	1					
AQ	0.0285***	0.0980***	0.0938***	0.346***	1				
RESTATE	0.00547	0.186***	0.0941***	0.0410***	0.0403***	1			
MWE	0.0155**	0.185***	0.0991***	0.0938***	0.0990***	0.136***	1		
FEES	0.0252***	-0.0707***	-0.0751***	-0.256***	-0.384***	0.0100*	-0.106***	1	
SIZE	0.00274	-0.117***	-0.110***	-0.342***	-0.507***	-0.0459***	-0.130***	0.774***	1
BIG 4	0.00119	-0.131***	-0.0853***	-0.188***	-0.266***	-0.0288***	-0.139***	0.602***	0.464***

Table 1, Panel B presents Pearson correlations for the independent variable of interest, dependent variables, and variables from robustness tests. We define all variables in detail in the Appendix. We denote statistical significant where * = $p < 0.05$, ** = $p < 0.01$, and *** = $p < 0.001$. P-values for all coefficients are conservatively reported as two-tailed.

TABLE 1.2: Influenza and Audit Delay

	(1) *Flu Season NT*	(2) *Non-Flu Season NT*	(3) *Flu Season Lag*	(4) *Non-Flu Season Lag*
INFLUENZA	0.029***	0.021	0.302***	0.090
	(2.70)	(0.91)	(6.38)	(0.86)
SIZE	-0.134***	-0.172***	-0.289	-0.457**
	(-6.02)	(-4.67)	(-1.56)	(-2.25)
LIT	-0.093	-0.036	-0.815	0.382
	(-1.33)	(-0.23)	(-1.51)	(0.43)
LEVERAGE	0.133**	0.271**	0.010	0.748
	(2.23)	(2.50)	(0.02)	(0.72)
ROA	0.067	-0.147	-0.565	-1.532**
	(1.47)	(-1.45)	(-1.50)	(-2.10)
GC	0.691***	0.581***	5.481***	5.415***
	(12.03)	(6.18)	(10.59)	(7.20)
FOREIGN	0.027	-0.026	0.767***	0.249
	(0.65)	(-0.43)	(3.17)	(0.81)
RESTATE	0.205***	0.144	0.575***	0.705*
	(4.07)	(1.63)	(2.92)	(1.86)
LOSS	0.373***	0.197***	-0.413	-0.874**
	(9.12)	(3.24)	(-1.59)	(-2.31)
RESTRUCTURE	-0.099***	0.033	-0.612***	-0.615
	(-3.54)	(0.60)	(-3.19)	(-1.36)
MW	1.034***	1.061***	5.586***	6.343***
	(25.97)	(13.35)	(11.11)	(13.69)
BUSSEG	0.026*	0.075***	0.456***	0.554***
	(1.69)	(2.67)	(2.87)	(2.66)
GEOSEG	-0.003	-0.043**	-0.059	-0.043
	(-0.31)	(-2.41)	(-1.45)	(-0.41)
INVREC	0.383***	0.243	0.505	-1.465
	(3.23)	(1.15)	(0.90)	(-1.22)
AUDIT FEES	0.161***	0.179***	0.683**	0.217
	(3.28)	(2.75)	(2.12)	(0.55)
BIG 4	-0.152*	-0.137	-0.691	-0.092
	(-1.82)	(-1.46)	(-1.18)	(-0.16)
AUDITOR	0.336***	0.344***	1.903***	1.111**
CHANGE	(7.08)	(3.73)	(7.56)	(2.02)
OFFICE SIZE	-0.059***	-0.091***	-0.276***	-0.373**
	(-4.24)	(-3.56)	(-3.61)	(-2.55)
Constant	-3.455***	-2.540***	-9.838***	1.690
	(-4.77)	(-3.07)	(-3.07)	(0.41)
Industry & Year FE	Yes	Yes	Yes	Yes
Observations	36,902	9,181	35,323	8,931
Adjusted R^2	0.303	0.335	0.116	0.166

The table presents the results of the OLS regression of the association between influenza (*INFLUENZA*) and audit delay. We measure *INFLUENZA* based on the spread and severity of the flu within each state in our sample period. *NT* is an indicator variable equal to 1 if the audit report was filed after the SEC deadline. *REPORT LAG* is measured as the number of days between the fiscal year end date and the filing date of the

audit report less the number of days provided by the SEC filing deadline. Columns (2) and (4) present falsification tests for clients whose audit does not directly overlap with flu season. The sample period is from 2008 to 2018. We define all variables in the Appendix. We winsorize all continuous variables at the 1st and 99th percentiles. Standard errors are clustered at the client and audit-firm levels to correct for heteroskedasticity. Year fixed effects are based on fiscal year, and industry fixed effects are based on Fama and French 48 industry classifications. The numbers reported in each cell are coefficients (t-statistics), with significance denoted as *** (1%), ** (5%), and * (10%). P-values for all coefficients are conservatively reported as two-tailed.

TABLE 1.3: Influenza and Accrual Measures of Audit Quality

	(1) *Flu Season DA*	(2) *Non-Flu Season DA*	(3) *Flu Season AQ*	(4) *Non-Flu Season AQ*
INFLUENZA	0.126***	0.073	0.028**	0.035
	(2.91)	(0.57)	(2.16)	(1.39)
SIZE	-0.009***	-0.004***	-0.003***	-0.002***
	(-7.05)	(-2.86)	(-8.97)	(-3.54)
LOSS	0.026***	0.026***	0.005***	0.003***
	(11.72)	(8.06)	(7.08)	(4.41)
FOREIGN	-0.005***	-0.007**	-0.000	-0.001
	(-2.67)	(-2.52)	(-0.61)	(-0.58)
BUSSEG	0.001*	0.001	-0.000*	-0.001**
	(1.77)	(0.97)	(-1.66)	(-2.26)
STD-CASH	0.320***	0.424***	0.148***	0.185***
	(14.66)	(7.77)	(13.57)	(16.24)
STD-SALES	0.014**	0.016	0.031***	0.026***
	(2.45)	(1.15)	(12.98)	(6.67)
LIT	-0.006	0.003	-0.002*	-0.000
	(-1.32)	(0.43)	(-1.65)	(-0.07)
MB	0.000	0.001**	0.000**	0.000*
	(0.99)	(2.01)	(2.44)	(1.70)
EXTREME	0.002**	0.001	0.000	0.000
GROWTH	(2.53)	(1.36)	(1.37)	(0.88)
RESTATE	0.004	0.008	-0.000	-0.000
	(1.56)	(1.42)	(-0.49)	(-0.19)
MW	0.012***	0.002	0.002*	0.002
	(2.86)	(0.50)	(1.81)	(1.43)
INVREC	-0.030***	-0.006	0.007**	0.017***
	(-4.59)	(-0.55)	(1.99)	(4.02)
RESTRUCTURE	0.000	-0.000	0.001	-0.002**
	(0.34)	(-0.10)	(0.81)	(-2.50)
BIG 4	-0.004	0.007	-0.000	-0.003
	(-0.78)	(1.14)	(-0.29)	(-1.34)
AUDITOR	0.006	-0.003	0.002**	-0.002
CHANGE	(1.50)	(-0.40)	(2.45)	(-1.54)
AUDIT TENURE	0.000**	-0.000	-0.000	-0.000***
	(2.53)	(-0.27)	(-0.29)	(-4.45)
Constant	0.133***	0.061***	0.034***	0.075***
	(7.17)	(5.02)	(8.05)	(29.88)
Industry & Year FE	Yes	Yes	Yes	Yes
Observations	21,748	7,369	18,864	6,768
Adjusted R^2	0.201	0.160	0.532	0.494

The table presents the results of the OLS regression of the association between influenza (*INFLUENZA*) and audit quality. We measure *INFLUENZA* based on the spread and severity of the flu within each state in our sample period. In order to present interpretable coefficients, we scale *INFLUENZA* by 100. Columns (2) and (4) present falsification tests for clients whose audit does not directly overlap with flu season. The sample period is from 2008 to 2018. We define all variables in the Appendix. We winsorize all continuous variables at the 1st and 99th percentiles. Standard errors are clustered at the client and audit-firm levels to correct for heteroskedasticity.. Year fixed effects are based on fiscal year, and industry fixed effects are based on Fama and French 48 industry classifications. The numbers reported in each cell are coefficients (t-statistics), with significance denoted as *** (1%), ** (5%), and * (10%). P-values for all coefficients are conservatively reported as two-tailed.

TABLE 1.4: Influenza and Other Measures of Audit Quality

	(1) *Flu Season MWE*	(2) *Non-Flu Season MWE*	(3) *Flu Season RESTATE*	(4) *Non-Flu Season RESTATE*
INFLUENZA	0.027**	0.011	0.004	-0.016
	(2.17)	(0.57)	(0.59)	(-1.06)
SIZE	-0.184***	-0.137***	-0.020*	-0.033
	(-7.80)	(-3.29)	(-1.71)	(-0.95)
LOSS	0.374***	0.198**	0.128***	0.130***
	(11.19)	(2.46)	(5.27)	(2.96)
FOREIGN	-0.024	-0.015	-0.007	-0.018
	(-0.54)	(-0.20)	(-0.23)	(-0.45)
BUSSEG	0.032	0.111***	0.005	0.055***
	(1.38)	(3.15)	(0.52)	(2.82)
LIT	0.142**	-0.290**	-0.077	-0.103
	(2.12)	(-2.01)	(-1.36)	(-0.58)
MB	-0.001	-0.001	-0.001	-0.011
	(-0.54)	(-0.11)	(-0.48)	(-1.51)
EXTREME	0.033***	0.025	0.031***	0.051***
GROWTH	(2.82)	(1.34)	(3.58)	(2.72)
LAG	0.594***	0.661***	2.005***	1.978***
RESTATEMENT	(13.01)	(6.46)	(29.61)	(33.81)
INVREC	0.131	-0.108	-0.028	0.099
	(0.95)	(-0.51)	(-0.40)	(0.70)
RESTRUCTURE	-0.134***	-0.217**	0.057**	0.098*
	(-2.93)	(-2.47)	(2.39)	(1.71)
BIG 4	-0.444***	-0.385***	-0.200***	0.074
	(-5.37)	(-5.22)	(-4.05)	(1.20)
AUDITOR	0.338***	0.425***	0.080	0.183**
CHANGE	(9.07)	(4.71)	(1.47)	(2.07)
AUDIT FEES (log)	0.117***	-0.015	0.074***	0.002
	(2.70)	(-0.26)	(3.35)	(0.04)
NAF	0.000	-0.001	0.004	0.011*
	(0.07)	(-0.14)	(1.11)	(1.71)
Constant	-2.040***	-5.297***	-2.756***	-2.228***
	(-3.66)	(-8.01)	(-8.87)	(-4.25)
Industry & Year FE	Yes	Yes	Yes	Yes
Observations	31,627	8,089	28,724	7,898
Pseudo R^2	0.183	0.200	0.331	0.336

The table presents the results of the OLS regression of the association between influenza (*INFLUENZA*) and audit quality. We measure *INFLUENZA* based on the spread and severity of the flu within each state in our sample period. Material Weakness errors are identified as those in which the auditor did not identify a MW in year t and management identified in the first, second, or third quarters of year t+1. *RESTATEMENT* is an indicator variable equal to 1 if the company restated its financial statements for the fiscal year. Columns (2) and (4) present falsification tests for clients whose audit does not directly overlap with flu season. The sample period is from 2008 to 2018. We define all variables in the Appendix. We winsorize all continuous variables at the 1st and 99th percentiles. Standard errors are clustered at the client and audit-firm levels to correct for heteroskedasticity. Year fixed effects are based on fiscal year, and industry fixed effects are based on Fama and French 48 industry classifications. The numbers reported in each cell are coefficients (t-statistics), with significance denoted as *** (1%), ** (5%), and * (10%). P-values for all coefficients are conservatively reported as two-tailed.

TABLE 1.5: Influenza and Quarterly Filing Delays

	(1) *NT 10-Q*	(2) *10-Q Lag*
INFLUENZA	-0.041	0.102
	(-1.26)	(1.28)
SIZE	-0.268***	-0.646***
	(-4.58)	(-4.83)
LIT	0.403**	-0.044
	(2.44)	(-0.10)
LEVERAGE	0.556***	0.920
	(2.88)	(1.53)
ROA	0.146	-0.231
	(0.97)	(-0.68)
GC	0.538***	0.500
	(3.23)	(0.92)
FOREIGN	0.118	0.208
	(0.82)	(0.56)
RESTATE	0.887***	0.848*
	(7.88)	(1.93)
LOSS	0.129	0.767***
	(1.15)	(2.82)
RESTRUCTURE	0.200	-0.401
	(1.41)	(-1.30)
MW	0.992***	2.084***
	(7.86)	(6.50)
BUSSEG	-0.003	0.140
	(-0.05)	(1.00)
GEOSEG	-0.047	0.003
	(-1.49)	(0.04)
INVREC	-0.029	-0.805
	(-0.09)	(-0.85)
AUDIT FEES (log)	0.190**	0.485
	(2.00)	(1.59)
BIG 4	-0.210	-0.381
	(-1.27)	(-0.83)
AUDITOR CHANGE	0.147	0.283
	(0.99)	(0.84)
OFFICE SIZE	-0.005	-0.048
	(-0.15)	(-0.47)
Constant	-6.466***	-4.663
	(-6.07)	(-1.36)
Year FE	Yes	Yes
Observations	2,221	2,393
Pseudo R^2	0.357	0.179

The table presents the results of the OLS regression of the association between influenza (*INFLUENZA*) and quarterly report delay. We measure *INFLUENZA* based on the spread and severity of the flu within each state in our sample period. The sample period is from 2008 to 2018. We define all variables in the Appendix. We winsorize all continuous variables at the 1st and 99th percentiles. Standard errors are clustered at the client and audit-firm levels to correct for heteroskedasticity. Year fixed effects are based on fiscal year, and industry fixed effects are based on Fama and French 48 industry classifications. The numbers reported in each cell are coefficients (t-statistics), with significance denoted as *** (1%), ** (5%), and * (10%). P-values for all coefficients are conservatively reported as two-tailed.

TABLE 1.6: Influenza and Audit Production Costs

	(1) *Audit Fees*	(2) *NAF*
INFLUENZA	0.017***	-0.003
	(3.24)	(-0.88)
SIZE	0.418***	0.255***
	(66.71)	(17.15)
LOSS	0.183***	-0.139***
	(11.33)	(-2.94)
LIT	0.019	-0.032
	(0.79)	(-0.63)
MB	0.003***	0.008***
	(3.33)	(5.77)
LEVERAGE	0.020	0.088
	(0.62)	(1.02)
ACCELERATED	0.127***	-0.282***
	(2.71)	(-6.36)
GC	0.148***	0.095*
	(4.63)	(1.73)
FOREIGN	0.143***	0.065**
	(8.25)	(2.02)
RESTATE	0.073***	0.035
	(3.80)	(1.57)
RESTRUCTURE	0.192***	0.185***
	(15.08)	(10.55)
MW	0.196***	0.027
	(6.96)	(0.71)
BUSSEG	0.078***	0.057***
	(17.24)	(9.13)
GEOSEG	0.052***	0.000
	(16.96)	(0.01)
INVREC	0.174***	-0.099
	(4.43)	(-1.02)
NAF	0.012***	
	(3.40)	
BIG 4	0.544***	-0.005
	(6.28)	(-0.03)
AUDITOR CHANGE	-0.112***	-0.075
	(-5.56)	(-1.52)
AUDIT FEES		0.613***
		(16.18)
Constant	9.641***	1.519***
	(72.10)	(3.28)
Industry & Year FE	Yes	Yes
Observations	35,934	30,661
Adjusted R^2	0.849	0.503

The table presents the results of the estimation of the association between influenza (*INFLUENZA*) and audit fees (*AUDIT FEES*) and non-audit fees (*NAF*). We measure influenza based on the spread and severity of the flu within each state in our sample period. Audit fees (non-audit fees) are presented as the natural log of audit (non-audit)-related service fees received by the audit firm for the fiscal year. The sample period is from 2008 to 2018. We define all variables in the Appendix. We winsorize all continuous variables at the 1st and 99th percentiles Standard errors are clustered at the client and audit-firm levels to correct for heteroskedasticity. Year fixed effects are based on fiscal year, and industry fixed effects are based on Fama and French 48 industry classifications. The numbers reported in each cell are coefficients (t-statistics), with significance denoted as *** (1%), ** (5%), and * (10%). P-values for all coefficients are conservatively reported as two-tailed.

TABLE 1.7: Matched Sample

	(1) *NT*	(2) *LAG*	(3) *DA*	(4) *AQ*	(5) *MWE*
INFLUENZA	0.026**	0.243***	0.172***	0.021*	0.030**
	(2.03)	(4.46)	(3.49)	(1.84)	(2.17)
SIZE	-0.160***	0.090	-0.009***	-0.003***	-0.191***
	(-7.00)	(0.96)	(-6.33)	(-8.87)	(-6.58)
Constant	-3.269***	-3.446	0.134***	0.036***	-2.328***
	(-4.60)	(-1.64)	(15.50)	(9.16)	(-4.58)
Controls	Yes	Yes	Yes	Yes	Yes
Industry & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	25,414	24,936	16,016	14,348	23,446
Adjusted/Psuedo R^2	0.307	0.096	0.196	0.533	0.181

The table presents the results of the estimation of the association between influenza (*INFLUENZA*) and non-timely filings (*NT*), audit report lag (*LAG*), discretionary accruals (*DA/AQ*), and material weakness errors (*MWE*) within a matched sample of clients in high and low flu states. We measure *INFLUENZA* based on the spread and severity of the flu within each state in our sample period. To present interpretable coefficients in Columns (3) and (4), we scale *INFLUENZA* by 100. We define all other variables in the Appendix. The sample period is from 2008 to 2018. We winsorize all continuous variables at the 1st and 99th percentiles Standard errors are clustered at the client and audit-firm levels to correct for heteroskedasticity. Year fixed effects are based on fiscal year, and industry fixed effects are based on Fama and French 48 industry classifications. The numbers reported in each cell are coefficients (t-statistics), with significance denoted as *** (1%), ** (5%), and * (10%). P-values for all coefficients are conservatively reported as two-tailed.

TABLE 1.8: Controlling for General Health

	(1) *NT*	(2) *LAG*	(3) *DA*	(4) *AQ*	(5) *MWE*
INFLUENZA	0.032***	0.305***	0.124***	0.030**	0.028**
	(2.93)	(6.17)	(2.75)	(2.57)	(2.19)
GENERAL HEALTH	-0.207	-0.161	0.002	-0.002	-0.076
	(-1.55)	(-0.29)	(0.25)	(-0.93)	(-0.59)
SIZE	-0.133***	-0.288	-0.009***	-0.003***	-0.183***
	(-5.99)	(-1.56)	(-7.09)	(-8.80)	(-7.80)
Constant	-2.901***	-9.399***	0.129***	0.039***	-1.844***
	(-3.58)	(-2.65)	(5.25)	(7.65)	(-2.71)
Controls	Yes	Yes	Yes	Yes	Yes
Industry & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	36,899	35,320	21,748	18,864	31,624
Adjusted/Psuedo R^2	0.303	0.116	0.201	0.532	0.183

The table presents the results of the estimation of the association between influenza (*INFLUENZA*) and non-timely filings (*NT*), audit report lag (*LAG*), discretionary accruals (*DA/AQ*), and material weakness errors (*MWE*) and controls for the general health of the sample population (*HEALTH*). We measure *INFLUENZA* based on the spread and severity of the flu within each state in our sample period. To present interpretable coefficients in Columns (3) and (4), we scale *INFLUENZA* by 100. Health measures the annual overall health of each state in our sample period based on data collected from the Centers for Disease Control and Prevention. We define all other variables in the Appendix. The sample period is from 2008 to 2018. We winsorize all continuous variables at the 1st and 99th percentiles. Standard errors are clustered at the client and audit-firm levels to correct for heteroskedasticity. Year fixed effects are based on fiscal year, and industry fixed effects are based on Fama and French 48 industry classifications. The numbers reported in each cell are coefficients (t-statistics), with significance denoted as *** (1%), ** (5%), and * (10%). P-values for all coefficients are conservatively reported as two-tailed.

TABLE 1.9 Panel A: Controlling for Vaccine Efforts

	(1) *NT*	(2) *LAG*	(3) *DA*	(4) *AQ*	(5) *MWE*
INFLUENZA	0.031***	0.308***	0.101**	0.031**	0.026*
	(3.18)	(7.38)	(1.97)	(2.42)	(1.95)
VACCINE	-0.001**	-0.000	-0.000	-0.000	-0.000
	(-2.36)	(-0.02)	(-1.32)	(-0.53)	(-0.96)
SIZE	-0.130***	-0.307*	-0.009***	-0.003***	-0.195***
	(-5.62)	(-1.65)	(-7.34)	(-8.66)	(-8.16)
Constant	-3.339***	-10.172***	0.132***	0.033***	-1.878***
	(-4.23)	(-3.01)	(7.81)	(7.57)	(-3.18)
Controls	Yes	Yes	Yes	Yes	Yes
Industry & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	33,434	31,979	19,589	16,848	28,048
Adjusted/Psuedo R^2	0.308	0.109	0.204	0.533	0.189

TABLE 1.9 Panel B: Controlling for State Resources

	(1) *NT*	(2) *LAG*	(3) *DA*	(4) *AQ*	(5) *MWE*
INFLUENZA	0.028***	0.299***	0.122***	0.028**	0.025**
	(2.68)	(6.37)	(2.85)	(2.15)	(2.04)
TAXES	0.100	2.913	0.024	0.008	0.239
	(0.23)	(0.93)	(0.93)	(0.75)	(0.38)
SIZE	-0.132***	-0.279	-0.009***	-0.003***	-0.185***
	(-5.99)	(-1.49)	(-7.07)	(-8.92)	(-7.91)
Constant	-3.436***	-9.764***	0.113***	0.035***	-2.056***
	(-4.77)	(-3.05)	(8.71)	(9.26)	(-3.70)
Controls	Yes	Yes	Yes	Yes	Yes
Industry & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	36,872	35,294	21,693	18,836	31,465
Adjusted/Psuedo R^2	0.303	0.116	0.200	0.531	0.182

The table presents the results of the estimation of the association between influenza (*INFLUENZA*) and non-timely filings (*NT*), audit report lag (*LAG*), discretionary accruals (*DA/AQ*), and material weakness errors (*MWE*). Panel A controls for vaccine efficacy (*VACCINE*) and Panel B controls for state-level resources available to help prevent the flu (*TAXES*). We measure *INFLUENZA* based on the spread and severity of the flu within each state in our sample period. To present interpretable coefficients in Columns (3) and (4), we scale *INFLUENZA* by 100. We define all other variables in the Appendix. The sample period in Panel A (B) is from 2009 (2008) to 2018. We winsorize all continuous variables at the 1st and 99th percentiles. Standard errors are clustered at the client and audit-firm levels to correct for heteroskedasticity. Year fixed effects are based on fiscal year, and industry fixed effects are based on Fama and French 48 industry classifications. The numbers reported in each cell are coefficients (t-statistics), with significance denoted as *** (1%), ** (5%), and * (10%). P-values for all coefficients are conservatively reported as two-tailed.

TABLE 1.10: Controlling for Population Density

	(1) *NT*	(2) *LAG*	(3) *DA*	(4) *AQ*	(5) *MWE*
INFLUENZA	0.029***	0.293***	0.127***	0.027**	0.027**
	(2.67)	(5.98)	(2.92)	(2.07)	(2.15)
DENSITY	0.004	0.424	-0.001	0.000	0.006
	(0.14)	(1.55)	(-0.27)	(1.06)	(0.22)
SIZE	-0.134***	-0.283	-0.009***	-0.003***	-0.184***
	(-6.03)	(-1.54)	(-7.07)	(-8.84)	(-7.81)
Constant	-3.467***	-11.112***	0.135***	0.033***	-2.059***
	(-4.63)	(-3.09)	(8.45)	(5.96)	(-3.70)
Controls	Yes	Yes	Yes	Yes	Yes
Industry & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	36,902	35,323	21,748	18,864	31,627
Adjusted/Psuedo R^2	0.303	0.117	0.201	0.532	0.183

The table presents the results of the estimation of the association between influenza (*INFLUENZA*) and non-timely filings (*NT*), audit report lag (*LAG*), discretionary accruals (*DA/AQ*), and material weakness errors (*MWE*) when controlling for population density (*DENSITY*). We measure *INFLUENZA* based on the spread and severity of the flu within each state in our sample period. To present interpretable coefficients in Columns (3) and (4), we scale *INFLUENZA* by 100. We define all other variables in the Appendix. The sample period is from 2008 to 2018. We winsorize all continuous variables at the 1st and 99th percentiles. Standard errors are clustered at the client and audit-firm levels to correct for heteroskedasticity. Year fixed effects are based on fiscal year, and industry fixed effects are based on Fama and French 48 industry classifications. The numbers reported in each cell are coefficients (t-statistics), with significance denoted as *** (1%), ** (5%), and * (10%). P-values for all coefficients are conservatively reported as two-tailed.

TABLE 1.11 Panel A: Alternative Measure of Busy Season

	(1) *NT*	(2) *LAG*	(3) *DA*	(4) *AQ*	(5) *MWE*
ALTINFLUENZA	0.023**	0.275***	0.126***	0.028**	0.025**
	(2.09)	(6.20)	(2.91)	(2.16)	(2.06)
SIZE	-0.134***	-0.291	-0.009***	-0.003***	-0.184***
	(-6.04)	(-1.57)	(-7.06)	(-8.96)	(-7.80)
Constant	-3.465***	-9.949***	0.133***	0.034***	-2.038***
	(-4.77)	(-3.10)	(7.16)	(8.12)	(-3.65)
Controls	Yes	Yes	Yes	Yes	Yes
Industry & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	36,902	35,323	21,748	18,864	31,627
Adjusted/Psuedo R^2	0.303	0.116	0.201	0.532	0.183

TABLE 1.11 Panel B: Alternative Measure of Influenza

	(1) *NT*	(2) *LAG*	(3) *DA*	(4) *AQ*	(5) *MWE*
ALTINFLUENZA2	0.022*	0.314***	0.132***	0.035**	0.030**
	(1.78)	(6.34)	(2.74)	(2.15)	(2.11)
SIZE	-0.134***	-0.290	-0.009***	-0.003***	-0.184***
	(-6.04)	(-1.56)	(-7.05)	(-8.95)	(-7.80)
Constant	-3.676***	-10.117***	0.125***	0.032***	-2.324***
	(-5.40)	(-3.25)	(6.90)	(7.75)	(-4.07)
Controls	Yes	Yes	Yes	Yes	Yes
Industry & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	36,902	35,323	21,748	18,864	31,627
Adjusted/Psuedo R^2	0.303	0.116	0.201	0.532	0.183

TABLE 1.11 Panel C: Alternative Sample Composition

	(1) NT	(2) LAG	(3) DA	(4) AQ	(5) MWE
INFLUENZA	0.029***	0.297***	0.001***	0.000**	0.025**
	(2.72)	(5.94)	(2.78)	(2.08)	(2.04)
SIZE	-0.132***	-0.279	-0.009***	-0.003***	-0.186***
	(-5.86)	(-1.51)	(-6.95)	(-8.89)	(-7.78)
Constant	-3.465***	-10.167***	0.132***	0.035***	-2.055***
	(-4.76)	(-3.10)	(7.07)	(8.10)	(-3.72)
Controls	Yes	Yes	Yes	Yes	Yes
Industry & Year FE	Yes	Yes	Yes	Yes	Yes
Observations	37,186	35,586	21,939	19,043	31,875
Adjusted/Psuedo R^2	0.303	0.116	0.201	0.531	0.183

The table presents the results of the estimation of the association between influenza (*INFLUENZA*) and non-timely filings (*NT*), audit report lag (*LAG*), discretionary accruals (*DA/AQ*), and material weakness errors (*MWE*) while varying flu measure and sample characteristics. In Panel A we measure *INFLUENZA* based on the spread and severity of the flu from January – March within each state in our sample period. In Panel B *ALTINFLUENZA* is the sum of the quintiles of the spread and severity measures. In Panel C we include companies with month-ends in November, December, and January. To present interpretable coefficients in Columns (3) and (4) of all Panels, we scale *INFLUENZA (ALTINFLUENZA)* by 100. We define all other variables in the Appendix. The sample period is from 2008 to 2018. We winsorize all continuous variables at the 1st and 99th percentiles. Standard errors are clustered at the client and audit-firm levels to correct for heteroskedasticity. Year fixed effects are based on fiscal year, and industry fixed effects are based on Fama and French 48 industry classifications. The numbers reported in each cell are coefficients (t-statistics), with significance denoted as *** (1%), ** (5%), and * (10%). P-values for all coefficients are conservatively reported as two-tailed.

TABLE 2.1: DESCRIPTIVE STATISTICS
Panel A: Number of Late Filings

	Full Sample			Early Pandemic Sample			Late Pandemic Sample		
	2019	2020	Difference (*p*-value)	2019	2020	Difference (*p*-value)	2019	2020	Difference (*p*-value)
15-day extension	170 0.070	148 0.061	0.202	135 0.071	109 0.057	**0.086**	35 0.069	39 0.076	0.630
45-day extension	0 0.000	124 0.051	**0.000**	0 0	124 0.065	**0.000**	0 0.000	0 0.000	N/A
Late filings	170 0.070	253 0.104	**0.000**	135 0.071	214 0.112	**0.000**	35 0.069	39 0.076	0.630

This Panel presents descriptive statistics of differences in the number of late filings for companies whose audit overlapped with the COVID-19 pandemic (*COVID AUDIT*=1). The first row of each cell reports the number of late filings. The second row of each cell reports the average number of late filings in the sample. *P*-values in the Difference Columns are based on two-sample t-tests for tests of differences in the number of extensions between the pre- and post- COVID-19 periods. Values in bold are statistically significant.

Panel B: Univariate Differences Between 15- and 45-Day Extension Filers

	N 15-day extension	N 45-day extension	Mean 15-day extension	Mean 45-day extension	Diff.
DA	78	89	0.148	0.141	-0.007
NEW GC	67	69	0.224	0.334	-0.110
TYPE I ERROR	15	23	0.467	0.739	**-0.273**
SIZE	109	105	4.237	4.593	0.356
ROA	109	105	-0.444	-0.341	0.103
MB	109	105	4.112	0.434	**-3.678**
FOREIGN	109	105	0.156	0.267	**0.111**
NUMIND	109	105	1.441	1.657	0.216
LOSS	109	105	0.835	0.819	-0.016
INVREC	108	104	0.247	0.317	**0.070**
LEVERAGE	109	105	0.409	0.477	0.068
LIT	109	105	0.230	0.315	0.085
SALESGROWTH	109	105	0.348	0.024	**-0.324**
CFTA	109	105	-0.218	-0.088	**0.130**
STD CASH	98	98	0.155	0.121	-0.034
STD SALES	98	98	0.228	0.220	-0.008
MW	109	105	0.597	0.543	-0.054
BIG 4	109	105	0.220	0.257	0.037

This Panel presents descriptive statistics for companies who filed for either a 15-day or 45-day extension of time to file the audited annual report. All continuous variables are winsorized at the 1st and 99th percentiles and all variables are defined in Appendix B. *P*-values are based on two-sample t-tests for tests of differences in the means between companies who requested a 15-day extension of time to file and those that requested a 45-day extension of time to file. Values in bold in the Diff. column are statistically significant (*p*-values < 0.10).

Panel C: Comparing Late Filers with Timely Filers (2020)

	N NOT LATE	N LATE	Mean NOT LATE	Mean LATE	Diff.
DA	1231	167	0.090	0.144	**0.054**
NEW GC	1086	136	0.067	0.280	**0.212**
TYPE I ERROR	191	94	0.953	0.851	**-0.102**
SIZE	1699	214	5.821	4.412	**-1.409**
ROA	1699	214	-0.149	-0.394	**-0.245**
MB	1694	214	2.800	2.308	-0.492
FOREIGN	1699	214	0.295	0.210	**-0.085**
NUMIND	1699	214	1.448	1.546	0.098
LOSS	1699	214	0.592	0.827	**0.235**
INVREC	1679	212	0.279	0.282	0.003
LEVERAGE	1694	214	0.300	0.442	**0.142**
LIT	1699	214	0.310	0.271	-0.039
SALESGROWTH	1699	214	0.181	0.189	0.008
CFTA	1699	214	-0.045	-0.154	**-0.109**
STD CASH	1585	196	0.088	0.138	**0.050**
STD SALES	1585	196	0.148	0.224	**0.076**
MW	1699	214	0.180	0.570	**0.390**
BIG 4	1699	214	0.487	0.239	**-0.248**

This Panel presents 2020 descriptive statistics for companies who filed the audited annual report late versus those who filed timely. All continuous variables are winsorized at the 1st and 99th percentiles and all variables are defined in Appendix B. *P*-values are based on two-sample t-tests for tests of differences in the means between companies who requested an extension of time to file and those that filed timely. Values in bold in the Diff. column are statistically significant (*p*-values < 0.10).

Panel D: Comparing Late Filers with Timely Filers (2019)

	N NOT LATE	N LATE	Mean NOT LATE	Mean LATE	Diff.
DA	1268	102	0.096	0.135	**0.040**
NEW GC	1157	85	0.041	0.236	**0.195**
TYPE I ERROR	156	55	0.987	0.982	**-0.005**
SIZE	1778	135	5.705	4.237	**-1.469**
ROA	1778	135	-0.140	-0.386	**-0.246**
MB	1773	135	2.549	3.140	0.592
FOREIGN	1778	135	0.293	0.237	-0.057
NUMIND	1778	135	1.461	1.467	0.006
LOSS	1778	135	0.587	0.807	**0.220**
INVREC	1757	134	0.291	0.298	0.007
LEVERAGE	1766	134	0.251	0.349	**0.098**
LIT	1778	135	0.306	0.311	0.005
SALESGROWTH	1713	129	0.241	0.159	-0.083
CFTA	1713	129	-0.046	-0.158	**-0.112**
STD CASH	1541	113	0.088	0.117	**0.029**
STD SALES	1541	113	0.148	0.224	**0.075**
MW	1778	135	0.175	0.689	**0.514**
BIG 4	1778	135	0.481	0.215	**-0.266**

This Panel presents 2019 descriptive statistics for companies who filed the audited annual report late versus those who filed timely. All continuous variables are winsorized at the 1st and 99th percentiles and all variables are defined in Appendix B. *P*-values are based on two-sample t-tests for tests of differences in the means between companies who requested an extension of time to file and those that filed timely. Values in bold in the Diff. column are statistically significant (*p*-values < 0.10).

TABLE 2.2: AUDIT TIMING DURING COVID-19
Panel A: Late Filings

	(1) 2020	(2) Early 2020	(3) Late 2020
POST	-0.006	-0.005	-0.009*
	(-1.23)	(-1.02)	(-1.93)
POST × COVID AUDIT	0.033***	0.038***	0.013
	(4.37)	(4.44)	(1.02)
SIZE	0.008	-0.004	0.063**
	(0.36)	(-0.17)	(2.44)
ROA	-0.070**	-0.064*	-0.125
	(-2.07)	(-1.83)	(-1.58)
MB	0.001	0.001	0.000
	(1.56)	(1.49)	(0.97)
FOREIGN	-0.030	-0.032	-0.016
	(-1.26)	(-1.19)	(-0.66)
BUSSEG	0.009	0.013	-0.005
	(0.84)	(1.08)	(-0.56)
LOSS	-0.021	-0.010	-0.018
	(-1.61)	(-0.67)	(-1.38)
INVREC	-0.035	-0.071	0.058
	(-0.41)	(-0.73)	(0.46)
LEVERAGE	0.063	0.078	-0.006
	(1.39)	(1.57)	(-0.09)
LIT	-0.072	-0.073	-0.011**
	(-0.43)	(-0.43)	(-2.10)
SALESGROWTH	-0.008	-0.008	-0.005
	(-1.11)	(-0.96)	(-0.51)
CASH FLOW	0.064	0.063	0.054
	(1.59)	(1.40)	(1.04)
MW	0.091***	0.090***	0.102***
	(3.83)	(3.47)	(3.05)
BIG 4	0.045	0.027	0.150
	(0.73)	(0.43)	(1.56)
Constant	-0.045	0.042	-0.614***
	(-0.28)	(0.25)	(-2.63)
Firm FE	Yes	Yes	Yes
Observations	7,888	6,924	4,302
Adjusted R^2	0.357	0.339	0.355

Panel B: Late Filings That Reference the Auditor

	(1) 2020	(2) Early 2020	(3) Late 2020
POST	-0.001	-0.001	-0.001
	(-0.48)	(-0.54)	(-0.55)
POST × COVID AUDIT	0.018***	0.022***	0.003
	(4.38)	(4.43)	(1.01)
SIZE	-0.009	-0.008	-0.003
	(-0.76)	(-0.63)	(-0.48)
ROA	-0.026	-0.027	0.002
	(-1.37)	(-1.31)	(0.27)
MB	-0.000	-0.000	0.000
	(-1.17)	(-1.11)	(0.22)
FOREIGN	-0.008	-0.008	-0.015
	(-0.57)	(-0.48)	(-1.06)
BUSSEG	-0.004	-0.005	-0.004
	(-0.67)	(-0.72)	(-0.88)
LOSS	0.003	0.007	0.003
	(0.42)	(0.73)	(0.56)
INVREC	-0.027	-0.031	-0.034
	(-0.50)	(-0.50)	(-1.02)
LEVERAGE	0.062**	0.069**	0.033
	(2.22)	(2.19)	(1.31)
LIT	-0.006	-0.005	-0.001
	(-0.35)	(-0.29)	(-0.28)
SALESGROWTH	0.003	0.003	-0.000
	(0.97)	(0.94)	(-0.21)
CASH FLOW	0.013	0.015	-0.008
	(0.57)	(0.59)	(-0.87)
MW	0.018	0.020	0.017
	(1.11)	(1.12)	(0.78)
BIG 4	-0.027	-0.027	-0.001
	(-0.94)	(-0.89)	(-0.22)
Constant	0.087	0.081	0.042
	(1.04)	(0.86)	(0.85)
Firm FE	Yes	Yes	Yes
Observations	7,328	6,448	4,142
Adjusted R^2	0.190	0.156	0.266

Panel C: Late Filings That Do Not Reference the Auditor

	(1) 2020	(2) Early 2020	(3) Late 2020
POST	-0.004	-0.003	-0.008*
	(-1.02)	(-0.76)	(-1.79)
POST × COVID AUDIT	0.018***	0.019**	0.010
	(2.61)	(2.56)	(0.79)
SIZE	0.013	0.001	0.066***
	(0.65)	(0.03)	(2.58)
ROA	-0.058*	-0.051	-0.129
	(-1.71)	(-1.46)	(-1.62)
MB	0.001*	0.001*	0.000
	(1.94)	(1.86)	(0.95)
FOREIGN	-0.022	-0.024	-0.001
	(-1.07)	(-1.03)	(-0.06)
BUSSEG	0.013	0.018	-0.001
	(1.32)	(1.60)	(-0.16)
LOSS	-0.025**	-0.017	-0.021*
	(-2.31)	(-1.42)	(-1.66)
INVREC	-0.009	-0.046	0.088
	(-0.11)	(-0.52)	(0.72)
LEVERAGE	0.015	0.026	-0.037
	(0.36)	(0.57)	(-0.60)
LIT	-0.071	-0.072	-0.010**
	(-0.42)	(-0.43)	(-2.02)
SALESGROWTH	-0.010	-0.009	-0.004
	(-1.36)	(-1.21)	(-0.42)
CASH FLOW	0.057	0.051	0.061
	(1.47)	(1.21)	(1.18)
MW	0.083***	0.080***	0.090***
	(3.88)	(3.49)	(3.14)
BIG 4	0.072	0.053	0.152
	(1.25)	(0.93)	(1.58)
Constant	-0.115	-0.017	-0.650***
	(-0.75)	(-0.11)	(-2.82)
Firm FE	Yes	Yes	Yes
Observations	7,684	6,730	4,274
Adjusted R^2	0.318	0.294	0.357

Panel D: Delay – Continuous Measure

	(1) 2020	(2) Early 2020	(3) Late 2020
POST	0.737***	0.767***	0.359
	(3.04)	(3.07)	(1.50)
POST × COVID AUDIT	1.420***	2.077***	-1.315**
	(3.95)	(5.16)	(-2.35)
SIZE	-0.012	-0.166	2.842**
	(-0.01)	(-0.13)	(2.30)
ROA	-4.245***	-3.963**	-5.392**
	(-2.64)	(-2.31)	(-2.04)
MB	-0.005	-0.001	0.016
	(-0.20)	(-0.03)	(0.56)
FOREIGN	-0.100	0.144	-0.368
	(-0.08)	(0.10)	(-0.23)
BUSSEG	0.028	0.229	-0.376
	(0.06)	(0.50)	(-0.95)
LOSS	-0.223	0.154	0.259
	(-0.36)	(0.22)	(0.41)
INVREC	-1.774	-1.048	-8.097
	(-0.38)	(-0.19)	(-1.57)
LEVERAGE	1.097	1.206	-1.499
	(0.51)	(0.53)	(-0.42)
LIT	0.914	0.903	1.370***
	(0.13)	(0.13)	(5.19)
SALESGROWTH	0.352	0.370	-0.194
	(0.92)	(0.96)	(-0.32)
CASH FLOW	0.912	1.550	0.615
	(0.52)	(0.80)	(0.25)
MW	5.814***	5.840***	5.876***
	(5.57)	(5.06)	(3.81)
BIG 4	-2.798	-2.627	1.892
	(-1.27)	(-1.16)	(0.78)
Constant	-7.438	-7.223	-30.941***
	(-0.83)	(-0.75)	(-2.97)
Firm FE	Yes	Yes	Yes
Observations	7,850	6,904	4,276
Adjusted R^2	0.681	0.683	0.784

This table reports the results of the audit timing analyses. Panel A presents the results of the difference-in-differences estimations for the late filings (*LATEFILE*) analysis. Panel B presents the results of the audit-specific late filings, while Panel C presents the results for those late filings that do not reference the auditor. Panel D presents the results of the difference-in-differences estimation using a continuous measure of audit timing. We present the results for the complete sample in Column (1), the early pandemic sample in Column (2), and the late pandemic sample in Column (3) of each panel. We define all variables in Appendix B. All continuous variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm-level. The numbers reported in each cell are coefficients (t-statistics), and significance is denoted as *, **, *** at *p*-value < 0.10, < 0.05, and < 0.01, respectively. P-values for all coefficients are conservatively reported as two-tailed.

TABLE 2.3: LATE FILING AUDIT OUTCOMES: DISCRETIONARY ACCRUALS

Panel A: Difference-in-Differences

	(1) *DA* 2020	(2) *DA* Early 2020	(3) *DA* Late 2020
POST	-0.004*	-0.003	-0.007***
	(-1.73)	(-1.48)	(-3.00)
POST × COVID AUDIT	0.004	0.005	0.001
	(1.24)	(1.40)	(0.15)
SIZE	0.004	-0.001	0.037**
	(0.34)	(-0.08)	(2.51)
ROA	-0.028*	-0.019	-0.097**
	(-1.80)	(-1.21)	(-2.56)
MB	-0.000	-0.000	-0.000
	(-0.86)	(-0.12)	(-0.77)
FOREIGN	-0.021**	-0.016	-0.020
	(-1.99)	(-1.43)	(-1.38)
BUSSEG	0.000	0.002	-0.005
	(0.02)	(0.46)	(-1.45)
LOSS	0.006	0.004	0.009*
	(1.49)	(0.84)	(1.88)
INVREC	-0.050	-0.034	-0.099
	(-1.14)	(-0.74)	(-1.30)
LEVERAGE	0.015	0.021	-0.060**
	(0.67)	(0.92)	(-2.03)
LIT	-0.009	-0.009	-0.023**
	(-0.89)	(-0.94)	(-2.17)
SALESGROWTH	0.009**	0.008*	0.013
	(2.05)	(1.71)	(1.53)
CASH FLOW	-0.002	0.001	0.064
	(-0.07)	(0.02)	(1.21)
STD-CASH	0.120	0.117	0.019
	(1.50)	(1.41)	(0.12)
STD-SALES	0.011	0.017	-0.030
	(0.41)	(0.60)	(-0.84)
MW	0.011	0.010	-0.003
	(1.58)	(1.35)	(-0.34)
BIG 4	0.029	0.023	0.080
	(1.28)	(1.06)	(1.64)
Constant	0.026	0.050	-0.241*
	(0.33)	(0.61)	(-1.89)
Firm FE	Yes	Yes	Yes
Observations	5,254	4,484	2,940
Adjusted R^2	0.467	0.467	0.470

Panel B: Late Filing Moderator

	(1) *DA*	(2) *DA*	(3) *DA*
COVID AUDIT	-0.002	-0.002	-0.001
	(-0.48)	(-0.43)	(-0.21)
LATEFILE	-0.010	0.022	-0.016*
	(-1.01)	(0.59)	(-1.79)
COVID AUDIT # LATEFILE	0.035***		
	(2.69)		
COVID AUDIT # LATEFILE AUDIT		0.002	
		(0.05)	
COVID AUDIT # LATEFILE NOT AUDIT			0.042***
			(2.90)
SIZE	-0.005***	-0.004***	-0.004***
	(-4.00)	(-3.84)	(-3.80)
ROA	-0.048***	-0.041***	-0.052***
	(-3.69)	(-2.99)	(-3.69)
MB	-0.000	-0.000	-0.000
	(-0.54)	(-0.78)	(-0.38)
FOREIGN	-0.002	-0.002	-0.003
	(-0.75)	(-0.64)	(-0.95)
BUSSEG	0.001	0.001	0.001
	(0.96)	(0.64)	(1.04)
LOSS	0.001	0.002	0.001
	(0.41)	(0.65)	(0.26)
INVREC	-0.006	-0.012	-0.004
	(-0.44)	(-0.91)	(-0.28)
LEVERAGE	0.002	0.002	0.004
	(0.25)	(0.20)	(0.45)
LIT	0.009	0.007	0.009*
	(1.53)	(1.26)	(1.70)
SALESGROWTH	0.009*	0.011**	0.010**
	(1.81)	(2.07)	(2.01)
CASH FLOW	0.015	0.012	0.021
	(0.77)	(0.56)	(1.01)
STD-CASH	0.237***	0.243***	0.232***
	(6.87)	(6.73)	(6.68)
STD-SALES	0.009	0.024	0.009
	(0.61)	(1.52)	(0.57)
MW	0.002	-0.000	0.004
	(0.48)	(-0.05)	(0.79)
BIG 4	-0.001	-0.002	-0.001
	(-0.20)	(-0.40)	(-0.14)
Constant	0.074***	0.074***	0.071***
	(7.09)	(7.10)	(6.73)
Industry FE	Yes	Yes	Yes
Observations	2,437	2,328	2,376
Adjusted R^2	0.327	0.312	0.318

This table reports the discretionary accruals analyses. Panel A presents the difference-in-differences estimation in which we report the results for the complete sample in Column (1), the early pandemic sample in Column (2), and the late pandemic sample in Column (3). Panel B examines the moderating effect of late filing on discretionary accruals, with all late filings are reported in Column (1), late filings related to the auditor in Column (2), and late filings not related to the auditor in Column (3). We define all variables in Appendix B. All continuous variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm-level. The numbers reported in each cell are coefficients (t-statistics), and significance is denoted as *, **, *** at *p*-value < 0.10, < 0.05, and < 0.01, respectively. P-values for all coefficients are conservatively reported as two-tailed.

TABLE 2.4: LATE FILING AUDIT OUTCOMES: NEW GOING CONCERN OPINIONS

Panel A: Difference-in-Differences – New Modified Going Concern Opinions

	(1) *NEW GC* 2020	(2) *NEW GC* Early 2020	(3) *NEW GC* Late 2020
POST	0.007	0.006	0.006
	(1.42)	(1.21)	(1.57)
POST × COVID AUDIT	0.050***	0.059***	0.004
	(5.36)	(5.57)	(0.39)
SIZE	-0.055**	-0.055**	-0.008
	(-2.26)	(-2.21)	(-0.28)
ROA	-0.229***	-0.218***	-0.188*
	(-4.48)	(-4.13)	(-1.79)
MB	-0.000	-0.001	0.000
	(-0.58)	(-0.76)	(0.17)
FOREIGN	-0.027	-0.027	-0.007
	(-0.99)	(-0.87)	(-1.09)
BUSSEG	-0.009	-0.006	-0.020
	(-0.84)	(-0.51)	(-1.60)
LOSS	-0.017**	-0.014*	-0.006
	(-2.45)	(-1.82)	(-0.92)
INVREC	0.013	0.076	-0.201
	(0.11)	(0.60)	(-1.29)
LEVERAGE	0.118*	0.148**	-0.048
	(1.68)	(2.00)	(-0.57)
LIT	0.270	0.260	
	(1.12)	(1.06)	
SALESGROWTH	-0.000	-0.003	0.006
	(-0.05)	(-0.33)	(0.49)
CASH FLOW	0.094*	0.104*	0.021
	(1.78)	(1.77)	(0.75)
MW	0.022	0.016	0.047
	(0.84)	(0.55)	(1.50)
BIG 4	0.064	0.041	0.141
	(1.37)	(0.94)	(1.13)
Constant	0.222	0.219	0.031
	(1.27)	(1.21)	(0.13)
Firm FE	Yes	Yes	Yes
Observations	4,148	3,690	2,022
Adjusted R^2	0.082	0.084	0.086

Panel B: Type I Going Concern Errors

	(1) *GCE* 2020	(2) *GCE* Early 2020	(3) *GCE* Late 2020
POST	-0.027**	-0.027**	-0.061
	(-2.26)	(-2.27)	(-0.91)
SIZE	-0.046***	-0.049***	0.011
	(-4.23)	(-4.00)	(1.24)
ROA	0.019	0.017	0.016
	(1.16)	(1.02)	(0.49)
MB	-0.001*	-0.001	0.001
	(-1.66)	(-1.41)	(0.47)
FOREIGN	0.050**	0.058**	-0.032
	(2.11)	(2.17)	(-0.95)
BUSSEG	-0.003	-0.011	-0.019
	(-0.20)	(-0.65)	(-0.59)
LOSS	0.045	0.021	
	(0.31)	(0.15)	
INVREC	-0.019	-0.031	-0.044
	(-0.45)	(-0.71)	(-0.49)
LEVERAGE	-0.065***	-0.079***	0.093
	(-2.88)	(-3.31)	(1.67)
LIT	0.017	0.023	0.045
	(0.72)	(0.84)	(1.07)
SALESGROWTH	0.007	0.006	-0.017
	(1.30)	(1.03)	(-1.07)
CASH FLOW	-0.018	-0.011	0.003
	(-0.96)	(-0.57)	(0.06)
MW	0.028	0.034	-0.031
	(1.39)	(1.57)	(-1.27)
BIG 4	-0.032	-0.023	-0.039
	(-1.11)	(-0.76)	(-0.63)
Constant	1.094***	1.147***	0.964***
	(7.05)	(7.51)	(12.51)
Constant	1.094***	1.147***	0.964***
	(7.05)	(7.51)	(12.51)
Industry FE	Yes	Yes	Yes
Observations	503	447	52
Adjusted R^2	0.301	0.301	0.622

Panel C: Type I Going Concern Errors - Late File Moderator

	(1) *TYPE I ERROR*	(2) *TYPE I ERROR*	(3) *TYPE I ERROR*
POST	0.010	0.004	0.003
	(0.66)	(0.26)	(0.20)
LATEFILE	0.017	0.006	0.011
	(0.82)	(0.19)	(0.50)
POST # LATEFILE	-0.117***		
	(-3.15)		
POST # LATEFILE AUDIT		-0.120*	
		(-1.79)	
POST # LATEFILE NOT AUDIT			-0.092**
			(-2.27)
SIZE	-0.050***	-0.042***	-0.050***
	(-4.14)	(-2.83)	(-4.03)
ROA	0.017	0.007	0.018
	(1.04)	(0.48)	(1.10)
MB	-0.001*	-0.000	-0.001
	(-1.70)	(-0.76)	(-1.46)
FOREIGN	0.055**	0.059**	0.059**
	(2.10)	(2.19)	(2.29)
BUSSEG	-0.010	-0.020	-0.017
	(-0.56)	(-0.86)	(-0.88)
LOSS	-0.003	-0.198***	0.184
	(-0.02)	(-2.65)	(1.19)
INVREC	-0.036	-0.096*	-0.020
	(-0.79)	(-1.88)	(-0.43)
LEVERAGE	-0.075***	-0.064***	-0.076***
	(-3.13)	(-2.61)	(-3.08)
LIT	0.010	0.004	0.015
	(0.34)	(0.10)	(0.49)
SALESGROWTH	0.007	0.004	0.007
	(1.26)	(0.70)	(1.33)
CASH FLOW	-0.012	-0.005	-0.011
	(-0.64)	(-0.29)	(-0.54)
MW	0.041*	0.033	0.055**
	(1.86)	(1.29)	(2.53)
BIG 4	-0.028	-0.013	-0.026
	(-0.94)	(-0.43)	(-0.90)
Constant	1.170***	1.354***	0.987***
	(8.16)	(11.77)	(5.93)
Industry FE	Yes	Yes	Yes
Observations	447	337	417
Adjusted R^2	0.322	0.284	0.308

This table reports the new going concern opinion and auditor accuracy analyses. Panel A presents the difference-in-differences estimation of the likelihood of a new going concern opinion. Panel B presents the going concern error analysis, and Panel C examines the moderating effect of late filing on the likelihood of a going concern error. Panels A and B present the results for the complete sample in Column (1), the early pandemic sample in Column (2), and the late pandemic sample in Column (3). In Panel C, all late filings are reported in Column (1), late filings related to the auditor in Column (2), and late filings not related to the auditor in Column (3). We define all variables in Appendix B. All continuous variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm-level. The numbers reported in each cell are coefficients (t-statistics), and significance is denoted as *, **, *** at *p*-value < 0.10, < 0.05, and < 0.01, respectively. P-values for all coefficients are conservatively reported as two-tailed.

TABLE 2.5: AUDITOR CHARACTERISTICS
Panel A: Big 4 Auditor

	(1)	(2)	(3)
	LATEFILE	*LATEFILE AUDIT*	*LATEFILE NOT AUDIT*
COVID AUDIT	0.045***	0.032***	0.018
	(2.77)	(4.05)	(1.18)
BIG 4	-0.002	0.004	-0.006
	(-0.20)	(0.85)	(-0.54)
COVID AUDIT # BIG 4	-0.054***	-0.040***	-0.025
	(-3.12)	(-4.21)	(-1.57)
SIZE	-0.010***	-0.005**	-0.007**
	(-3.07)	(-2.57)	(-2.25)
ROA	-0.093**	-0.065**	-0.064*
	(-2.55)	(-2.13)	(-1.82)
MB	-0.000	-0.000	-0.000
	(-0.57)	(-0.20)	(-0.51)
FOREIGN	-0.006	0.002	-0.009
	(-0.72)	(0.35)	(-1.23)
BUSSEG	0.003	0.000	0.003
	(1.02)	(0.21)	(1.15)
LOSS	0.026**	0.007	0.020**
	(2.38)	(0.91)	(2.10)
INVREC	0.063*	0.073***	0.005
	(1.89)	(2.99)	(0.16)
LEVERAGE	0.072***	0.034**	0.056***
	(3.31)	(2.22)	(2.76)
LIT	-0.029	-0.009	-0.025
	(-1.47)	(-0.61)	(-1.58)
SALESGROWTH	0.004	-0.005	0.008
	(0.36)	(-0.99)	(0.84)
CASH FLOW	0.043	0.058*	0.005
	(0.96)	(1.67)	(0.11)
MW	0.166***	0.080***	0.117***
	(8.33)	(5.39)	(6.40)
Constant	0.048*	0.006	0.046*
	(1.65)	(0.35)	(1.70)
Industry FE	Yes	Yes	Yes
Observations	3,462	3,317	3,382
Adjusted R^2	0.158	0.090	0.105

This Panel reports the moderating effect of a Big 4 auditor on the likelihood of a late filing. All late filings are reported in Column (1), late filings related to the auditor in Column (2), and late filings not related to the auditor in Column (3). We define all variables in Appendix B. All continuous variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm-level. The numbers reported in each cell are coefficients (t-statistics), and significance is denoted as *, **, *** at *p*-value < 0.10, < 0.05, and < 0.01, respectively. P-values for all coefficients are conservatively reported as two-tailed.

Panel B: New Auditor

	(1) *LATEFILE*	(2) *LATEFILE AUDIT*	(3) *LATEFILE NOT AUDIT*
COVID AUDIT	-0.002	-0.005	-0.003
	(-0.18)	(-0.80)	(-0.31)
NEW AUDITOR	-0.016	-0.013*	-0.007
	(-0.72)	(-1.83)	(-0.34)
COVID AUDIT # NEW AUDITOR	0.115***	0.120***	0.028
	(2.72)	(3.58)	(0.76)
SIZE	-0.010***	-0.005**	-0.007**
	(-3.08)	(-2.48)	(-2.32)
ROA	-0.090**	-0.059*	-0.064*
	(-2.43)	(-1.95)	(-1.81)
MB	-0.000	-0.000	-0.000
	(-0.62)	(-0.30)	(-0.52)
FOREIGN	-0.007	0.001	-0.009
	(-0.80)	(0.22)	(-1.26)
BUSSEG	0.003	0.000	0.003
	(0.98)	(0.14)	(1.18)
LOSS	0.025**	0.006	0.019**
	(2.25)	(0.78)	(2.05)
INVREC	0.062*	0.074***	0.005
	(1.87)	(3.01)	(0.16)
LEVERAGE	0.075***	0.037**	0.056***
	(3.44)	(2.43)	(2.79)
LIT	-0.029	-0.009	-0.025
	(-1.53)	(-0.62)	(-1.62)
SALESGROWTH	0.003	-0.004	0.008
	(0.34)	(-0.84)	(0.83)
CASH FLOW	0.037	0.050	0.004
	(0.81)	(1.43)	(0.09)
MW	0.162***	0.075***	0.117***
	(8.11)	(5.06)	(6.35)
BIG 4	-0.037***	-0.020***	-0.023**
	(-3.27)	(-2.83)	(-2.33)
Constant	0.081***	0.027	0.063**
	(2.93)	(1.62)	(2.47)
Industry FE	Yes	Yes	Yes
Observations	3,462	3,317	3,382
Adjusted R^2	0.162	0.103	0.104

This Panel reports the moderating effect of a new auditor on the likelihood of a late filing. All late filings are reported in Column (1), late filings related to the auditor in Column (2), and late filings not related to the auditor in Column (3). We define all variables in Appendix B. All continuous variables are winsorized at the 1st and 99th percentiles. Standard errors are clustered at the firm-level. The numbers reported in each cell are coefficients (t-statistics), and significance is denoted as *, **, *** at *p*-value < 0.10, < 0.05, and < 0.01, respectively. P-values for all coefficients are conservatively reported as two-tailed.

TABLE 2.6: SHOULD MORE COMPANIES HAVE UTILIZED THE EXTENSIONS?

	N *CLOSE FILER*	N *LATE FILER*	Mean *CLOSE FILER*	Mean *LATE FILER*	Diff.
DA	275	166	0.098	0.144	**0.046**
NEW GC	372	156	0.067	0.243	**0.176**
TYPE I ERROR	71	94	0.986	0.851	**-0.135**
SIZE	418	212	5.375	4.370	**-1.005**
ROA	418	212	-0.192	-0.395	**-0.203**
MB	417	212	2.820	2.324	-0.496
FOREIGN	418	212	0.186	0.212	0.026
NUMIND	418	212	1.296	1.556	**0.260**
LOSS	418	212	0.577	0.830	**0.253**
INVREC	413	210	0.312	0.280	-0.032
LEVERAGE	417	212	0.303	0.443	**0.140**
LIT	418	212	0.289	0.274	-0.015
SALESGROWTH	418	212	0.211	0.191	-0.020
CFTA	418	212	-0.086	-0.157	**-0.071**
STD CASH	386	194	0.092	0.140	**0.048**
STD SALES	386	194	0.160	0.226	**0.066**
MW	418	212	0.199	0.571	**0.372**
BIG 4	418	212	0.335	0.240	**-0.095**

This Table presents differences in means between companies who filed the annual report within three days of the due date (*CLOSE FILER*) and those that filed after the due date (*LATE FILER*). All continuous variables are winsorized at the 1st and 99th percentiles and all variables are defined in Appendix B. Values in bold in the Diff. column are statistically significant (*p*-values < 0.10). *P*-values are based on two-sample t-tests for tests of differences in the means.

TABLE 3.1: HOSPITAL DATA SOURCES

Source	Where to Access	Data Available	Studies Using Data	Hospital Type(s)	Studies' Sample Periods
California's Office of Statewide Health Planning and Development (OSHPD)	https://hcai.ca.gov/	Financial Non-financial Charity care	9	Nonprofit For-profit Government	1987-2013
SOI Files	https://nccs-data.urban.org/	Financial Tax	8	Nonprofit	1990-2014
Merritt Research Services	https://www.merrittresearch.com/	Financial Non-financial Municipal bonds	4	Nonprofit	1988-2000
U.S. Census Bureau Federal Audit Clearinghouse	https://facweb.census.gov/uploadpdf.aspx	Audited financial reports	3	Nonprofit	2001-2011
American Hospital Association Annual Survey	https://www.ahadata.com/aha-annual-survey-database	Financial Non-financial Charity care	2	Nonprofit For-profit Government	1992-2004
IRS Form 990 Filings	https://registry.opendata.aws/irs990/ https://www.irs.gov/charities-non-profits/tax-exempt-organization-search-bulk-data-downloads	Financial Tax Charity care	1	Nonprofit	2015-2018
Propublica Nonprofit Explorer	https://projects.propublica.org/nonprofits/	Form 990-T (PDF)	0	Nonprofit	N/A

TABLE 3.2: OWNERSHIP STRUCTURE LITERATURE

Panel A: Financial Reporting

Author(s) and Journal	Year	Research question	Key findings	Data source	State	Hospital Type
Rorem and Carroll (TAR)	1936	How to account for and report hospital activities	Hospital reporting should reflect the entities' dual role as a commercial enterprise and social agency	- AHA	All	NFP FP Gov't
Sherman (TAR)	1986	Do hospital financial statements allow for comparison of for-profit and nonprofit hospital reporting?	Financial reporting standards do not allow for comparability between for-profit and tax-exempt hospitals	Financial statement of single NFP hospital	Not stated	NFP FP
Forgione, and Giroux (FAM)	1989	To evaluate comments on HFMA Statement No. 8	Hospital managers lobby for reporting requirements consistent with the needs and operations of their unique organization	Comment letters	ALL	NFP
Chu et al. (JAPP)	1991	Which financial ratios are informative of hospital performance?	Informative hospital ratios include return on investment, cash position, debt structure, receivable intensiveness, and short-term liquidity.	Hospital financial statements	IN	NFP
Zeller et al. (JAPP)	1996	Which financial ratios are informative of hospital performance?	Key hospital financial ratios represent profitability, asset efficiency, capital structure, fixed asset age, working capital efficiency, and liquidity.	Financial Analysis Services database	ALL	NFP Gov't

Panel B: Competition

Author(s) and Journal	Year	Research question	Key findings	Data source	State	Hospital Type
Chang and Tuckman (NTJ)	1990	Do tax exemptions influence the market share of nonprofit hospitals?	Higher tax rates are not associated with greater market share for nonprofit hospitals	- Tennessee Department of Health and Environment	TN	FP NFP
Gulley and Santerre (NTJ)	1993	Are tax rates associated with the market share of nonprofit hospitals?	Higher corporate tax rates are associated with greater market share for nonprofit hospitals	- Not stated	ALL	FP NFP
Phillips, (JAPP)	2003	What factors influence the acquisition purchase price?	The free cash flow valuation and pre-acquisition operating margin are significant determinants of acquisition price	- Data availability varies by state	AZ, CA, CO, FL, IL, IN, LA, MA, OH, OK, SC, TN, TX, and VA	FP NFP
Dhaliwal et al. (JATA)	2004	What is the impact of the seller's tax liability on purchase price in an acquisition?	Taxable hospitals (with higher tax liabilities) have higher purchase prices than tax-exempt hospitals	- The Hospital Acquisition Report - Center for Medicare and Medicaid Services	All	FP NFP

Panel C: Compensation

Author(s) and Journal	Year	Research question	Key findings	Data source	State	Hospital Type
Eldenburg and Krishnan (JAE)	2003	How does governance structure influence CEO compensation and hospital performance?	CEO compensation is lower in district hospitals than in private NFP hospitals, and performance is comparatively lower	- OSHPD - SOI - Survey data	CA	NFP Government
Eldenburg and Krishnan (CAR)	2008	How does governance structure influence CEO compensation and accounting information expenditures?	Privately owned hospitals are more likely to use incentive pay, which then influences the demand for accounting information by the CEO	- OSHPD	CA	FP NFP Government
Eldenburg et al. (CAR)	2015	Does compensation influence the provision of charity care?	There is a negative association between pay-for-performance sensitivity and charity care in for-profit hospitals, but not in nonprofit	- OSHPD	CA	FP NFP

TABLE 3.3: TAX EXEMPTION LITERATURE

Panel A: Is it Earned?

Author(s) and Journal	Year	Research question	Key findings	Data source	State
Wilkicki (JATA)	2001	What is the effect of profits and charity care on perceptions of hospitals' tax-exempt status?	When charity care is low, perceptions of tax exemption are negatively influenced by high profits	- Questionnaire	CT, FL, KY, MA, NY, OH, RI, PA, NV
Barniv et al. (JATA)	2005	What factors influence the revocation of nonprofit hospitals' tax-exempt status?	The likelihood of revocation of tax-exemption is associated with the size of the tax base and the amount of charity care provided	- Merritt Research Database	ALL
Yetman and Yetman (JAPP)	2009	What are the determinants of nonprofits' taxable activities?	Medical NFPs, including hospitals, are more likely to generate unrelated business income when they receive less government funding	- SOI	ALL
Kennedy et al. (JAPP)	2010	Did regulatory changes requiring hospitals to provide certain community benefits influence the provision of those benefits?	In response to Texas legislation, hospitals increase or decrease charity care spending relative to the limit, and thus, overall, the rule reduced charity care spending in the state	- AHA annual survey	TX
Zeidan and Khumawala (JPBAFM)	2014	Do nonprofit hospitals use price increases to overstate charity care?	Hospitals set higher prices to overstate the reported value of charity care	- AHA - Texas Department of Health	TX
Plante and Ragland (JPBAFM)	2018	Do NFP hospitals provide sufficient charity care to support their exempt status?	NFP hospitals do provide enough charity care to cover waived taxes, thus supporting their tax-exempt status	- Form 990 - Tax Assessments	NH

Panel B: Benefits - Debt Financing

Author(s) and Journal	Year	Research question	Key findings	Data source	State
Trigeorgis 1991 (FAM)	1991	Why do cost-reimbursed nonprofits use debt financing	The cost-reimbursement system motivates the use of debt financing via the reimbursement of depreciation and other costs	N/A - models	N/A
Wedig et al. (JPBAFM)	1998	What are the effects of hospitals' chain membership on capital structures	Independent hospitals have poorer access to debt financing than hospitals that are part of a group structure	- OSHPD - Florida Agency for Health Care Administration	CA, FL
Watkins (JAPP)	2000	What is the association between hospitals' nonfinancial performance and credit worthiness	Nonfinancial performance measures provide incremental contributions, relative to financial performance measures, to assessments of credit worthiness, with measures of inpatient activity being positively associated with bond ratings	- Merritt Research Database	ALL
Gershberg et al. (NTJ)	2001	How does competition influence the cost of capital?	Competition amongst both underwriters and issuers results in lower borrower interest rates for hospitals	- Securities Data Company	ALL
Danvers (JPBAFM)	2003	How do rating agencies explain changes in credit ratings for nonprofit hospitals?	Revisions are associated with profitability, liquidity, service-mix, capital structure, and market share	- Merritt Research Database - Creditweek	ALL
Watkins et al. (API)	2003	Are financial performance measures sufficient indicators of hospital performance?	Nonfinancial measures also inform financial performance, suggesting financial statement users may need more information to assess hospital performance	- Merritt Research Database	ALL

Gaver et al. (AH)	2016	What types of NFPs purchase bond ratings, and what is the association between bond ratings and donations received?	Bond ratings are generally purchased by larger, more leveraged organizations. Hospital and university donors are more likely to use bond ratings in donations decisions.	- S&P and Moody's - SOI	ALL
Beck et al. (RAST)	2021	Do hospital managers update charity care reporting when issuing tax-exempt debt?	Managers shift bad debt expense to charity care in periods prior to bond issuance (resulting in a lower cost of debt)	- OSHPD	CA

Panel C: Incentives - Compensation

Author(s) and Journal	Year	Research question	Key findings	Data source	State
Gaver and Im (AH)	2014	How do funding sources influence CEO compensation?	Excess CEO compensation is negatively associated with government grants and public donations, and positively associated with investment income	- SOI	ALL
Balsam and Harris (RAST)	2018	What are the consequences of incentive pay at NFPs?	Hospital bonuses are positively associated with efficiency, program service revenues, and for-profit competition	- SOI	ALL
Balsam et al. (JAPP)	2020	What are the determinants and consequences of perquisites in NFPs?	Hospitals have the second highest number of disclosed perks (after universities). Generally, perks are more likely in large organizations with large endowments and less governance, and less likely at organizations with more outside monitors. Generally, donors are less likely to make contributions when perks are disclosed.	- SOI	ALL

Panel D: Incentives - Strategic Reporting

Author(s) and Journal	Year	Research question	Key findings	Data source	State
Robbins et al. (FAM)	1993	What is the association between environmental and firm characteristics and accounting choice strategy?	Nonprofit hospitals with management compensation plans are more likely to use income-increasing accounting strategies	- Survey	ALL
Soderstrom (JAPP)	1993	How do changes in cost reimbursement systems influence managers' strategies to increase profits?	Hospitals in poor financial condition and with higher marginal costs are more likely to change admission policies and make reporting errors to increase profits	- OSHPD	CA
Eldenburg and Vines (JAPP)	2004	Do managers change disclosures of bad debt and charity care in response to regulatory minimums?	Based on incentives from regulatory changes, managers respond to current cash positions when making classifications of bad-debt and charity care	- Florida Agency for Health Care Administration	FL
Eldenburg et al. (TAR)	2011	How do different types of expenditures influence real earnings management?	Earnings management is evident in non-operating and non-revenue generating activities, and in non-core operational expenses	- OSHPD	CA
Krishnan and Yetman (JAR)	2011	How do normative and regulative institutional factors influence NFP hospital cost shifting?	NFP hospitals facing pressure from donors shift costs to program services, while those facing regulatory oversight are less likely to do so	- OSHPD - SOI	CA
Zeidan and Khumawala (JPBAFM)	2014	Do nonprofit hospitals use price increases to overstate charity care?	Hospitals set higher prices to overstate the reported value of charity care	- AHA - Texas Department of Health	TX
Vansant (CAR)	2016	What is the association between social benefit pressures and earnings management of nonprofits?	Nonprofit managers use discretionary accruals to increase earnings when social benefits exceed stakeholders' expectations	- OSHPD	CA

Quosigk and Forgione (AH)	2018	What is the association between program ratios and hospital consolidation choices?	Hospitals that receive support from unconsolidated affiliates realize significantly higher program service ratios	- SOI	ALL
Beck et al. (RAST)	2021	Do hospital managers update charity care reporting when issuing tax-exempt debt?	Managers shift bad debt expense to charity care in periods prior to bond issuance (resulting in a lower cost of debt)	- OSHPD	CA

Panel E: Audit

Author(s) and Journal	Year	Research question(s)	Key findings	Data source	State
Pumphrey and Howard. (FAM)	1986	How do trustees and CFOs perceive the purpose and effectiveness of hospital audit committees?	Both trustees and CFOs believe that a goal of the audit committee is to relieve the board of the responsibility of overseeing the independent audit. Trustees generally consider the audit committee to be more effective than the CFO.	- Questionnaire	AR, LA, OK, TX
Vermeer et al. (AH)	2006	What is the composition of NFP audit committees?	Most nonprofit audit committees are completely independent, particularly in large organizations, those with significant government grants, and with Big 4 auditors	- Guidestar - Questionnaire	ALL
Pridgen and Wang (IJA)	2012	What is the impact of the audit committee on the internal control quality of NFPs?	Hospitals with audit committees and Big 4 auditors have better internal control quality	- Federal Audit Clearinghouse database of A-133 audits - Guidestar	ALL
Lopez et al. (JPBAFM)	2013	Does auditor size influence internal control deficiency disclosures in NFP healthcare entities?	Big 4 auditors are less likely to disclose internal control weaknesses (but only in small healthcare companies)	- Federal Audit Clearinghouse database of A-133 audits	ALL
McGowan et al. (JGNA)	2018	Did SOX influence the audit quality of nonprofit organizations?	Audit quality of NFP hospitals improves post Sarbanes Oxley	- Federal Audit Clearinghouse database of A-133 audits - Guidestar	ALL

FIGURE 1.1: Map of Influenza by State and Year

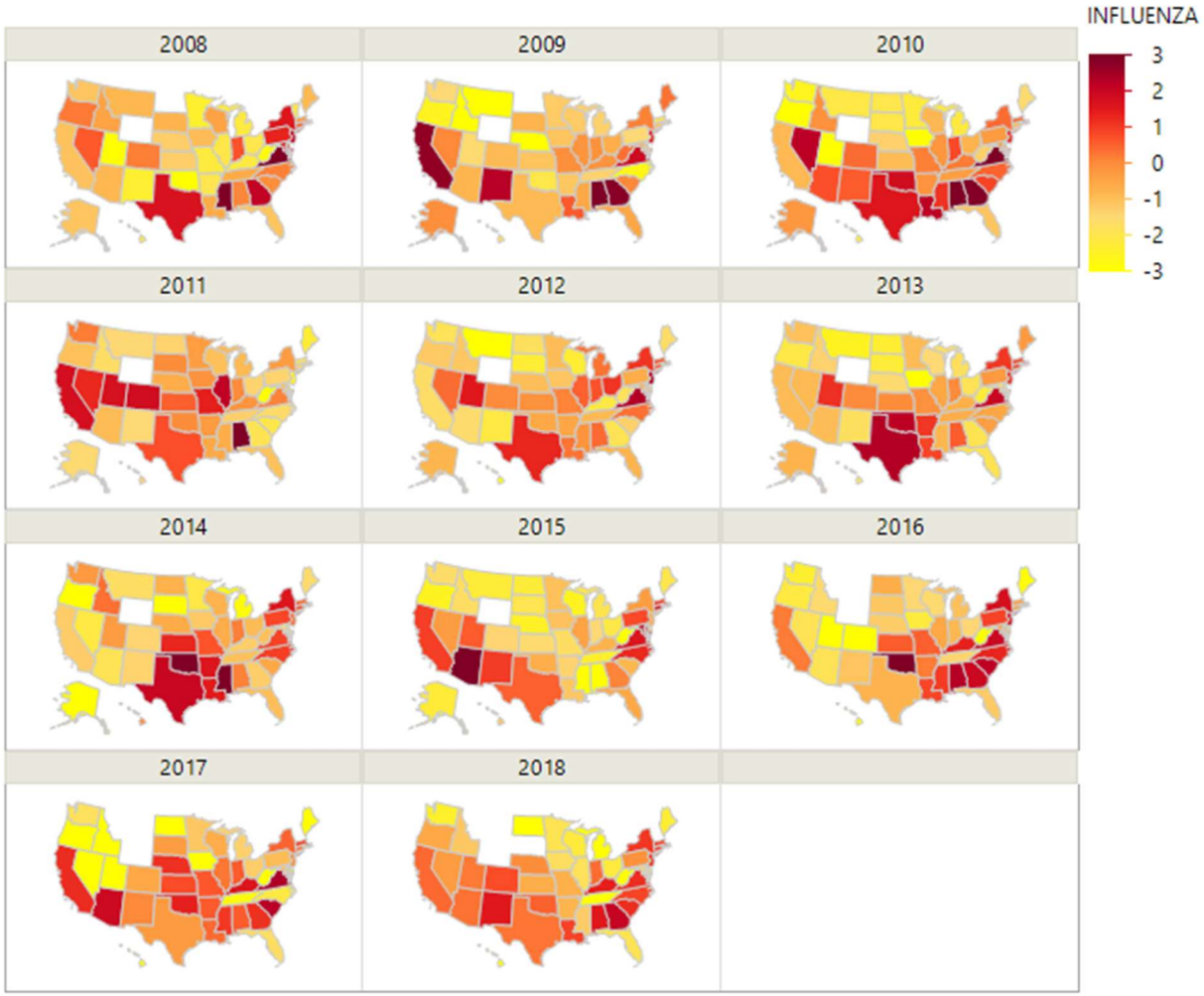


FIG. 1. – Map of influenza by state and year. The sample period is from 2008 – 2018. States colored white are omitted from the sample due to lack of audit offices serving as the lead auditor during the sample period.

FIGURE 2.1

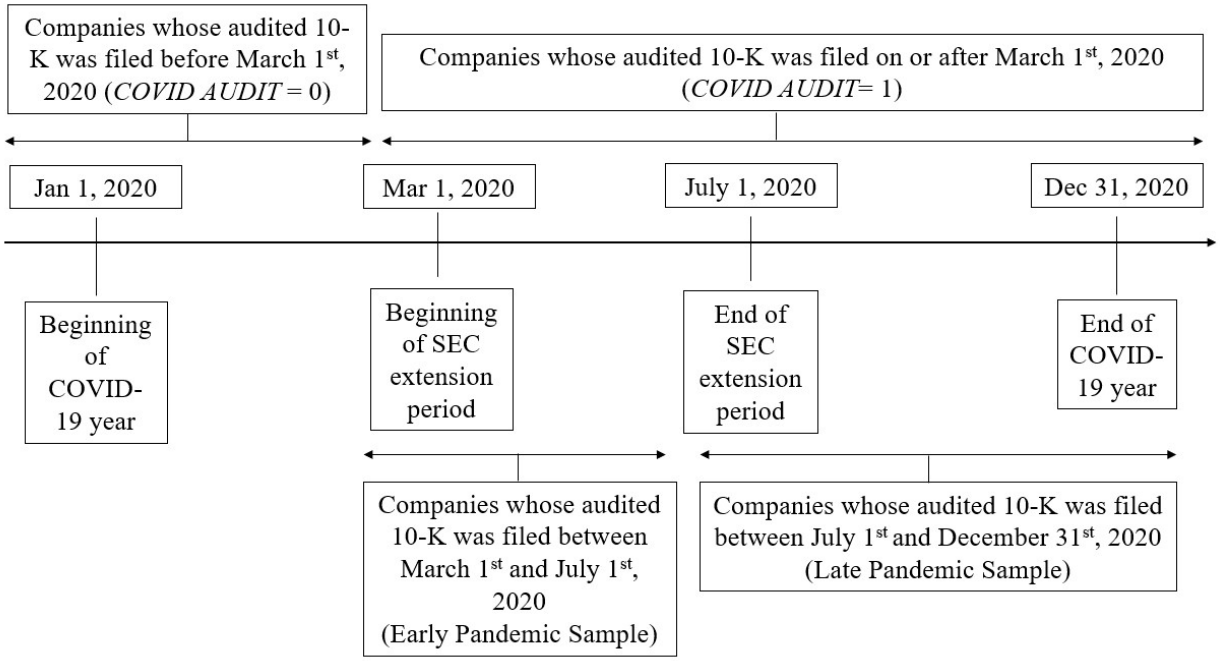


Fig. 1 presents the identification of the treatment and control groups based on the timeline of the COVID-19 pandemic.

FIGURE 3.1: Papers by Journal

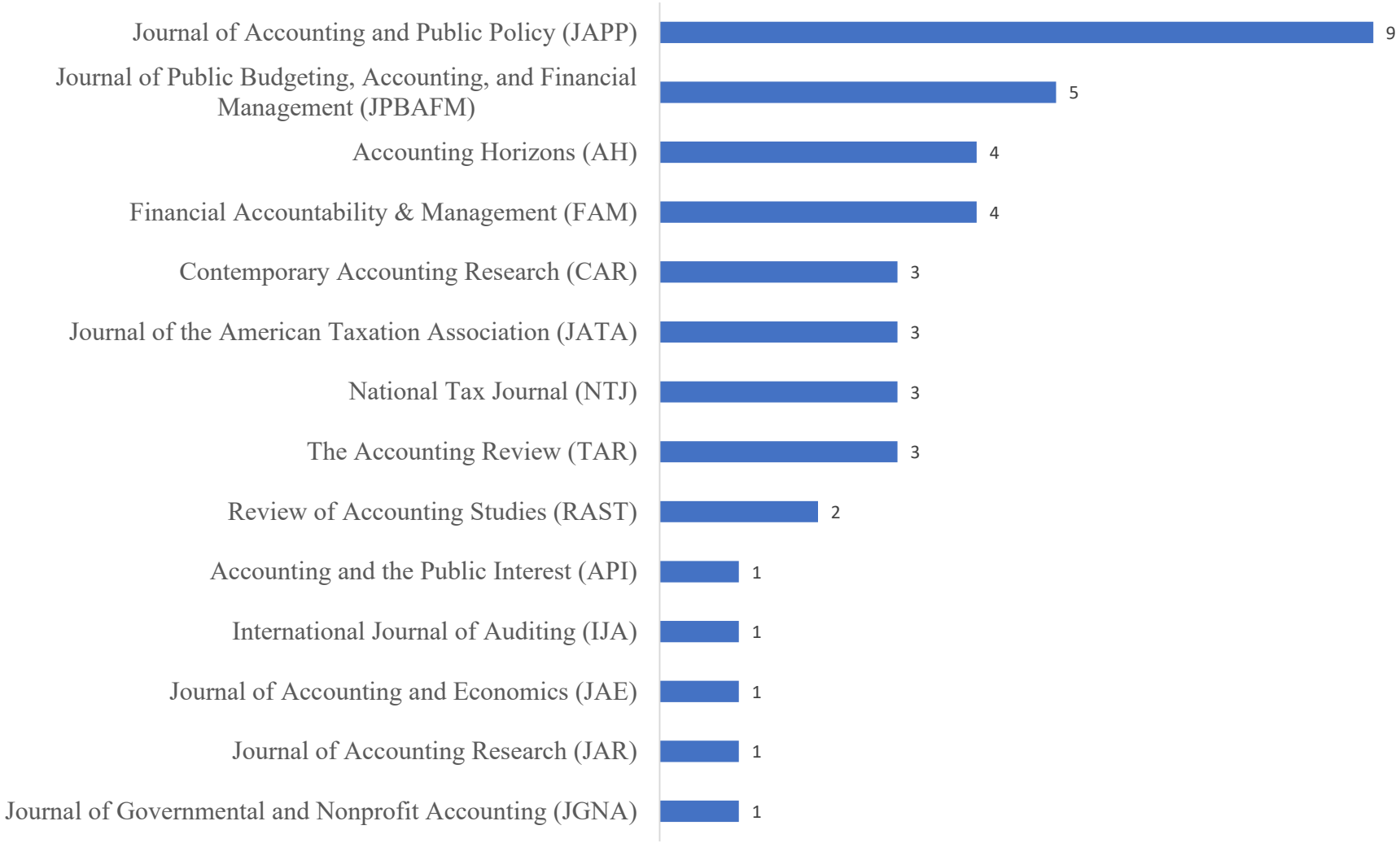
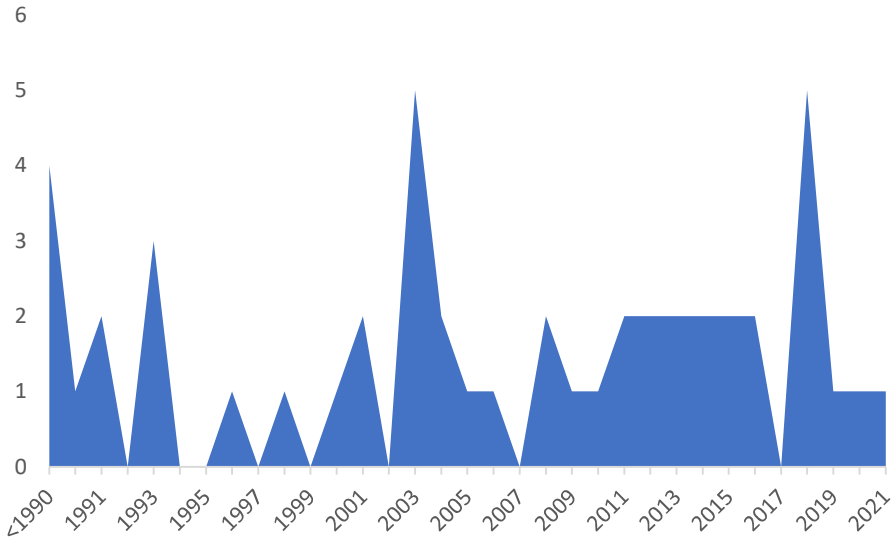


FIGURE 3.2: Papers by Category

Ownership Structure

Tax Exempt

FIGURE 3.3: Papers by Year



APPENDIX A
Variable Definitions

Dependent Variables	
NT	An indicator variable equal to 1 if filing date of the audit report was after the SEC filing deadline, 0 otherwise
LAG	The number of days between the fiscal-year end and the filing date of the audit report, less the filing period mandated by the SEC (60, 75, and 90 days for large accelerated, accelerated, and non-accelerated filers, respectively)
DA	Discretionary accruals estimated using the performance-adjusted modified Jones model (Kothari et al. 2005)
AQ	Accruals quality estimated following Dechow and Dichev (2002)
RESTATEMENT	An indicator variable equal to 1 for all companies that subsequently restated their financial statements, 0 otherwise
MWE	An indicator variable equal to 1 if the auditor failed to identify a MW in year t and management subsequently identified in the first, second, or third quarters of year t+1, 0 otherwise
FEES	The natural log of audit fees

Variable of Interest	
INFLUENZA	The sum of the quartiles of flu spread and severity measured from December 1st of year t-1 to March 31st of year t

Control Variables	
SIZE	The natural log of total assets
LIT	An indicator variable equal to 1 if the company operates in a highly litigious industry (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370), 0 otherwise
LEVERAGE	The ratio of total debt to total assets
ROA	Return on assets: net income for the current year divided by total assets as of fiscal-year end
GC	An indicator variable equal to 1 if the company received a going-concern audit opinion, 0 otherwise
FOREIGN	An indicator variable equal to 1 if the company reports an amount other than zero for foreign currency translation, 0 otherwise
RESTATE	An indicator variable equal to 1 if the company announced a restatement during the fiscal year, 0 otherwise
LOSS	An indicator variable equal to 1 if the company reported a net loss in year t or year t-1, 0 otherwise
RESTRUCTURE	An indicator variable equal to 1 if RCP, RCA, RCEPS, or RCD are nonzero, 0 otherwise
MW	An indicator variable equal to 1 if the company reported an internal control material weakness, 0 otherwise
BUS-SEG	The sum of reported business segments

GEO-SEG	The sum of reported geographic segments
INVREC	The sum of total inventory and total receivables scaled by total assets
STD-CASH	The rolling five-year window of standard deviation of operating cash flows
STD-SALES	The rolling five-year window of standard deviation of sales revenue
MB	Natural log of the market value of equity over book value of equity
EXTREMEGROWTH	Deciles of the percentage change in sales growth from year t-1 to year t
ACCELERATED	An indicator variable equal to 1 if the company is a large accelerated or accelerated filer, 0 otherwise
NAF	The natural log of non-audit fees
BIG4	An indicator variable equal to 1 if the auditor is one of the Big 4, 0 otherwise
AUDITOR CHANGE	An indicator variable equal to 1 if this is the first year the auditor is engaged by the client, 0 otherwise
AUDIT TENURE	The number of years the audit firm has been engaged by the client
HEALTH	A scale of 1-5, where 1=excellent health and 5=poor health
VACCINE	The percentage vaccine coverage for each state and year in the sample period
TAXES	State individual income tax rates for each year in the sample period
DENSITY	The log of state population density
HIGH GROWTH	An indicator variable equal to 1 if the audit office growth, measured as the percentage change in office size (fees), falls into the top decile, 0 otherwise
EDUCATION	The percentage of people within the state that have obtained a Bachelor's degree or higher

APPENDIX B

Part II: Variable Definitions

Dependent Variables	
LATEFILE	An indicator variable equal to 1 if filing date of the audit report was after the SEC filing deadline or if the company filed an extension due to extenuating COVID-19 related circumstances, 0 otherwise
DA	Discretionary accruals estimated using the performance-adjusted modified Jones model (Kothari et al. 2005)
NEW GC	An indicator variable equal to 1 if the company received a going concern opinion in in $year_t$ but not $year_{t-1}$, and 0 otherwise
TYPE I ERROR	An indicator variable equal to 1 if the auditor issued a going concern opinion but the client did not go bankrupt within a one-year period of the opinion, and 0 otherwise
Independent Variables of Interest	
COVID AUDIT	An indicator variable equal to 1 if the company's annual report was filed after March 1st, 2020, and 0 if filed after January 1st, 2020 and before March 1st, 2020.
POST	An indicator variable equal to 1 for the 2020 audit year, and 0 otherwise
Control and Additional Variables	
LNTA	The natural log of total assets
ROA	Return on assets: net income for the current year divided by total assets as of fiscal-year end
MB	Natural log of the market value of equity over book value of equity
FOREIGN	An indicator variable equal to 1 if the company reports an amount other than zero for foreign currency translation, 0 otherwise
NUMIND	The sum of reported business segments
LOSS	An indicator variable equal to 1 if the company reported a net loss in $year_t$ or $year_{t-1}$, 0 otherwise
INVREC	The sum of total inventory and total receivables scaled by total assets
LEVERAGE	The ratio of total debt to total assets
LIT	An indicator variable equal to 1 if the company operates in a highly litigious industry (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, and 7370), 0 otherwise
GROWTH	An indicator variable equal to 1 if the percentage change in sales growth from $year_{t-1}$ to $year_t$ falls into the 75th percentile , 0 otherwise
CFTA	Operating cash flows scaled by total assets
STD CASH	The rolling five-year window of standard deviation of operating cash flows
STD SALES	The rolling five-year window of standard deviation of sales revenue
MW	An indicator variable equal to 1 if the company reported an internal control material weakness, 0 otherwise
BIG 4	An indicator variable equal to 1 if the auditor is one of the Big 4, 0 otherwise
NEW AUDITOR	An indicator variable equal to 1 if the auditor is engaged to audit the annual report for the first time, and 0 otherwise

APPENDIX C

Examples of Form 12b-25 that Cite the Auditor

Panel A: Radiant Logistics

Radiant Logistics, Inc. (the "Registrant" or "Company") is unable, without unreasonable effort or expense, to file its Form 10-K for the year ended June 30, 2020 (the "Form 10-K") within the prescribed time period primarily due to circumstances related to the COVID-19 pandemic and the associated work-from-home strategies being deployed by the Company, as well as the Company's inability to timely interface with its auditors and third-party tax and valuation advisors critical to the audit process, principally caused by difficulties inherent in the remote workforce protocols adopted by the Company in response to the COVID-19 pandemic. The Registrant currently anticipates that it will file the Form 10-K within the additional time provided by Rule 12b-25 of the Securities Exchange Act of 1934, as amended.

Panel B: FingerMotion

The registrant was not, without unreasonable effort or expense, able to file its Annual Report on Form 10-K for the year ended February 29, 2020 by the applicable due date due to it continuing to be a development-stage company with limited internal compliance, financial reporting and accounting functions and due to significant logistical challenges due to the coronavirus pandemic.

The company further discloses that the current outbreak of COVID-19 "has posed a significant impact on the Company to file on a timely basis its Annual Report on Form 10-K for the year ended February 29, 2020 (the "Annual Report") that is due May 28th, 2020 (the "Original Due Date"), and therefore the Company intends to rely on the conditional filing relief provided under SEC Release No. 34-88465 (the "Covid-19 Order"). As we disclose in a statement from our auditors to be filed as an Exhibit to the 8-K Report filed concurrently with this Amendment, our accounting team and independent auditors have not been able to conduct on-site accounting and auditing work due to the pandemic and related government-mandated lockdowns. Considering the lack of time for the compilation, dissemination and review of the information required to be presented and the importance of markets and investors receiving materially accurate information in the Annual Report, we have decided to rely on the endeavor to file the Annual Report no later than July 12th, 2020, or within 45 days after the Original Due Date.

APPENDIX D

Examples of Extension Requests following SEC Orders 34-88318 and 34-88465 that Cite the Auditor

Panel A: School Specialty

School Specialty, Inc. (the "Company") is providing the following update on the filing of its Annual Report on Form 10-K for the fiscal year ended December 28, 2019 (the "Report"). The Company has determined to rely on the Securities and Exchange Commission's Order under Section 36 of the Securities Exchange Act of 1934 Modifying Exemptions from the Reporting and Proxy Delivery Requirements for Public Companies dated March 25, 2020 (Release No. 34-88465) (the "Order") to delay the filing of the Report due to circumstances related to the coronavirus disease 2019 ("COVID-19"). The Company's operations and business, as well as those of its independent registered public accounting firm, Grant Thornton LLP ("GT") which had previously notified the Company that its professional staff engaged in the audit of the Company's financial statements and preparation of the accompanying audit report would be working remotely and would no longer be present at the Company's facilities, have experienced disruption due to the unprecedented conditions surrounding the COVID-19 pandemic spreading throughout the United States and the world. The Company's business was abruptly and dramatically impacted by the COVID-19 pandemic as approximately 90% of the Company's primary customers, public and private schools, were shut down which necessitated the Company's focus over the past few weeks to be primarily on executing its contingency plans. In addition, the Company's two primary facilities are located in states which are under stay-at-home orders, resulting in staffing challenges. These disruptions to the process of preparing the Company's financial statements and accompanying audit report as a result of the COVID-19 virus, are causing the Company's Form 10-K for the 2019 fiscal year which is due on March 27, 2020 to be delayed. Consequently, the Company is unable to timely file the Report. Notwithstanding the foregoing, the Company expects to file the Report no later than May 11, 2020, which is 45 days after the original due date of the Report.

Panel B: FAT Brands

FAT Brands Inc. (the "Company") is unable to file its Annual Report on Form 10-K for the year ended December 29, 2019 ("Annual Report") by the original deadline of March 30, 2020 due to the outbreak of, and local, state and federal governmental responses to, the novel coronavirus pandemic ("COVID-19"). The Company's operations have experienced disruptions due to the circumstances surrounding the COVID-19 pandemic including, but not limited to, suggested and mandated social distancing and shelter-in-place orders. The COVID-19-related shelter-in-place orders and resulting office closures have severely limited access to our facilities by our financial reporting and accounting staff and the staff of our auditor and thus impacted our ability to fulfill required audit processes and procedures.

On March 4, 2020 the Securities and Exchange Commission (the "SEC") issued an order (Release No. 34-88318) under Section 36 of the Securities Exchange Act of 1934, as amended (the "Exchange Act") granting exemptions from specified provisions of the Exchange Act and certain rules thereunder, as amended by Release No. 34-88465 issued on March 25, 2020 (collectively, the "Order").

In light of the impact of the factors described above, the Company believes that it will be unable to compile and review certain information required in order to permit the Company to file a timely Annual Report on Form 10-K for its fiscal year ended December 29, 2019 by March 30, 2020, the original filing deadline, without unreasonable effort or expense.

The Company is relying on the Order and is furnishing this Current Report on Form 8-K by the original filing deadline of the Annual Report. The Company expects to file its Annual Report on Form 10-K within the 45-day extension period provided by the Order.

APPENDIX E

Title	Publisher	Field of Research	Rating	ISSN
Abacus	Wiley-Blackwell Publishing	1501	A	0001-3072
Accountancy Business and the Public Interest	Affairs	1501	B	1745-7718
Accounting and Business Research	Taylor & Francis Online	1501	A	0001-4788
Accounting and Finance	John Wiley & Sons, Inc.	1501	A	0810-5391
Accounting and the Public Interest	American Accounting Association	1501	B	1530-9320
Accounting Auditing and Accountability Journal	Emerald Group Publishing Limited	1501	A*	0951-3574
Accounting Education	Taylor & Francis Online	1501	A	0963-9284
Accounting Educators Journal	Academy of Accounting Educators Inc.	1501	B	1041-0392
Accounting Forum	Taylor & Francis Online	1501	B	0155-9982
Accounting Historians Journal	American Accounting Association	1501	B	0148-4184
Accounting History	Sage Publications	1501	A	1032-3732
Accounting History Review	Taylor & Francis Online	1501	B	2155-2851
Accounting Horizons	American Accounting Association	1501	A	0888-7993
Accounting in Europe	Taylor & Francis Online	1501	A	1744-9480
Accounting Perspectives	Wiley-Blackwell Publishing	1501	B	1911-382X
Accounting Research Journal	Emerald Group Publishing	1501	B	1030-9616
Accounting, Economics and Law: A Convivium	De Gruyter	1501	B	2194-6051
Accounting, Organizations and Society	Elsevier	1501	A*	0361-3682
Advances in Accounting	Elsevier	1501	A	0882-6110
Advances in Accounting Behavioral Research	Emerald Group Publishing	1501	A	1475-1488
Advances in Environmental Accounting and Management	Emerald Group Publishing	1501	B	1479-3598
Advances in Management Accounting	Emerald Group Publishing	1501	A	1474-7871
Advances in Taxation	Emerald Group Publishing	180125	B	1058-7497

Title	Publisher	Field of Research	Rating	ISSN
Akron Tax Journal	University of Akron	180125	B	1044-4130
Asian Review of Accounting	Emerald Group Publishing	1501	B	1321-7348
Asia-Pacific Journal of Accounting and Economics	Taylor & Francis Online	1501	B	1608-1625
Auditing: A Journal of Practice and Theory	American Accounting Association	1501	A*	0278-0380
Australasian Accounting Business and Finance Journal	University of Canberra	1501	B	1834-2000
Australian Accounting Review	Wiley-Blackwell Publishing	1501	B	1035-6908
Australian Tax Forum	Tax Institute	180125	A*	0812-695X
Australian Tax Review	Thomson Reuters	180125	A	0311-094X
Behavioral Research in Accounting	American Accounting Association	1501	A	1050-4753
British Accounting Review	Elsevier	1501	A*	0890-8389
British Tax Review	Sweet & Maxwell	180125	A*	0007-1870
Bulletin for International Taxation	International Bureau of Fiscal Documentation	180125	B	1819-5490
Canadian Tax Journal	Canadian Tax Foundation	180125	A*	0008-5111
China Accounting and Finance Review	Hong Kong Polytechnic University	1501	A	1029-807X
China Journal of Accounting Research	Elsevier	1501	B	1755-3091
China Journal of Accounting Studies	Taylor & Francis Online	1501	B	2169-7213Â
ComptabilitÃ©Â ContrÃ´leÂ Audit	Association Francophone de ComptabilitÃ	1501	B	1262-2788
Contemporary Accounting Research	Wiley-Blackwell Publishing	1501	A*	0823-9150
Corporate Ownership and Control	Virtus Interpress	1501	B	1727-9232
Critical Perspectives on Accounting	Elsevier	1501	A	1045-2354
Current Issues in Auditing	American Accounting Association	1501	B	
EC Tax Review	Kluwer Law International	180125	B	0928-2750
eJournal of Tax Research	Australian School of Taxation & Business Law	180125	A	1448-2398

Title	Publisher	Field of Research	Rating	ISSN
European Taxation	International Bureau of Fiscal Documentation	180125	B	0014-3138
Financial Accountability and Management	Wiley-Blackwell Publishing	1501	A	0267-4424
Foundations and Trends in Accounting	Now Publishers	1501	A	1554-0642
Intelligent Systems in Accounting, Finance and Management: An International Journal	Wiley-Blackwell Publishing	1501	B	1055-615X
International Journal of Accounting and Information Management	Emerald Group Publishing Ltd	1501	B	1834-7649
International Journal of Accounting Information Systems	Elsevier	1501	A	1467-0895
International Journal of Auditing	Wiley-Blackwell Publishing	1501	A	1090-6738
International Journal of Disclosure and Governance	Palgrave Macmillan	1501	B	1741-3591
International Journal of Managerial and Financial Accounting	Inderscience Enterprises Ltd.	1501	B	1753-6715
International Tax and Public Finance	Springer International Publishing	180125	B	0927-5940
International VAT Monitor	International Bureau of Fiscal Documentation	180125	B	0925-0832
Issues in Accounting Education	American Accounting Association	1501	A	0739-3172
Journal of Accounting & Organizational Change	Emerald Group Publishing	1501	B	1832-5912
Journal of Accounting and Economics	Elsevier	1501	A*	0165-4101
Journal of Accounting and Public Policy	Elsevier	1501	A	0278-4254
Journal of Accounting Auditing and Finance	Sage Publications	1501	A	0148-558X
Journal of Accounting Education	Elsevier	1501	B	0748-5751

Title	Publisher	Field of Research	Rating	ISSN
Journal of Accounting in Emerging Economies	Emerald Group Publishing	1501	B	2042-1168
Journal of Accounting Literature	Elsevier	1501	A	0737-4607
Journal of Accounting Research	Wiley-Blackwell Publishing	1501	A*	0021-8456
Journal of Applied Accounting Research	Emerald Group Publishing	1501	B	0967-5426
Journal of Australian Taxation	Monash University	180125	B	1440-0405
Journal of Business Finance & Accounting	Wiley-Blackwell Publishing	1501	A*	0306-686X
Journal of Contemporary Accounting and Economics	Elsevier	1501	A	1815-5669
Journal of Corporate Accounting and Finance	Wiley-Blackwell Publishing	1501	B	1044-8136
Journal of Emerging Technologies in Accounting	American Accounting Association	1501	B	1554-1908
Journal of Financial Reporting	American Accounting Association	1501	A	2380-2154
Journal of Forensic & Investigative Accounting	Louisiana State University	1501	B	
Journal of Forensic Accounting Research	American Accounting Association	1501	B	
Journal of Governmental & Nonprofit Accounting	American Accounting Association	1501	B	
Journal of Information Systems	American Accounting Association	1501	A	0888-7985
Journal of Intellectual Capital	Emerald Group Publishing	1501	B	1469-1930
Journal of International Accounting Research	American Accounting Association	1501	A	1542-6297
Journal of International Accounting, Auditing and Taxation	Elsevier	1501	B	1061-9518
Journal of Management Accounting Research	American Accounting Association	1501	A*	1049-2127
Journal of Management Control	Springer International Publishing	1501	A	2191-4761

Title	Publisher	Field of Research	Rating	ISSN
Journal of Public Budgeting, Accounting and Financial Management	Emerald Group Publishing	1501	B	1096-3367
Journal of Tax Administration	University of Exeter Business School	180125	B	2059-190X
Journal of Taxation	Thomson Reuters	180125	B	0022-4863
Journal of the American Taxation Association	American Accounting Association	180125	A	0198-9073
Journal of the Australasian Tax Teachers Association	University of New South Wales	180125	B	1832-911X
Management Accounting Research	Elsevier	1501	A*	1044-5005
Managerial Auditing Journal	Emerald Group Publishing	1501	A	0268-6902
Meditari Accountancy Research	Emerald Group Publishing	1501	A	2049-372X
National Tax Journal	National Tax Association	180125	A	0028-0283
New Zealand Journal of Taxation Law and Policy	Thomson Reuters	180125	A	1322-4417
Pacific Accounting Review	Emerald Group Publishing	1501	B	0114-0582
Qualitative Research in Accounting and Management	Emerald Group Publishing	1501	A	1176-6093
Quarterly Journal of Finance and Accounting	Creighton University	1501	B	0747-5535
Research in Accounting Regulation	Elsevier	1501	B	1052-0457
Research in Governmental and Non-Profit Accounting	Elsevier	1501	B	0884-0741
Research on Professional Responsibility and Ethics in Accounting	Emerald Group Publishing	1501	B	1574-0765
Revenue Law Journal	Bond Faculty of Law Review Editorial Committee	180125	B	1034-7747
Review of Accounting and Finance	Emerald Group Publishing	1501	B	1475-7702
Review of Accounting Studies	Springer International Publishing	1501	A*	1380-6653

Title	Publisher	Field of Research	Rating	ISSN
Social and Environmental Accountability Journal	Taylor & Francis Online	1501	B	0969-160X
Spanish Accounting Review	Elsevier	1501	B	1138-4891
Spanish Journal of Finance and Accounting	Taylor & Francis Online	1501	B	0210-2412
Sustainability Accounting, Management and Policy Journal		1501	B	2040-8021
Tax Law Review	New York University School of Law	180125	A	0040-0041
Tax Specialist	Tax Institute	180125	B	1329-1203
The Accounting Review	American Accounting Association	1501	A*	0001-4826
The European Accounting Review	Taylor & Francis Online	1501	A*	0963-8180
The Florida Tax Review	University of Florida Press	180125	A	1066-3487
The International Journal of Accounting	World Scientific Publishing	1501	A	1094-4060
The International Journal of Digital Accounting Research	Rutgers University	1501	B	1577-8517
The Journal of Theoretical Accounting Research	Iona College, Hagan School of Business	1501	B	1556-5106
The Tax Lawyer	American Bar Association	180125	B	0040-005X
Virginia Tax Review	University of Virginia School of Law	180125	A	0735-9004
World Tax Journal	International Bureau of Fiscal Documentation	180125	B	1878-4917

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VITA

Landi Morris received her B.S. in Accounting from Bentley University in 2011, with a dual degree in the earth, environment, and global sustainability. She earned her Master's in Business Administration (MBA) from Bentley University in 2012. From 2012 to 2017 she worked as a non-profit tax manager at Grant Thornton LLP's Boston office. In the Fall of 2022 Landi will join Northern Arizona University's W.A. Franke College of Business as an Assistant Professor.

Permanent Address: 600 E Kristi Lane Flagstaff, AZ 86005

This manuscript was typed by the author.