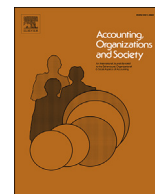




Contents lists available at ScienceDirect

Accounting, Organizations and Society

journal homepage: www.elsevier.com/locate/aos

Audit time pressure and earnings quality: An examination of accelerated filings

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ARTICLE INFO

Article history:

Received 14 January 2014

Received in revised form

1 November 2016

Accepted 20 March 2017

Available online xxx

JEL classification:

M40

M41

M42

M48

Keywords:

Accelerated SEC filings

Audit delay

Earnings quality

Time pressure

ABSTRACT

Using publicly available data from annual reports, we find that SEC rule changes (33-8128 and 33-8644) that impose time pressure on the audits of registered firms have a negative impact on earnings quality, which we interpret as evidence of lower audit quality. Consistent with our predictions, we find that the 10-K accelerations reduced audit quality only when it actually reduced the number of days from year-end to audit report date, and that this effect was more acute for smaller, accelerated filers and during the initial deadline change (relative to the second). We also provide insights into the quality of these audits by conducting a survey of thirty-two retired audit partners. Survey results underscore the challenges time pressure imposes on receiving and evaluating complex valuations (such as for derivatives, pensions, and goodwill) and resolving audit adjustments.

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1. Introduction

Securities and Exchange Commission (SEC) rules 33-8128 and 33-8644 substantially reduced the 10-K filing period for large accelerated filers and accelerated filers by 15 days, from 90 days after fiscal year-end to 60 and 75 days, respectively (SEC 2002, 2005).¹ For many firms and their auditors, such regulation led to

exogenously imposed year-end time pressure to meet the new filing deadlines. This setting provides a natural experiment that we use to provide archival evidence on the effect of time pressure on audit/earnings quality. We also provide rich qualitative information related to the pressure audit firms experienced during the acceleration periods, areas in which time pressure resulted in audit difficulties, the ways in which audit firms attempted to alleviate the pressure, and the resulting quality of accelerated audits. The combination of our archival and qualitative data allows us to further explore the impact of regulatory-induced pressure on audit firms and contribute to an emerging stream of literature that explores the impact of controversial regulatory changes on the quality of information supplied to financial statement users.

Experimental and survey research has shown that increasing audit time pressure may limit the extent to which auditors employ a questioning mind and critically evaluate evidence (e.g., McDaniel, 1990; Otley & Pierce, 1996; Willett & Page, 1996; Asare, Trompeter, & Wright, 2000; Braun, 2000; Coram, Ng, & Woodliff, 2004; Nelson, 2009; PCAOB, 2012). Archival evidence illustrates that fewer audit hours, in general, are associated with lower quality earnings (Caramanis & Lennox, 2008). Our setting is one in which we know the extent and source of time pressure and allows us to contribute

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¹ According to rule 33-8128 (SEC 2002), an accelerated filer (AF) is a firm that meets the following conditions at the end of its fiscal year: 1) Its common equity public float (the part of equity not held by management or large shareholders) was \$75M or more as of the last business day of its most recently completed second fiscal quarter; 2) The company has been subject to the reporting requirements of Section 13(a) or 15(d) of the Exchange Act for a period of at least 12 calendar months; 3) The company has previously filed at least one annual report pursuant to Section 13(a) or 15(d) of the Exchange Act; and 4) The company is not eligible to use Forms 10-KSB and 10-QSB. A large accelerated filer (LAF) is defined as an AF with a worldwide market value of outstanding voting and non-voting common equity held by non-affiliates of \$700M or more (SEC 2005). A non-accelerated filer (NAF) is a firm that does not meet the definition of an AF.

archival results to complement and triangulate existing experimental/survey research exploring the effect of time pressure on audit quality.

We extend prior studies which make use of this setting (e.g., Bryant-Kutcher, Peng, & Weber, 2013; Doyle & Magilke, 2013; Impink, Lubberink, van Praag, & Veenman, 2011; Krishnan & Yang, 2009) by examining whether it is the extent of time pressure placed on the audits that is associated with lower earnings quality. We also identify conditions under which firms that were seemingly affected by the acceleration did *not* experience a reduction in earnings equality (i.e., firms that needed to file earlier, but did not need to reduce audit delay to do so). Our analyses enable us to more definitively describe the effects of the SEC 10-K accelerations and to identify the conditions under which such accelerations *do not* impair the quality of earnings. This allows us to speak to how *future* accelerations and/or other regulatory activity may impact financial reporting quality based on the extent to which they would place time pressure on contemporary audits. Thus, this research should assist U.S. and international regulatory organizations considering future accelerations of financial reports.

In our study, we first describe how exogenously-induced increases in time pressure may substantially impact the audit approach and limit year-end testing of account balances and transactions. We use audit delay, defined as the length of time from a company's fiscal year-end to the date of the auditor's report (Ashton, Willingham, & Elliott, 1987), to develop a continuous measure of audit time pressure and to group firms based on the extent to which they were most affected by the deadline change. We categorize firms as: already filing before the new deadline (i.e., unaffected by the accelerations) (Group A); needing to file the 10-K earlier, but not required to reduce audit delay to do so (Group B); or, those for which complying with the SEC accelerations of 10-K filings required a reduction in audit delay (Group C). Time pressure is determined by (1) the extent to which it was necessary to reduce the audit delay to meet the new deadline (calculated as the prior year audit delay minus the current year deadline in days) and (2) whether a firm is classified as being in Group C.

Greater time pressure at year-end increases the likelihood that auditors are faced with a choice between having their clients miss the filing deadline because they are unable to obtain sufficient appropriate evidence by the 10-K filing deadline or performing a rushed, lower quality audit. We use working capital accruals to proxy for audit/earnings quality (Dechow & Dichev, 2002) and find no evidence that the deadline reductions negatively affected the earnings quality of Group A and B firms. In short, if 10-K accelerations do not put time pressure on the audit, earnings quality is not significantly affected. Conversely, we *do* demonstrate that both the extent of time pressure faced by auditors to meet the accelerated 10-K deadlines, and the audits of Group C firms in general, are associated with lower earnings quality. We also find that both of our time pressure measures are positively associated with the likelihood that the audit is not complete by the accelerated deadline (i.e., the firm files their 10-K with the SEC late). We next explore whether time pressure differentially affected accelerated filers vs. large accelerated filers, as well as the earnings quality of firms during the first (75 day deadline) vs. second deadline change (60 day deadline). Our evidence suggests that audit time pressure has a more negative effect on the earnings quality of accelerated filers (relative to large accelerated filers), and for the initial deadline change (relative to the second), during the 10-K acceleration periods.

We then conduct a survey of audit partners that asked them to provide both qualitative and quantitative data related to one specific 10-K acceleration of a client they served. Providing support for

our time pressure proxies, we find participants felt a fair amount of time pressure on these audits and that the pressure they felt was significantly associated with the number of days by which the audit report was accelerated. Consistent with our archival analysis, the vast majority of partners indicated that the audits of large accelerated filers were better equipped to handle the time pressure caused by the accelerations. Providing insight into why (or, via what avenue) time pressure negatively affected earnings quality, we find audit time pressure is positively associated with the level of difficulty associated with resolving audit adjustments. With respect to identifying "best practices" for ameliorating the effects of time pressure, partners indicate that working more hours, performing more interim testing, and rescheduling the audits of non-public companies were the most effective strategies. On the other hand, increasing the use of computer assisted audit techniques on the audit was not deemed to be an effective strategy. Finally, an exploratory analysis of our survey responses suggests that, for 10-K accelerations, interim testing and the percentage of partner time spent at the client are positively associated with the effectiveness of audit procedures, reducing the difficulty associated with resolving year-end audit adjustments, and overall audit and financial reporting quality.

Overall, the combination of our archival and survey-based evidence should inform deliberations by U.S. and non-U.S. regulatory bodies considering future filing accelerations.² Regulators should be acutely aware of the extent to which such accelerations may impact the amount of time pressure placed on the financial statement audit. Our aforementioned results related to accelerated filers suggest that caution should be taken before considering a further reduction for smaller firms (e.g., from 75 to 60 days) or expanding accelerations to even smaller, non-accelerated filers (who currently still face a 90-day filing deadline). If such accelerations are undertaken in the future, audit firms can strive to increase the extent to which the best practices we identify can be implemented on a particular audit. In sum, our study will inform audit teams charged with handling any future events or regulatory acts that place greater year-end time pressure on the audit team. For example, the majority of our survey respondents indicated that the recently proposed PCAOB standard in relation to expanding the content of the audit report would induce additional year-end time pressure on the auditor and potentially impair audit quality.

The remainder of the paper is organized as follows. Section 2 provides background and develops our hypothesis and research question. Sections 3 and 4 describe our archival and survey analyses, respectively. Section 5 provides our conclusion.

2. Background and theoretical development

2.1. SEC regulation

Shortly after the passage of the Sarbanes-Oxley Act (SOX), the

² For example, the European Commission has been contemplating a reduction in audit delay to improve the timeliness of communications between auditors and stakeholders (see question number 11 in the European Commission Green Paper, Audit Policy: Lessons from the Crisis (available at: http://ec.europa.eu/internal_market/consultations/docs/2010/audit/green_paper_audit_en.pdf). In Canada, the filing deadline for publicly traded companies was reduced from 140 to 90 days in 2004. Over time, Canada may consider emulating the current 10-K filing deadlines imposed by the SEC. Also, our results can inform SEC deliberations related to foreign filers. Foreign issuers recently experienced a reduction in their filing deadline from 6 months to 4 months. It seems logical that the SEC might consider a further reduction to this deadline (i.e., to 90 days, as originally proposed), and the current accelerated deadline applies to all foreign issuers regardless of size. Our findings suggest that separating foreign issuers into different filing groups might be appropriate.

For Fiscal Year on or After	Proposed Deadline ^a	As Enacted	
December 15, 2002	90 days	90 days	
December 15, 2003	75 days	75 days	
December 15, 2004	60 days	75 days ^b	
December 15, 2005	60 days	75 days	
December 15, 2006	60 days	75 days – AFs ^c	60 days – LAFs ^d

Fig. 1. Proposed and Enacted Changes to the 10-K Filing Deadline for Accelerated Filers*.

* According to rule 33-8128 (SEC 2002), an accelerated filer (AF) is one that meets the following conditions at the end of its fiscal year: 1) Its common equity public float was \$75M or more as of the last business day of its most recently completed second fiscal quarter; 2) The company has been subject to the reporting requirements of Section 13(a) or 15(d) of the Exchange Act for a period of at least 12 calendar months; 3) The company has previously filed at least one annual report pursuant to Section 13(a) or 15(d) of the Exchange Act; and 4) the company is not eligible to use Forms 10-KSB and 10-QSB.

^a Rule 33-8128, *Acceleration of Periodic Report Filing Dates and Disclosure Concerning Website Access to Reports* (SEC 2002).

^b Rule 33-8507, *Temporary Postponement of the Final Phase-In Period for Acceleration of Periodic Filing Dates* (SEC 2004).

^c Rule 33-8644, *Revisions to Accelerated Deadlines for Filing Periodic Reports* (SEC 2005).

^d Rule 33-8644 created a new filer category called the Large Accelerated Filer (LAF), which is an accelerated filer with a worldwide market value of outstanding voting and non-voting common equity by non-affiliates of \$700M or more (SEC 2005).

SEC issued rule 33-8128, *Acceleration of Periodic Report Filing Dates and Disclosure Concerning Website Access to Reports* (SEC 2002). This rule was intended to substantially shorten the Form 10-K filing deadline from 90 to 60 days, over a two-year period, for all firms with outstanding common equity by non-affiliates of \$75M or more. At that time, all firms subject to the deadline change were known as “accelerated filers”. The deadline went from 90 days to 75 days on December 15, 2003 with a further reduction to 60 days scheduled for December 15, 2004 (which was later postponed). The objective of the deadline reduction was to provide investors with more timely, relevant information (SEC 2002).

The acceleration of filings has been a controversial and heated topic of discussion. The SEC received 302 comment letters on the proposal to accelerate the deadlines; 20 supported the acceleration and 282 opposed it.³ Based on negative public reaction and concerns expressed by filers and auditors over whether they would be able to file reports on a timely basis, the SEC adopted rule 33-8507 in November of 2004. This rule postponed the final phase-in date of the 60-day filing deadline to fiscal year-ends on or after December 15, 2005 (SEC 2004).

The SEC passed rule 33-8644 in December of 2005 (SEC 2005). This rule created two categories of firms subject to the filing deadline change. A large accelerated filer (LAF) is a firm with a worldwide market value of outstanding common equity held by non-affiliates of \$700M or more. LAFs became subject to a reduced 60-day deadline after December 15, 2006. Accelerated filers (AFs), firms with outstanding common equity held by non-affiliates of between \$75M and \$700M, remained subject to a 75-day deadline. Non-accelerated filers (NAFs), firms with outstanding common equity by non-affiliates of less than \$75M, continued to be subject to the original 90-day deadline. Fig. 1 illustrates the proposed changes to the 10-K filing deadline and the changes that were ultimately enacted.

2.2. Existing research related to SEC rules 33-8128 and 33-8644

In an early examination of the SEC’s decision to accelerate filings, Krishnan and Yang (2009) find no association between levels of audit delay and earnings quality around the first deadline change. However, Krishnan and Yang (2009) do not examine the time pressure faced by particular audits. Impink et al. (2011) conclude the accelerated deadlines in 2003 and 2006 are not associated with an overall increased occurrence of late filings. They also observe that firms with effective internal controls typically met

the filing deadlines, while approximately half of the firms with internal control weaknesses filed late.

Two more recent studies directly consider the impact of accelerated filings on financial reporting quality. Bryant-Kutcher et al. (2013) find evidence of an increase in restatements for accelerated filers (vs. firms that did not need to file their 10-K earlier to meet the new deadlines). Doyle and Magilke (2013) focus on the overall usefulness of 10-K filings by measuring the absolute value of the three-day market reaction to the 10-K filing. They also compare the reporting quality of firms that were required to file earlier to meet the new deadlines to firms who were already filing before the accelerated deadlines. Doyle and Magilke (2013) illustrate that AFs and LAFs that were required to accelerate 10-K filings for the first deadline change experienced significant decreases in reporting quality. On the other hand, they find that the reporting quality of LAFs actually increased in the second deadline period.

Our study extends prior research in relation to SEC 10-K accelerations and audit time pressure in several important ways. First, we discuss and identify a mechanism through which earnings quality might suffer during mandated accelerations (i.e., via increased time pressure on the audit). To provide context to this discussion (described in Section 4), we also incorporate qualitative data (i.e., quotes) obtained from a survey of audit partners that experienced 10-K accelerations. Second, we empirically examine whether mandated filing accelerations that did not require a reduction in observed audit delay affected earnings quality. As noted above, prior research has not considered the actual effect on audit delay/time pressure when identifying firms ‘affected’ by the mandate. Third, we concentrate on firms that were most likely affected by the SEC’s deadline changes and examine whether the extent of audit time pressure affects the quality of audited earnings, as well as the ability to file the 10-K on time. By doing so, we contribute archival evidence to triangulate experimental and survey research related to audit time pressure.

Fourth, by isolating the mechanism by which accelerations affect earnings quality, we examine the implications of further filing accelerations, as well as reductions in the 10-K filing window for non-accelerated filers. These results should inform future deliberations by regulatory bodies considering accelerations of financial reporting, as well as other future regulatory acts that may place additional year-end time pressure on audits. Last, we use our survey data to identify best practices with respect to strategies that were employed to maintain audit quality during the years of acceleration. We therefore provide practical guidance to audit firms concerned with alleviating year-end time pressure on their audits.

³ http://www.sec.gov/rules/extra/33-8089summary.htm#P107_2938.

2.3. Audit delay, time pressure, and earnings quality

The audit report date (i.e., the audit sign-off date) is the date by which the auditors have gathered sufficient and appropriate evidence to conclude fieldwork and issue an audit opinion on a company's financial statements (Arens, Elder, & Beasley, 2010). Audit delay (or audit report lag) is defined as the length of time from a company's fiscal year-end to the date of the auditor's report (Ashton et al., 1987). At some point *after* the audit report date, the client files the audited 10-K with the SEC; this date is termed the filing date. It is important to note that the financial statements are finalized by the audit report date (not the filing date). While previous research has identified important *determinants* of audit delay (e.g., Whitworth & Lambert, 2014), we focus on the *consequences* of regulatory-induced changes to audit delay.

Mandated reductions in audit delay put time pressure on audits, particularly at year-end when there are a finite number of days to complete the audit. Recent survey research identifies time pressure as an impediment to audit quality. One partner interviewed by Christensen, Glover, Omer, and Shelley (20, 2015) states “[when I speak of time pressure as an impediment to audit quality], I'm talking about the findings or the need for information that comes right at the end ... and there's a lot of pressure from management, and with some clients from the audit committee, in my opinion, to go ahead and sign the audit opinion without getting that evidence.” Experimental research has established that increasing time pressure can have a detrimental effect on audit effectiveness and lead to dysfunctional auditor behavior (e.g., accepting doubtful evidence, truncating sample selections) (Coram et al., 2004; DeZoort & Lord, 1997; McDaniel, 1990).

Negotiations between auditors and clients related to audit adjustments occur frequently toward the end of an audit and are a crucial link between the quality of the audit and the quality of the financial statements (Salterio, 2012). Reducing audit delay may curtail the window within which the auditor can effectively negotiate the outcome of sensitive or contentious accounting issues (Salterio, 2012). For example, Braun (2000) concludes that time pressure's earliest effects are manifested through the filtering out of cues related to the qualitative aspects of misstatements. Also, Bennett, Hatfield, and Stefaniak (2014) show that auditors' pre-negotiation judgments are more concessionary in the presence of deadline pressure. Specifically, auditors react to end-of-engagement deadline pressure by conceding more on their initial negotiation positions. Because the listing of necessary audit-related adjustments to the financial statements is not finalized until year-end, the audit team has less time to fully evaluate the qualitative and quantitative aspects of misstatements and other accounting matters with accelerated 10-K deadlines.

Auditors often require considerable time after year-end (and substantial post-fiscal year-end evidence) to examine client estimations (e.g., the reserve for obsolete inventory, income tax provision, fair value of complex financial instruments). The recent trend from historical cost to fair value accounting makes the year-end analysis of client estimates even more crucial and requires more time to verify the estimates at or after year-end. Likewise, exercising appropriate levels of professional skepticism often requires additional work/time to obtain sufficient and appropriate evidence (Nelson, 2009; PCAOB 2012). More time pressure on the audit team, induced by the need to meet shorter 10-K filing deadlines, may limit the extent to which auditors employ a questioning mind and critically evaluate evidence. Indeed, PCAOB inspections of audits during 10-K accelerations noted a failure to apply an appropriate level of skepticism when conducting tests and evaluating results (PCAOB 2008). Last, with more audit procedures compressed into a shorter window, the resulting effect is the audit

team working even longer hours per day than usual. With greater time pressure, one might expect some negative effects on engagement team morale and effort levels.⁴

In sum, the SEC has twice reduced 10-K filing deadlines by 15 days and prior research suggests that greater time pressure on the auditor to meet these accelerated filing deadlines will impair audit quality and adversely affect the quality of earnings. Formally, we hypothesize:

H1. Greater audit time pressure to meet accelerated filing deadlines will lead to lower earnings quality.

2.4. Filer type and deadline change

The SEC's decision to have three distinct groups of filers (LAFs, AFs, and NAFs) and three separate reporting deadlines (60 days, 75 days, and 90 days, respectively) was controversial. Some companies (e.g., Comcast Corporation) expressed that all public companies should be required to adhere to the same deadline. Others, including the AFL-CIO and KPMG LLP, agreed with the notion of excluding smaller companies because they may not have the necessary resources or infrastructure to meet the accelerated deadline (SEC 2002). We shed additional light on this issue by examining if the relation between regulatory-induced time pressure and earnings quality differs by filer type (AFs vs. LAFs) and deadline change.

The American Bar Association (ABA) argued that “large businesses tend to be more complex, often with international operations, multiple divisions and subsidiaries and investments from other entities from which they often must await reports.”⁵ Based on this argument, the quality of LAF audits may experience a stronger negative impact from exogenously imposed time pressure. On the other hand, Pizzini, Lin, Vargas, and Ziegenfuss (2012) provide evidence that the audits of LAFs use the companies' internal audit functions to reduce audit delay. In addition, the audits of larger companies probably already employ more extensive interim testing as Bamber, Bamber, and Schoderbek (1993) observe that larger firms exhibit shorter audit delays. For LAFs that *did* employ substantial year-end testing prior to accelerations, Brazel, Carpenter, and Jenkins (2010) find a positive relation between client size and the degree to which auditors change the staffing and timing of testing. In other words, because auditors of LAFs tend to be present at the client throughout the year, it may be (relatively) easier to shift testing from year-end to interim to meet filing deadlines and still maintain a similar level of audit quality. LAF clients also tend to be more prestigious and these audits typically have a greater ability to procure higher quantities of competent audit staff (if available). Thus, LAFs may be less likely to suffer a reduction in audit/earnings quality due to accelerations.

AFs are smaller, less prestigious, and likely have a larger portion of their audit work performed after year-end than LAFs (Bamber et al., 1993). As such, the audit approaches for AFs were likely heavily affected by an acceleration. However, AFs were *not* subject to the second deadline change from 75 days to 60 days. LAFs, on the other hand, were subject to *both* the first and the second deadline

⁴ Of course, auditors may be able to mitigate the increased time pressure resulting from accelerations by performing more interim procedures, relying more on the client's internal control systems and internal audit function, and using advanced audit technology (cf., PCAOB 2007, 2010; Brazel & Agoglia, 2007; Pizzini et al., 2012). Thus, there are strategies available to the auditor that may reduce the extent to which post-fiscal year-end audit procedures/evidence are needed to provide an acceptable level of audit quality. We investigate these and other possibilities in Section 4 of this study.

⁵ <http://www.sec.gov/rules/proposed/s70802/skeller1.htm>.

State of filing one year before mandatory reduction in filing deadline goes into effect (i.e. 2002-03 or 2005-06)	10-K filed this year on or before next year's new mandated number of days (i.e., 75 or 60 days)	10-K filed this year after the next year's new mandated number of days (i.e., 75 or 60 days)
Audit report delay this year less than mandated number of days to file 10-K for next year's mandate	Group A	Group B
Audit report delay this year greater than mandated number of days to file 10-K for next year's mandate	N/A	Group C*

Fig. 2. Matrix of 10-K Filing Status and Audit Report Delay.

* The focus of this paper is on firms in Group C. These firms had audit delays in the prior year that were greater than next year's deadline. Thus, the auditors of these firms experienced regulatory-induced time pressure as they were forced to reduce their audit delay in order to file on time in the next year. The audits of firms in Group A were likely unaffected by the deadline change since their audit delay and file delay in the prior year met the next year's deadline. The audits of firms in Group B may have been affected by the deadline change depending on how close their prior year audit delay was to the next year's deadline. We address the time pressures, changes in audit delay, and earnings quality experienced by all three groups in Section 3.2 of this study.

changes. The second acceleration of 15 days was proportionally larger (i.e., a 20% decrease) than the first acceleration (i.e., a 17% decrease). More importantly, any slack in the reporting processes for LAFs would have been absorbed in the first deadline change. Thus, it is possible that the audit/earnings quality of LAFs was more impaired during the second acceleration. In sum, the extent to which pressure is associated with lower earnings quality may differ by filer type and deadline. We therefore examine the following research question:

RQ. Does the association between audit time pressure and earnings quality differ by filer type and deadline change?

3. Archival analysis

3.1. Method

3.1.1. Sample

We derive our sample from the years that the two 10-K filing reductions took effect. The first deadline change took effect for LAFs and AFs with fiscal years ending after December 15, 2003. The second deadline change took effect for all LAFs with fiscal years ending after December 15, 2006. Thus, pressure-induced reductions in audit delay occurred during fiscal year-ends from December 15, 2003 through December 14, 2004 and from December 15, 2006 through December 14, 2007. To identify firms whose audit report lags were required to be reduced by one of the deadline changes, we organize accelerated filers into three groups as shown in Fig. 2. Firms in Group A filed their prior year 10-K in time to meet the subsequent year's deadline. The audits of these firms are not likely affected by the deadline change. There is no time pressure on the audit due to accelerations, as the prior year audit was completed and the 10-K was filed prior to the upcoming deadline. Firms in Group B had their prior year audit completed before the subsequent year's accelerated deadline (based on the prior year's audit report date), but did not file their prior year 10-K within the time frame specified by the new deadline. The audits of these firms may be affected by the deadline reduction if they have to accelerate the audit sign-off in order to meet the following year's 10-K filing deadline. Still, it is likely that many Group B firms did not experience a mandated reduction in audit delay.

Firms in Group C did *not* complete their prior year audit in time to meet the subsequent year's accelerated filing deadline. These firms experienced time pressure from the deadline reductions because they had to accelerate the sign-off date of their audit (from the previous year) in order to meet the new filing deadline. In short,

the audits of firms in Group C were most likely affected by the regulation.⁶

Audit Analytics is our source for audit delay data that is used to measure the amount of regulatory-induced time pressure experienced on the audit. *Compustat* is our source for financial data. Combining the samples provides 18,200 firm-year observations. We then exclude financial institutions and regulated industries because of their unique nature of accounting for accruals (Frankel, Johnson, & Nelson, 2002; Tucker & Zarowin, 2006), firms that were not subject to the first filing deadline change (NAFs), and firms that were not subject to the second deadline reduction (NAFs and AFs). We remove observations with missing audit report dates, missing control variables, and those lacking the data necessary to calculate accruals (our measure of earnings quality). Finally, we delete foreign issuers, firms that filed late in the prior year, and firms filing for the first time (i.e., filing an S-1). As shown in Table 1, Group C consists of 737 firm-year observations (265 from the first filing deadline change and 472 from the second deadline change). The 737 firm-year observations represent 698 unique firms.⁷

3.1.2. Models for archival analysis

We test H1 by examining the amount of time pressure on audit engagements during the time period of the accelerations. We measure PRESSURE by taking prior year audit delay minus the length of time available to file the 10-K with the new deadlines (i.e., 75 days for the first deadline change and 60 days for the second deadline change). Audit delay is defined as the audit report date less the fiscal year-end date (Ashton et al., 1987). For example, if an auditor, in the year prior to the first deadline change, had an audit sign-off date 85 days after year-end, then PRESSURE would be equal to 10. At a minimum, this auditor will need to reduce the audit delay by 10 days in the current year in order for the 10-K to be filed within 75 days after fiscal year-end.

To test our hypothesis and research question, we focus on PRESSURE in the years of the deadline change because this setting provides a natural experiment to examine pressure-induced reductions in audit delay imposed from an exogenous source. By examining these reductions during the year of the filing deadline changes, we do not need to disentangle the reason for the reduction in audit delay and our analyses speak directly to the criticism of the

⁶ We acknowledge that, for some Group C firms, reducing slack or inefficiencies in the audit process may have been methods used to meet the upcoming deadline. The extent that Group C firms fit this description biases against H1.

⁷ Thirty-nine LAFs fell into Group C during both filing deadline changes and are included in our sample twice.

Table 1
Sample selection.

	1st Deadline Reduction ^a	2nd Deadline Reduction ^b	Total
Net Observations after Combining Compustat & Audit Analytics	9,481	8,719	18,200
Financial Institutions (6000-6999) & Regulated Utilities (4900-4999)	-3,025	-2,862	-5,887
NAFs (and AFs with regard to the 2nd Deadline Reduction)	-2,920	-4,709	-7,629
Missing PY or CY Audit Report Date or File Report Date	-334	-21	-355
Missing Control Variables	-409	-103	-512
Missing Information to Calculate Discretionary Accruals	-136	-59	-195
Filed Late in Prior Year, Foreign Issuers and S-1's	-520	-80	-600
	2,137	885	3,022
Group A (i.e., PY File Delay < New Filing Deadline)	558	214	772 ^c
Group B (i.e., PY Audit Delay < New Filing Deadline)	1,314	199	1,513 ^c
Group C (i.e., PY Audit Delay > New Filing Deadline)	265	472	737 ^c
	2,137	885	3,022

^a First filing deadline reduction from 90 days to 75 days for all accelerated filers (all firms with outstanding common equity by non-affiliates greater than \$75M). Deadline change affected fiscal year-ends from December 15, 2003–December 14, 2004.

^b Second filing deadline reduction from 75 days to 60 days for all Large Accelerated Filers (firms with outstanding common equity by non-affiliates greater than \$700M). The deadline change affected fiscal year-ends from December 15, 2006–December 14, 2007.

^c Amount represents firm-year observations. Group A had 662 unique firms, Group B had 1406 unique firms, and Group C had 698 unique firms.

filing deadline change creating unwanted (i.e., harmful) time pressure on the audit. We use a continuous measure across all groups by allowing some firms (i.e., those in Groups A and B) to have negative audit time pressure (i.e., they had extra slack because their year-end audit work was completed earlier). We additionally focus on firms in each Group (i.e., A, B, and C). We expect firms in Group C (i.e. the firms with positive PRESSURE) will be the most adversely affected in relation to earnings quality. We create an indicator variable for each group (i.e., GROUP A, GROUP B, and GROUP C) set equal to one if the firm is in the corresponding group and zero otherwise. As our first test of H1, we estimate the following regression model⁸:

$$\text{AbsChWCACC}_t \text{ (or LATE_FILER}_t) = \beta_0 + \beta_1 \text{PRESSURE}_t \text{ (or } \beta_1 \text{GROUP B} + \beta_2 \text{GROUP C)} + \beta_3 \text{ChSEASON}_t + \beta_4 \text{ChLOSS}_t + \beta_5 \text{ChCFO}_t + \beta_6 \text{ChB/M}_t + \beta_7 \text{ChLgMVE}_t + \beta_8 \text{ChLEVERAGE}_t + \beta_9 \text{ChFINANCE}_t + \beta_{10} \text{ChDISTRESS}_t + \beta_{11} \text{ChGROWTH}_t + \beta_{12} \text{ChRESTRUCTURE}_t + \beta_{13} \text{ChEXTRAORDINARY}_t + \beta_{14} \text{ChACQUISITION}_t + \beta_{15} \text{ChQUALIFIED}_t + \beta_{16} \text{ChGOING_CONCERN}_t + \beta_{17} \text{ChAUDITOR}_t + \beta_{18} \text{ChLEADER}_t + \beta_{19} \text{ChLgAUDIT_FEES}_t + \beta_{20} \text{Year} + \beta_{21-33} \text{Industry} + \varepsilon \quad (1)$$

Because our theory suggests the 10-K acceleration will induce a *change* in audit delay or time pressure on some audits, we employ a “changes” model above.⁹ H1 is supported if the coefficient on PRESSURE and/or GROUP C is positive and significant. We test our RQ by incorporating two indicator variables into Model (1). The first is set equal to one if the firm is an AF and zero for an LAF (ACCEL_FILER). We also interact ACCEL_FILER with

⁸ Consistent with Peterson (2009), we control for standard error bias due to repeated measures of firm and year by including year dummies in the regression and performing a cluster regression with a firm identifier as a repeated measure (SAS procedure proc surveyreg with a gvkey cluster). When the dependent variable is LATE_FILER, the model is a logistic regression modeling the probability of being a late filer. LATE_FILER equals 1 if the company filed after the filing deadline and 0 if the company filed on time.

⁹ See Appendix A in the Online Appendix for robustness checks employing alternative model specifications which (a) utilize a “levels” model, (b) consider the extent to which PRESSURE (versus less audit-related variables examined by prior research) drives our results, (c) examine an alternative dependent variable as a measure of earnings quality, and (d) include both PRESSURE and GROUP C in the same regression.

PRESSURE, GROUP B, and GROUP C. If the coefficient on ACCEL_FILER is significant, then the dependent variable (LATE_FILER or AbsChWCACC) is significantly affected if the firm is an AF relative to an LAF (i.e., an increase in the intercept for being an AF). If an interaction is significant (e.g., PRESSURE*ACCEL_FILER or GROUP C*ACCEL_FILER), then the relation between the dependent variable and PRESSURE or GROUP C is different for AFs relative to LAFs. The second indicator (SECOND) is set equal to one if the firm year observation falls during the second deadline change and zero if it falls in the first deadline change. As above, we also interact SECOND with PRESSURE, GROUP B and GROUP C.

Our primary dependent variable measures the change in the quality of earnings disseminated to external users during 10-K accelerations. We employ Dechow and Dichev's (2002) measure of working capital accruals to measure earnings quality. We estimate Model (2) cross-sectionally and use the residual (WCACC) from Model (2) as a measure of accrual quality:

$$\Delta \text{WC}_{it} = \beta_0 + \beta_1 \text{CFO}_{it-1} + \beta_2 \text{CFO}_{it} + \beta_3 \text{CFO}_{it+1} + \varepsilon_{it} \quad (2)$$

where ΔWC is the change in working capital from year $t-1$ to year t .¹⁰ Our variable of interest is the absolute value of the change (AbsChWCACC) in the residual (WCACC) from year $t-1$ to year t

¹⁰ ΔWC is computed as $\Delta \text{Accounts Receivable} + \Delta \text{Inventory} - \Delta \text{Accounts Payable} - \Delta \text{Taxes Payable} + \Delta \text{Other Assets}$. More specifically, ΔWC is computed from Compustat items as $\Delta \text{WC} = -(\text{RECCH} + \text{INVCH} + \text{APALCH} + \text{TXACH} + \text{AOLOCH})$. All variables in Model (2) are scaled by average total assets. Dechow and Dichev (2002) require at least eight years of data to estimate Model (2). We do not have eight years of data for all of the firms in our sample. Therefore, consistent with Jones, Krishnan, and Melendrez (2008), we estimate Model (2) cross-sectionally and use the residual from Model (2) as a measure of accrual quality.

under the assumption that earnings that are managed from otherwise neutral earnings in either direction meet the definition of poor earnings quality.

Our secondary dependent variable examines the case where substantial time pressure at year-end may inhibit the ability of the auditor to obtain sufficient and appropriate evidence to provide an opinion before the accelerated deadline. When the SEC proposed accelerating 10-K deadlines, comments on the proposal noted that audit firms currently did not have enough slack in their audit and reporting timeline to meet the new deadline change (SEC 2002). As discussed in our development of H1, substantial time pressure at year-end may inhibit the ability of the auditor to obtain sufficient and appropriate evidence to provide an opinion before the accelerated deadline. Under these conditions, auditors may be faced with a choice between having their clients miss the filing deadline or performing a rushed, lower quality audit. Thus, in conjunction with studying earnings quality, we consider whether time pressure affects the likelihood that the firm files its 10-K after the accelerated deadline (LATE_FILER). We expect the greater time pressure induced by 10-K accelerations will increase the likelihood that the audit is not complete at the deadline and the firm files its 10-K late with the SEC (LATE_FILER). LATE_FILER is set equal to one if the firm filed late and zero otherwise.

As previously noted, PRESSURE measures the extent to which audit delay, at a minimum, must be reduced/changed to meet the new filing deadline and we examine changes in earnings quality. As such, we use *change* measures for all control variables (with the exception of our year and industry indicator variables). Consistent with prior research (Knechel & Payne, 2001; López & Peters, 2012), we include an indicator variable (ChSEASON) to classify changes in audits of companies from busy season year-ends (i.e., fiscal year-ends during the months of December and January) to non-busy season year-ends (or vice versa). We include an indicator variable as to whether or not the firm switched from a loss (ChLOSS) in the prior year to a profit (or vice versa) because firms are expected to manipulate accruals in a systematically different way during loss years (Frankel et al., 2002; López & Peters, 2012). Because discretionary accrual models do not completely extract nondiscretionary accruals correlated with firm performance (Frankel et al., 2002), we include change in cash flow from operations (ChCFO) (e.g., DeFond & Subramanyam, 1998). We control for growth opportunities using the change in the ratio of book-to-market value (ChB/M) (e.g., Frankel et al., 2002); size using change in the natural log of the market value of equity (ChLgMVE) (Frankel et al., 2002; Kothari, Leone, & Wasley, 2005); and change in leverage (ChLEVERAGE) using the change in the ratio of total liabilities to total assets (Frankel et al., 2002).

We control for changes in the company's financing (ChFINANCE) due to concerns over the effect changes in the firm's capital structure might have on working capital accruals (Ashbaugh, LaFond, & Mayhew, 2003). ChFINANCE is equal to one if the number of outstanding shares increased by at least 10% or long-term debt increased by at least 20% during the current year, but not the prior year (or vice versa), and zero otherwise. We use Zmijewski's (1984) measure of financial distress (a weighted probit bankruptcy prediction model) to control for financial condition due to concerns that discretionary accrual models overestimate accruals for poorly performing companies (Dechow, Sloan, & Sweeney, 1995; Kothari et al., 2005). ChDISTRESS equals the change in financial distress from the prior year to the current year. We control for changes in firm growth (ChGROWTH) by taking the change in sales growth rate from the prior year to the current year. Prior research finds that growth is positively associated with discretionary accruals (Menon & Williams, 2004). Following Carver, Hollingsworth, and Stanley (2011), we control for ChRESTRUCTURE,

which is coded as a 1 if the firm reported restructuring charges in either the current or prior year (but not both) and zero otherwise.

We also control for variables that the prior literature has found to impact audit delay (e.g., Bamber et al., 1993; Schwartz & Soo, 1996). ChEXTRAORDINARY equals one if the company reported an extraordinary item in the prior year and not the current year (or vice versa), and zero otherwise. ChACQUISITION equals one if the company made an acquisition in the prior year and not the current year (or vice versa), and zero otherwise. ChQUALIFIED equals one if the company's audit opinion had an explanatory paragraph (other than going concern) in the prior year and not the current year (or vice versa), and zero otherwise. ChGOING_CONCERN is coded as one if the audit report disclosed doubt about the entity's ability to continue as a going concern in either the current or prior year (but not both), and zero otherwise. ChAUDITOR is equal to one for any switch in auditor during the year, and zero otherwise. ChLEADER equals one if the company was audited by a national industry leader in the prior year and not the current year (or vice versa), and zero otherwise.

ChLgAUDIT_FEES is the natural log of the change in audit fees. It reasons that if auditors are facing increased time pressure, they would likely increase staff or increase fees to compensate for higher engagement risk. Change in audit fees controls for increases in audit firm effort or perceived audit risk. Finally, we include an indicator variable to control for the year, and following Ashbaugh et al. (2003), we include thirteen indicator variables to control for industry.¹¹

3.2. Results

3.2.1. Descriptive statistics

Table 2 provides descriptive statistics for our variables of interest and other, related variables for our sample. Panels A, B, and C provide descriptive statistics for Groups A, B, and C, respectively (Fig. 2 defines Groups A, B, and C).¹² The absolute value of the change in working capital accruals (AbsChWCACC) is highest for both Group B and C firms (approximately 0.05 for both groups). Accruals are lower (0.04), as expected, for Group A firms (firms where the prior year 10-K was filed before the accelerated deadline). In addition, Group C firms filed late 22% of the time (LATE_FILER), Group B firms filed late 16% of the time, and Group A firms filed late only 5% of the time.

As noted in Fig. 2 and Table 2 Panels A and B, PRESSURE does not exist for firms in Groups A and B (mean PRESSURE for both groups is negative, indicating prior year audit delays were below the accelerated deadlines). Audit delay actually increased for Groups A and B (i.e., the mean of ChDELAY is 6.4 days for Group A firms and 7.2 days for Group B firms). Consistent with the notion of little time pressure being associated with the audits of Group A and B firms, we observe in Panels A and B substantial time periods between DELAY and FILEDELAY (16 and 21 days for Group A and B firms, respectively). On the other hand, PRESSURE is present for Group C firms. Mean PRESSURE for Group C is 9 days (i.e., on average, prior year audit delay was 9 days in excess of the new deadlines). Group C firms, on average, experienced a substantial reduction in audit delay of 10.7 days (and 15.8 days if we exclude firms in Group C that filed late).

¹¹ Industries were divided into the following groups: SIC 0100–1499, SIC 1500–1999, SIC 2000–2199, SIC 2200–2399, SIC 2400–2799, SIC 2800–3299, SIC 3300–3499, SIC 3500–3999, SIC 4000–4899, SIC 4900, SIC 5000–5299, SIC 5300–5999, and SIC 7000–7999. For parsimony, year and industry indicator variables are not tabulated.

¹² See Appendix B in the Online Appendix for descriptive statistics for our control variables by Group.

Table 2
Descriptive statistics.

Variables	N	Mean	Median	Standard Deviation	Lower Quartile	Upper Quartile
<i>Panel A: Filer Group A</i>						
AbsChWCACC		0.041	0.027	0.048	0.012	0.051
LATE_FILER	772	0.049	0.000	0.216	0.000	0.000
PRESSURE	772	-30.699	-32.000	17.805	-46.000	-14.000
ACCEL_FILER	772	0.315	0.000	0.465	0.000	1.000
SECOND	772	0.277	0.000	0.448	0.000	1.000
DELAY	772	46.999	48.000	20.581	34.000	57.000
ChDELAY	772	6.385	1.000	16.056	-1.000	10.000
FILEDELAY	772	62.948	61.000	34.377	54.000	71.000
ChFILEDELAY	772	2.212	0.000	33.431	-3.000	4.000
<i>Panel B: Filer Group B</i>						
AbsChWCACC	1513	0.050	0.031	0.061	0.013	0.066
LATE_FILER	1513	0.155	0.000	0.362	0.000	0.000
PRESSURE	1513	-28.369	-30.000	17.626	-44.000	-12.000
ACCEL_FILER	1513	0.513	1.000	0.500	0.000	1.000
SECOND	1513	0.132	0.000	0.338	0.000	0.000
DELAY	1513	52.451	54.000	24.079	37.000	65.000
ChDELAY	1513	7.206	2.000	18.289	-2.000	14.000
FILEDELAY	1513	73.888	74.000	26.493	69.000	75.000
ChFILEDELAY	1513	-8.448	-11.000	26.142	-15.000	-5.000
<i>Panel C: Filer Group C</i>						
AbsChWCACC	737	0.051	0.030	0.073	0.013	0.061
LATE_FILER	737	0.218	0.000	0.413	0.000	0.000
PRESSURE	737	8.647	9.000	4.450	5.000	12.000
ACCEL_FILER	737	0.256	0.000	0.437	0.000	1.000
SECOND	737	0.640	1.000	0.480	0.000	1.000
DELAY	737	64.697	59.000	28.499	57.000	69.000
ChDELAY	737	-10.749	-12.000	20.113	-15.000	-5.000
FILEDELAY	737	70.620	60.000	30.562	60.000	75.000
ChFILEDELAY	737	-6.758	-13.000	30.206	-15.000	-6.000

AbsChWCACC is calculated as the absolute value of the change in WCACC. WCACC is calculated as the change in working capital on past, present, and future operating cash flows. Change in working capital from year $t-1$ to year t is computed as: Δ Accounts Receivable + Δ Inventory - Δ Accounts Payable - Δ Taxes Payable + Δ Other Assets. PRESSURE is calculated as the prior year audit delay minus the current year deadline in days. LATE_FILER is equal to one if the firm filed after the filing deadline and zero if the firm filed on time. ACCEL_FILER is an indicator variable equal to one if the firm is an Accelerated Filer (AF) and zero if the firm is a Large Accelerated Filer (LAF). SECOND is coded 1 if the firm year observation was during the second deadline change (i.e., Dec. 2006–Nov. 2007) and zero if the firm year observation was during the first deadline change (i.e., Dec. 2003–Nov. 2004). DELAY is calculated as the number of days from fiscal year-end to the audit report date. ChDELAY is calculated as the change in DELAY. FILEDELAY is calculated as the number of days from fiscal year-end to the filing of the annual report. ChFILEDELAY is calculated as the change in FILEDELAY.

With respect to changes in the period of time between fiscal year-end and the filing of the 10-K with the SEC, file delay increased slightly for Group A firms (the mean of ChFILEDELAY in Panel A is 2.2). File delay for Group B firms was reduced by 8.4 days, which is expected, as these firms had to reduce their file delay, but not necessarily audit delay, to meet the new deadlines. Thus, Group B firms primarily reduced the slack between audit delay and file delay in order to meet the new deadlines rather than reducing both audit and file delay. Group C firms reduced both audit delay (10.7 days) and file delay (6.8 days) to meet the new deadlines.

3.2.2. Hypothesis 1 testing

Table 3 provides results of H1 testing. When the absolute value of the change in working capital accruals (AbsChWCACC) is the dependent variable, the coefficients on PRESSURE and GROUP C are positive and significant (p 's < 0.001). Thus, greater PRESSURE and being in GROUP C led to lower earnings quality. When LATE_FILER is the dependent variable, the coefficients on PRESSURE and Group C are also positive and significant (p 's < 0.001). Thus, higher

PRESSURE and being in Group C led to a higher likelihood of filing late. As predicted, earnings quality decreased and late filing increased among the most vulnerable of firms (i.e., firms with greater PRESSURE and firms in Group C).

The results in Table 3 related to Group B firms refine our understanding of the effects of 10-K accelerations. Prior research suggests firms "affected" by the accelerations (defined as requiring a reduction in filing delay as in the case of both Groups B and C) typically experienced reductions in financial reporting quality (Bryant-Kutcher et al., 2013; Doyle & Magilke, 2013). The non-significant coefficient on GROUP B, when the dependent variable is AbsChWCACC, suggests that earnings quality did not suffer for firms in that group. However, the positive and significant coefficient on GROUP B and GROUP C for LATE_FILER does illustrate firms in both groups do have a higher probability of filing late, relative to firms in Group A (i.e., firms whose prior year filing occurred before the new deadline). As noted in Table 2, firms in Group B and Group C represent a substantial percentage of AFs and LAFs that were subject to the SEC's acceleration of 10-K filings (approximately 75% of our sample). This finding should inform any future deliberations by regulators on the topic of accelerating 10-K filing deadlines. To the extent firms have audit delays that are greater (less) than any new proposed deadline, the acceleration is likely (unlikely) to impair earnings quality. However, to the extent firms have file delays that are greater (less) than any new proposed deadline (i.e., firms in Group B and Group C), the acceleration is likely (unlikely) to increase the probability of firms filing late. We further investigate the potential effects of future SEC accelerations in Section 3.2.4.

3.2.3. Filer type and deadline change

Table 4 Panels A and B provides the results for the tests of our research question: Does the association between audit time pressure and earnings quality differ by filer type and deadline change? In Panel A, we include in Model (1) an indicator variable (ACCEL_FILER) set equal to one if the firm is an AF and zero if the firm is an LAF.¹³ We also incorporate into Model (1) an interaction between ACCEL_FILER and our variables related to time pressure (PRESSURE*ACCEL_FILER in the first regression and GROUP B*ACCEL_FILER and GROUP C*ACCEL_FILER in the second regression). Note the coefficients on ACCEL_FILER and PRESSURE*ACCEL_FILER are positive and significant in the regression where the dependent variable is AbsChWCACC (p -value < 0.001 and p -value = 0.039, respectively). This finding suggests that PRESSURE has a more negative effect on earnings quality for AFs (i.e., when ACCEL_FILER = 1), relative to LAFs. In addition, the coefficients on ACCEL_FILER and GROUP C*ACCEL_FILER are also positive and at least marginally significant (p -value < 0.001, and p -value = 0.090 respectively), which suggests the negative effect on earnings quality for being in Group C, relative to Group A, is greater when the firm is also an AF, relative to an LAF.

Table 4, Panel A also provides results related to the probability of filing late. When the dependent variable is LATE_FILER, the coefficient on ACCEL_FILER is positive and significant (p -value < 0.001); however, the coefficient on PRESSURE*ACCEL_FILER is not significant (p -value = 0.106). This illustrates that AFs (vs. LAFs) are not

¹³ We classify each firm's filer status based on its classification in *Audit Analytics*. Per our discussion with personnel at *Audit Analytics*, firms self-report their filer status classification. When a firm does not self-report, *Audit Analytics* classifies the firm's status as unknown. In those cases, we classify an AF as a firm with a market value of equity (MVE) between \$75M and \$700M and a LAF as a firm with MVE greater than \$700M (see footnote 1).

Table 3
Pressure and groups on working capital accruals and the probability of being a late filer.

Variables	Predicted Sign	$DV = AbsChWCACC$				$DV = LATE_FILER (0 \text{ or } 1)$			
		Parameter Estimate	<i>p</i> -value	Parameter Estimate	<i>p</i> -value	Parameter Estimate	<i>p</i> -value	Parameter Estimate	<i>p</i> -value
INTERCEPT	?	0.0358	<0.0001	0.0290	<0.0001	-2.2263	<0.0001	-3.5501	<0.0001
PRESSURE	+	0.0003	<0.001			0.0282	<0.0001		
GROUP B	?			0.0027	0.252			1.1571	<0.0001
GROUP C	+			0.0135	<0.0001			1.8678	<0.0001
ChSEASON	?	0.0138	0.473	0.0149	0.436	0.6634	0.297	0.8599	0.189
ChLOSS	?	0.0071	0.058	0.0073	0.051	0.3074	0.034	0.2987	0.040
ChCFO	-	-0.0258	0.415	-0.0249	0.431	0.5978	0.201	0.7041	0.128
ChB/M	-	0.0089	0.003	0.0088	0.004	-0.1366	0.078	-0.1443	0.069
ChLgMVE	-	0.0202	<0.0001	0.0205	<0.0001	0.3440	0.009	0.3560	0.006
ChLEVERAGE	+	-0.0239	0.262	-0.0249	0.242	-1.0869	0.019	-1.2655	0.007
ChFINANCE	?	0.0036	0.117	0.0037	0.109	-0.3721	0.002	-0.3563	0.003
ChDISTRESS	-	-0.0040	0.223	-0.0038	0.239	0.0414	0.498	0.0577	0.351
ChGROWTH	+	-0.0037	0.225	-0.0037	0.228	-0.1579	0.074	-0.1473	0.076
ChRESTRUCTURE	?	-0.0016	0.507	-0.0019	0.430	0.0235	0.868	0.0270	0.849
ChEXTRAORDINARY	?	-0.0031	0.510	-0.0025	0.591	0.3300	0.159	0.4290	0.079
ChACQUISITION	?	-0.0057	0.017	-0.0058	0.014	0.0463	0.744	0.0395	0.778
ChQUALIFIED	?	-0.0023	0.266	-0.0025	0.231	0.1974	0.103	0.1380	0.259
ChGOING_CONCERN	?	0.0629	0.003	0.0643	0.002	0.1747	0.685	0.3609	0.408
ChAUDITOR	?	0.0025	0.646	0.0028	0.615	1.6292	<0.0001	1.6451	<0.0001
ChLEADER	?	0.0008	0.920	0.0006	0.937	0.1533	0.838	-0.0115	0.989
ChLgAUDIT_FEES	?	0.0048	0.123	0.0049	0.115	1.0093	<0.0001	0.9863	<0.0001
Year and Industry dummies				Not Reported				Not Reported	
R ²		0.146		0.146					
No. of obs		3022		3022		3022		3022	

This table provides the results of estimating Model (1) on the sample of all Accelerated Filers (AFs) and Large Accelerated Filers (LAFs) in the years of the filing deadline changes (see Table 1 sample selection). Model (1) is a multivariate regression when the dependent variable is AbsChWCACC and a logistic regression when the dependent variable is LATE_FILER. AbsChWCACC is calculated as the absolute value of the change in WCACC. WCACC is calculated as the change in working capital on past, present, and future operating cash flows. Change in working capital from year $t-1$ to year t is computed as: Δ Accounts Receivable + Δ Inventory - Δ Accounts Payable - Δ Taxes Payable + Δ Other Assets. LATE_FILER is equal to one if the firm filed after the filing deadline and zero if the firm filed on time. PRESSURE is calculated as the prior year audit delay minus the current year deadline in days. GROUP A is an indicator variable equal to one if the firm is in Group A and zero otherwise. GROUP B is an indicator variable equal to one if the firm is in Group B and zero otherwise. GROUP C is an indicator variable equal to one if the firm is in Group C and zero otherwise. ChSEASON is coded 1 if the firm changed from having a busy season year-end to a non-busy season year-end (or vice versa) and 0 otherwise. ChLOSS is coded 1 if the firm switched from operating at a loss in the prior year to having net income in the current year (or vice versa) and 0 otherwise. ChCFO is calculated as the change in cash flow from operations. ChB/M is calculated as the change in book to market ratio. ChLgMVE is the change in the natural log of market value of equity. ChLEVERAGE is calculated as the change in LEVERAGE, which is equal to total liabilities divided by total assets. ChFINANCE is coded 1 if the number of outstanding shares increased by at least 10% or long-term debt increased by at least 20% during the current year, but not in the prior year (or vice versa) and 0 otherwise. ChDISTRESS is calculated as the change in DISTRESS, which is calculated based on Zmijewski (1984). ChGROWTH is calculated as the change in sales growth rate. ChRESTRUCTURE is coded 1 if the firm reported restructuring charges in either the current or prior year (but not both) and 0 otherwise. ChEXTRAORDINARY is coded 1 if the firm reported extraordinary item(s) in either the current or prior year (but not both) and 0 otherwise. ChACQUISITION is coded 1 if the firm experienced an acquisition in either the current or prior year (but not both) and 0 otherwise. ChQUALIFIED is equal to 1 if the company's audit opinion had an explanatory paragraph (other than going concern) in either the prior or current year (but not both) and 0 otherwise. ChGOING_CONCERN is coded 1 if the audit report disclosed doubt about the entity's ability to continue as a going concern in either the current or prior year (but not both) and 0 otherwise. ChAUDITOR is coded 1 if an auditor change occurred during the current year and 0 otherwise. ChLEADER is coded as 1 if the company was audited by a national industry leader in the prior year or current year (but not both) and 0 otherwise. ChLgAUDIT_FEES is calculated as the change in the natural log of audit fees. All variables are winsorized at the 1st and 99th percentiles and *p*-values are one-tailed when there are hypothesized directional expectations. All other *p*-values are two-tailed. Variables of interest are in bold.

differentially affected by PRESSURE in terms of whether or not they file late. The coefficients on ACCEL_FILER in the last regression is positive and significant (*p*-value = 0.053) while the coefficient on GROUP C*ACCEL_FILER is not significant (*p*-value = 0.209). We observe that AFs (vs. LAFs) are not differentially affected by being in Group C relative to Group A in terms of whether or not they file late.

Panel B of Table 4 provides results of tests for differences between the first deadline change (affecting AFs and LAFs) and the second deadline change (only affecting LAFs). In Panel B, we include in Model (1) an indicator variable (SECOND) set equal to one if the firm observation is part of the second deadline change and zero if the observation is a part of the first deadline change. We also incorporate into Model (1) an interaction between SECOND and our variables related to time pressure (PRESSURE*SECOND in the first regression and GROUP B*SECOND and GROUP C*SECOND in the second regression). When the dependent variable is AbsChWCACC, consistent with Table 3 the coefficient on PRESSURE in the first regression is positive and significant (*p*-value = 0.001). However, the coefficient on SECOND is negative and significant (*p*-value < 0.001), which suggests firms in the first deadline change

had lower earnings quality relative to firms in the second deadline change.¹⁴ The coefficient on PRESSURE*SECOND is not significant (*p*-value = 0.747), which indicates the negative effect that PRESSURE has on earnings quality is not different between the first and second deadline. Alternatively, the coefficient on GROUP C*SECOND is negative and significant (*p*-value = 0.006), which illustrates the negative effect on earnings quality for being in Group C is smaller during the second deadline change, relative to the first deadline change. This suggests that audit firms may have learned from the first deadline change to identify best practices to employ during the second deadline (see section 4.2.3 for an analysis of best practices and lessons learned).

¹⁴ Untabulated results of regressions including SECOND without the interaction terms also reveal a negative, significant coefficient on SECOND for all models presented in Panel B of Table 4 (all *p*-values \leq 0.070). This also implies that firms exhibited lower earnings quality during the first accelerated filing time period than they did during the second time period. Results for our independent variables in these regressions (i.e., PRESSURE, GROUP B, and GROUP C) remain substantially unchanged from those reported in Table 3.

Table 4
Pressure and groups on working capital accruals and the probability of being a late filer.

Variables	Predicted Sign	<i>DV = AbsChWCACC</i>				<i>DV = LATE_FILER (0 or 1)</i>			
		Parameter Estimate	<i>p</i> -value	Parameter Estimate	<i>p</i> -value	Parameter Estimate	<i>p</i> -value	Parameter Estimate	<i>p</i> -value
<i>Panel A: Filer Type</i>									
INTERCEPT	?	0.0342	<0.0001	0.0316	<0.0001	-2.3627	<0.0001	-3.2634	<0.0001
PRESSURE	+	0.0001	0.222			0.0358	<0.0001		
GROUP B	?			0.0016	0.460			0.4467	0.113
GROUP C	+			0.0063	0.012			1.4519	<0.0001
ACCEL_FILER	?	0.0267	<0.0001	0.0170	<0.0001	1.2566	<0.0001	0.6829	0.053
PRESSURE*ACCEL_FILER	?	0.0003	0.039			-0.0121	0.106		
GROUP B*ACCEL_FILER	?			0.0000	0.993			1.0438	0.008
GROUP C*ACCEL_FILER	?			0.0152	0.090			0.5260	0.209
ChSEASON	?	0.0135	0.463	0.0151	0.402	0.7072	0.334	0.9667	0.195
ChLOSS	?	0.0063	0.086	0.0063	0.085	0.2637	0.073	0.2788	0.062
ChCFO	-	-0.0256	0.410	-0.0248	0.423	0.6151	0.148	0.7022	0.094
ChB/M	-	0.0093	0.002	0.0092	0.002	-0.1301	0.074	-0.1307	0.089
ChLgMVE	-	0.0187	<0.0001	0.0190	<0.0001	0.2526	0.031	0.2902	0.013
ChLEVERAGE	+	-0.0227	0.281	-0.0232	0.267	-1.0940	0.009	-1.2203	0.004
ChFINANCE	?	0.0043	0.055	0.0043	0.059	-0.3329	0.007	-0.3219	0.009
ChDISTRESS	-	-0.0040	0.211	-0.0039	0.225	0.0390	0.468	0.0523	0.337
ChGROWTH	+	-0.0033	0.277	-0.0033	0.284	-0.1284	0.107	-0.1243	0.114
ChRESTRUCTURE	?	-0.0012	0.604	-0.0013	0.575	0.0360	0.804	0.0326	0.823
ChEXTRAORDINARY	?	-0.0019	0.684	-0.0016	0.725	0.4261	0.083	0.4641	0.065
ChACQUISITION	?	-0.0054	0.021	-0.0055	0.018	0.0523	0.718	0.0485	0.737
ChQUALIFIED	?	-0.0025	0.226	-0.0028	0.183	0.2031	0.100	0.1625	0.195
ChGOING_CONCERN	?	0.0582	0.005	0.0581	0.005	0.0049	0.990	0.1428	0.723
ChAUDITOR	?	0.0016	0.770	0.0015	0.783	1.6121	<0.0001	1.6860	<0.0001
ChLEADER	?	0.0018	0.811	0.0025	0.749	0.1922	0.779	0.0531	0.944
ChLgAUDIT_FEES	?	0.0055	0.077	0.0058	0.063	1.0539	<0.0001	1.0258	<0.0001
Year and Industry dummies		Not Reported		Not Reported		Not Reported		Not Reported	
R ²		0.158		0.159					
No. of obs		3022		3022		3022		3022	
<i>Panel B: Deadline Change</i>									
INTERCEPT	?	0.0532	<0.0001	0.0401	<0.0001	-1.6040	<0.0001	-3.4722	<0.0001
PRESSURE	+	0.0003	0.001			0.0251	<0.0001		
GROUP B	?			0.0049	0.113			1.4121	<0.0001
GROUP C	+			0.0221	<0.0001			1.9391	<0.0001
SECOND	?	-0.0173	<0.0001	-0.0045	0.053	-0.8557	<0.0001	0.5650	0.136
PRESSURE*SECOND	?	0.0000	0.747			0.0493	0.001		
GROUP B*SECOND	?			-0.0075	0.067			-1.8325	<0.001
GROUP C*SECOND	?			-0.0181	0.006			-0.6394	0.128
ChSEASON	?	0.0138	0.473	0.0155	0.419	0.6464	0.302	0.8623	0.199
ChLOSS	?	0.0071	0.057	0.0074	0.048	0.2946	0.073	0.3117	0.034
ChCFO	-	-0.0258	0.415	-0.0245	0.437	0.5970	0.148	0.7248	0.119
ChB/M	-	0.0090	0.003	0.0089	0.004	-0.1395	0.074	-0.1411	0.077
ChLgMVE	-	0.0202	<0.0001	0.0204	<0.0001	0.3437	0.031	0.3582	0.006
ChLEVERAGE	+	-0.0239	0.262	-0.0250	0.236	-1.0693	0.009	-1.2645	0.006
ChFINANCE	?	0.0036	0.118	0.0036	0.113	-0.3695	0.007	-0.3553	0.004
ChDISTRESS	-	-0.0040	0.223	-0.0038	0.244	0.0414	0.468	0.0599	0.336
ChGROWTH	+	-0.0037	0.225	-0.0036	0.234	-0.1551	0.107	-0.1461	0.078
ChRESTRUCTURE	?	-0.0016	0.508	-0.0018	0.463	0.0305	0.804	0.0311	0.828
ChEXTRAORDINARY	?	-0.0031	0.508	-0.0029	0.529	0.3399	0.083	0.4056	0.093
ChACQUISITION	?	-0.0056	0.017	-0.0057	0.016	0.0230	0.718	0.0350	0.803
ChQUALIFIED	?	-0.0023	0.266	-0.0027	0.198	0.1994	0.100	0.1320	0.283
ChGOING_CONCERN	?	0.0628	0.003	0.0621	0.003	0.2268	0.990	0.4095	0.347

ChAUDITOR	?	0.0025	0.644	0.0029	0.602	1.6124	<0.0001	1.6688	<0.0001
ChLEADER	?	0.0008	0.916	0.0014	0.865	0.1498	0.779	0.0165	0.984
ChLgAUDIT_FEES	?	0.0048	0.122	0.0053	0.087	0.9862	<0.0001	0.9818	<0.0001
Year and Industry dummies		Not Reported				Not Reported			
R ²		0.142		0.144					
No. of obs		3022		3022		3022		3022	

This table provides the results of estimating Model (1) on the sample of all Accelerated Filers (AFs) and Large Accelerated Filers (LAFs) in the years of the filing deadline changes (see Table 1, sample selection). Model (1) is a multivariate regression when the dependent variable is AbsChWCACC and a logistic regression when the dependent variable is LATE_FILER. AbsChWCACC is calculated as the absolute value of the change in WCACC. WCACC is calculated as the change in working capital on past, present, and future operating cash flows. Change in working capital from year $t-1$ to year t is computed as: $\Delta \text{Accounts Receivable} + \Delta \text{Inventory} - \Delta \text{Accounts Payable} - \Delta \text{Taxes Payable} + \Delta \text{Other Assets}$. LATE_FILER is equal to one if the firm filed after the filing deadline and zero if the firm filed on time. PRESSURE is calculated as the prior year audit delay minus the current year deadline in days. GROUP A is an indicator variable equal to one if the firm is in Group A and zero otherwise. GROUP B is an indicator variable equal to one if the firm is in Group B and zero otherwise. GROUP C is an indicator variable equal to one if the firm is in Group C and zero otherwise. ACCEL_FILER is an indicator variable equal to one if the firm is an Accelerated Filer (AF) and zero if the firm is a Large Accelerated Filer (LAF). SECOND is coded 1 if the firm year observation was during the second deadline change (i.e., Dec. 2006–Nov. 2007) and zero if the firm year observation was during the first deadline change (i.e., Dec. 2003–Nov. 2004). CHSEASON is coded 1 if the firm changed from having a busy season year-end to a non-busy season year-end (or vice versa) and 0 otherwise. CHLOSS is coded 1 if the firm switched from operating at a loss in the prior year to having net income in the current year (or vice versa) and 0 otherwise. CHCFO is calculated as the change in cash flow from operations. CHB/M is calculated as the change in book to market ratio. ChLgMVE is the change in the natural log of market value of equity. CHLEVERAGE is calculated as the change in LEVERAGE, which is equal to total liabilities divided by total assets. CHFINANCE is coded 1 if the number of outstanding shares increased by at least 10% or long-term debt increased by at least 20% during the current year, but not in the prior year (or vice versa) and 0 otherwise. CHDISTRESS is calculated as the change in DISTRESS, which is calculated based on Zmijewski (1984). CHGROWTH is calculated as the change in sales growth rate. CHRESTRUCTURE is coded 1 if the firm reported restructuring charges in either the current or prior year (but not both) and 0 otherwise. CHEXTRAORDINARY is coded 1 if the firm reported extraordinary item(s) in either the current or prior year (but not both) and 0 otherwise. CHACQUISITION is coded 1 if the firm experienced an acquisition in either the current or prior year (but not both) and 0 otherwise. CHQUALIFIED is equal to 1 if the company's audit opinion had an explanatory paragraph (other than going concern) in either the prior or current year (but not both) and 0 otherwise. CHGOING_CONCERN is coded 1 if the audit report disclosed doubt about the entity's ability to continue as a going concern in either the current or prior year (but not both) and 0 otherwise. CHAUDITOR is coded 1 if an auditor change occurred during the current year and 0 otherwise. CHLEADER is coded as 1 if the company was audited by a national industry leader in the prior year or current year (but not both) and 0 otherwise. CHLgAUDIT_FEES is calculated as the change in the natural log of audit fees. All variables are winsorized at the 1st and 99th percentiles and p -values are one-tailed when there are hypothesized directional expectations. All other p -values are two-tailed. Variables of interest are in bold.

Table 4, Panel B also provides results related to the probability of filing late. When the dependent variable is LATE_FILER, the coefficients on PRESSURE and PRESSURE*SECOND are positive and significant (p -value < 0.001 and p -value = 0.001 respectively) although the coefficient on SECOND is negative and significant (p -value < 0.001). These findings imply that being in the second deadline change decreases the probability of filing late relative to the first deadline change. However, rising PRESSURE minimizes the reduction in the probability of filing late in the second deadline. Finally, the coefficients on SECOND and SECOND*GROUP C are not significant (p -value = 0.136 and p -value of 0.128 respectively), which suggests that being in GROUP C during the second deadline did not affect the probability of filing late, relative to firms in Group A. Overall, our results support the notion that the negative relation between audit time pressure and earnings quality (tested by H1) was more acute for AFs and during the first deadline change (which affected both AFs and LAFs). Our conclusion relates predominately to our measure of accruals and, to a lesser extent, filing the 10-K late.

3.2.4. Implications for the future

The Wall Street Reform and Consumer Protection Act (Dodd-Frank) created a permanent exemption for non-accelerated filers (NAFs) from Section 404(b) of the Sarbanes-Oxley Act, which clears the way for the SEC to impose filing deadline reductions on NAFs (e.g., a reduction from 90 to 75 days). In addition, AFs were originally slated by the SEC to have a 60-day deadline, which indicates that the SEC desires for these firms to face a shorter deadline. As technology advances and users demand access to information on a timelier basis, it is reasonable to assume the SEC (and other foreign regulators) will propose future 10-K filing accelerations, particularly in the cases of AFs and NAFs. Our results in Section 3.2.3 indicate that, in general, the audits of smaller (vs. larger) firms are likely more troublesome during accelerations (e.g., they are more likely to have lower earnings quality). Thus, future accelerations of 10-K deadlines for smaller NAFs or AFs could lead to lower quality earnings being supplied to market participants.

To assess the potential impact of future reductions in 10-K filing deadlines, we examine the potential PRESSURE that AFs and NAFs might experience, assuming a future 15-day reduction for each category of filer.¹⁵ As we observe above, any future accelerations that do not induce PRESSURE on the auditor are not likely to impact earnings quality. On the other hand, to the extent that future accelerations induce time PRESSURE on the audits of AFs and NAFs, our evidence suggests that earnings quality will suffer.

Based on 2014 filing data, in Table 5 we illustrate that 56% of NAFs had audit delays greater than 75 days and 78% of AFs had audit delays greater than 60 days. Thus, the audits of a majority of NAFs and AFs would be substantially affected by another 15-day deadline reduction (they would be considered Group C firms as described in Fig. 2 and in our analyses). Table 5 also presents descriptive statistics for the amount of pressure (days between audit report date and potential new filing deadline) and the amount of slack (days between audit report date and filing date) for NAFs and AFs whose audit delay is greater than the new potential filing deadline. Mean pressure in days is 8.6 and 9.5 for NAFs and AFs, respectively. Thus, mean pressure for these firms would be slightly higher than our current sample of Group C firms (note mean PRESSURE for Group C firms in Table 3, Panel C = 8.6 days). The lack of current slack for NAFs (mean = 0.7 days) and AFs (mean = 0.2 days) suggests audit delay is the barrier to filing earlier and that

¹⁵ As noted previously and described in Fig. 1, the SEC has twice accelerated 10-K filing deadlines by 15 days.



Table 5
Analysis of pressure and slack for NAFs and AFs in fiscal year 2014.

NAFs filing between 75 and 90 days (N = 921 or 56% of all NAFs that filed on time)	Non Accelerated Filers (NAFs)		
	Mean	Median	Std Dev
Pressure			
Days between Audit Report Date and Potential New Deadline (i.e., 75 days)	8.6	10	4.84
Slack			
Days between Audit Report Date and Filing Date	0.7	0.0	1.73
AFs filing between 60 and 75 days (N = 1003 or 78% of all AFs that filed on time)	Accelerated Filers (AFs)		
	Mean	Median	Std Dev
Pressure			
Days between Audit Report Date and Potential New Deadline (i.e., 60 days)	9.5	11	4.73
Slack			
Days between Audit Report Date and Filing Date	0.2	0.0	0.74

Data includes all NAFs and AFs in Audit Analytics that filed a 10-K with a 2014 fiscal year-end. Firms self-report their filer status. We classify a NAF as a firm with a market value of equity (MVE) of less than \$75M and an AF as a firm with a market value of equity between \$75M and \$700M.

these audits are currently being performed as quickly as possible (to limit filing delays). In short, these data suggest that a 15-day acceleration of 10-K filing deadlines for NAFs and AFs would require large, pressure-induced reductions in audit delay. Our study finds that such reductions lead to reductions in the quality of earnings provided to financial statement users.¹⁶

4. Survey analysis

4.1. Method

In order to obtain a richer understanding of the effects of accelerating 10-K deadlines on audit/earnings quality, we conducted a survey that was completed by thirty-two retired Big Four audit partners who served as a partner on either an AF or LAF during the years of acceleration (see Appendix C of the Online Appendix for the full survey).¹⁷ As recommended by Bloomfield, Nelson, and Soltes (2016), we use our survey to provide context for our archival results and to suggest directions for the development of new theory. We use retired audit partners as our participants for two reasons. First, all of them were senior partners most responsible for, and knowledgeable about, audit quality during the 10-K acceleration time period (between 2003 and 2007), which allows our participants to provide informed responses on matters that are hard to observe using other methods. Second, we expect retired partners to be much more likely to provide candid responses (vs. active partners presently employed by the firms). Survey participants were given the following instructions:

¹⁶ Data from our survey of audit partners (described in Section 4) is consistent with the notion that future accelerations for NAFs and AFs could impair audit quality. We asked respondents to rate the potential impact on audit quality (1 = Very Negative Impact, 5 = No Impact, and 10 = Very Positive Impact) if the 10-K filing deadlines for NAFs and AFs were reduced by 15 days (as described above). For both NAFs and AFs, seventy-seven percent of respondents provided a response below five (on the "Very Negative Impact" side of the scale). Mean responses for NAFs and AFs (3.25 and 3.81, respectively) were also significantly lower than the mid-point of five (all p -values ≤ 0.010).

¹⁷ Obtaining our sample began with contacting current and retired national firm professionals at all of the Big Four accounting firms. We asked these professionals to provide our online (Qualtrics) survey link directly to ten to twenty retired partners that served on an AF or LAF. The link was distributed to the retired partners by the national firm professionals via an e-mail message provided by the authors. Forty-nine partners started the survey. Four participants did not serve on an AF or LAF during the acceleration time period and were exited from the survey. Thirteen participants did not complete the survey. Our final sample size of thirty-two is comparable to previous studies that have attempted to obtain qualitative data from audit professionals (e.g., Hirst & Koonce, 1996; Trompeter & Wright, 2010).

Select ONE fiscal year-end audit for which you served as an audit partner and that was required to accelerate its 10-K filings between the years of 2003–2004 or 2006–2007. You will be asked

Table 6
Survey descriptive statistics.

Participant Variables	N	Mean	Standard Deviation
SERVED	32	100.00	N/A
ClientEXPERIENCE	31	2.90	1.38
IndEXPERIENCE	32	19.13	8.29
PercTIME	32	42.91	23.33
PercFAC	32	73.36	24.03
PercBIGFOUR	32	100.00	N/A
PercLARGEOFFICE	32	53.13	N/A
OtherACCELERATORS	30	3.17	1.60
Audit Variables	N	Mean	Standard Deviation
PercLAF	32	71.88	N/A
PercFIRST	32	59.37	N/A
Perc10-KEARLY	32	93.75	N/A
PercAUDITEARLY	32	71.88	N/A
DaysPRESSURE	31	8.53	7.56
ScalePRESSURE	32	7.34	2.01
PercREV>\$10B	32	37.49	N/A
PercSEASON	32	87.50	N/A

SERVED is the percent of participants that indicated that they served as a partner on an accelerated or large accelerated filer during one of the acceleration periods. ClientEXPERIENCE is the participant's response to: At the time of the 10-K filing deadline change, for how many years had you served on the audit engagement that you chose? IndEXPERIENCE is the response to the following question: At the time of the acceleration, for how many years had you served companies in the client's industry? PercTIME is the response to: Approximately what percentage of your time (measured on an annual basis) did you work on this client? PercFAC is the response to: Approximately what percentage of your hours charged to this client did you spend at the client's facilities? PercBIGFOUR is the percent of respondents that worked for a Big Four firm. PercLARGEOFFICE is the percent of respondents that indicated that they worked for a large (>500 Professionals) office. OtherACCELERATORS is the response to: How many years had you served companies in the client's industry that were required to accelerate the filing of their 10-K? PercLAF is the percent of respondents that selected the audit of a Large Accelerated Filer (vs. Accelerated Filer) to provide data. PercFIRST is the percent of respondents that selected an audit affected by the first acceleration (vs. the second acceleration). Perc10-KEARLY is the percent of audits selected where the 10-K filing date had to be accelerated to meet the new deadline. PercAUDITEARLY is the percent of audits selected where the audit report date had to be accelerated to meet the new deadline. DaysPRESSURE is the response to the following: Please recall the approximate number of days that the audit report date was accelerated. ScalePRESSURE is the response to: In the year of acceleration, the level of time pressure on the audit team was (measured on a scale where 1 = Very Low and 10 = Very High). PercREV>\$10B is the percent of audits selected where the client's revenues exceeded \$10 Billion. PercSEASON is the percent of audits selected that had a fiscal year-end either in December or January. When presenting a standard deviation does not provide any value (e.g., SERVED, PercBIGFOUR) we denote this with "N/A".

to recall aspects of that audit during the year of acceleration. Therefore, if you served more than one client that accelerated its 10-K filing in response to SEC rules 33-8128 and 33-8644, please (if possible) select the audit that:

- You can best recall.
- Required the 10-K to be filed earlier than in the previous year, in order to meet the new accelerated 10-K filing
- Required that audit report be dated earlier than in previous year, in order for the client to meet the new accelerated 10-K filing deadline.¹⁸

The survey asked participants a series of open-ended questions concerning the topics that may or may have not been an issue during their selected audit (e.g., engagement team morale, resolving audit adjustments).¹⁹ In addition to obtaining the aforementioned qualitative data, the survey elicited quantitative data related to time pressure on the audit, measures of audit/earnings quality, strategies employed to maintain audit quality, demographic data corresponding to the participant and the audit selected, and other miscellaneous questions. We use these data to identify the strategies used to maintain an acceptable level of audit quality during accelerations (i.e., best practices and lessons learned) and to provide additional insight into our archival results. Participants took, on average, 42.07 minutes to complete the survey instrument.²⁰

Descriptive statistics for the participants and the audits they selected are presented in Table 6. Of particular note is that participants devoted a high percentage of their time to the audits they selected (PercTIME and PercFAC) and they had several other clients that were required to accelerate their 10-K filing as well (Other-ACCELERATORS). Thus, these participants were likely aware of the specific audit issues, strategies, and outcomes associated with their selected audit and the general dynamics of auditing under accelerated conditions. The majority of clients selected by our respondents were LAFs and were audits where both the 10-K (Perc10-KEARLY) and the audit report date (PercAUDITEARLY) had to be accelerated to meet the new deadline. Therefore, as one might expect, participants reported a fair amount of time pressure on the audits they selected (DaysPRESSURE and ScalePRESSURE). While not tabulated, participants selected audit clients from a variety of industries, with the most common being manufacturing and industrial products ($n = 12$).

4.2. Results

4.2.1. Perceptions related to time pressure and audit quality

Our survey analysis provides quantitative and qualitative evidence about audit partners' experiences with the acceleration of 10-K filing deadlines. When we asked our survey respondents if they experienced any additional time pressure during the audit they selected, one respondent noted the following:

Shortening the amount of time to complete the audit by 20 days added extreme pressure. Not only because the end date was 20 days quicker but we were expected to be substantially complete

well in advance of the filing date in order to meet with the audit committee on audit issues and findings. Because the audit committee needed our views in advance of the audit committee meeting, that shortened the time even more for us to do our work.

Our survey data confirms that PRESSURE used in our archival analysis represents an adequate proxy for the time pressure perceived by the audit team. A non-tabulated analysis reveals a significant, positive correlation (p -value = 0.023) between DaySPRESSURE and ScalePRESSURE (see variables in Table 6).

In Section 2.3 we describe how time pressure induced by 10-K accelerations could affect the following factors: the audit adjustment process, testing accounts at year-end, professional skepticism, and morale/effort. We asked respondents to comment on these factors and obtained the following:

It was difficult to align client personnel schedules to make certain the audit firm personnel understood the client's accounting for complex transactions and confer about potential audit adjustments.

The entire audit support system was built on the basis of a 90 day year-end close. So attorneys, actuaries, valuation specialists, audit committee members all had to adjust their schedules forward and, frankly, many of them did not which caused the last two weeks of the audit to be very difficult.

I was very concerned about the risk that long hours might adversely impact the degree of professional skepticism maintained by the staff. Our auditors were very busy and they recognized that pushing the client for more answers in areas being audited today would only delay the client's delivery of schedules needed for audit areas scheduled to be started tomorrow.

It caused significant morale issues due to increased time pressures on multiple client audit closings. It got to a point where our firm executives were working/spending significant amounts of time to persuade Generation X & Y professionals to "hang in there" and not quit.

Survey responses also underscored how time pressure imposes challenges on receiving and evaluating complex valuations (e.g., derivatives, pensions, and goodwill) as follows:

The audit required involvement by specialists in the areas of pensions and derivatives as well as an SEC reviewing partner. Those specialists were exceptionally busy when I needed them, given the accelerated filing timeframes impacting so many clients of the firm.

It was difficult for the audit team to get comfortable with the valuation of derivatives, due to the (then) size of our firm's available pool of experts and tools for valuation of swaps, collars, etc.

Valuation work put significant stress on the client's internal valuation team to gather the required valuation support. This led to erosion in relationships with some of the client's valuation people.

Receipt of third party valuation, actuarial, and goodwill impairment assessments were completed closer to reporting deadlines.

Valuations at year-end were critical and the time required for validation of them put us in a squeeze to meet earlier signoff.

¹⁸ Because our analyses focus on firms that accelerated both the 10-K and audit report (Group C firms in Fig. 2), we asked participants to recall an audit that would be classified as a Group C audit.

¹⁹ We include the exact questions in Appendix D of our Online Appendix, as well as additional, substantive responses not included in this study's text.

²⁰ When calculating this average, we exclude three participants who took over 2 hours to complete the instrument and most likely did not complete the survey at one sitting.

Table 7
Best practices.

Strategies	Not Attempted	Not At All (1,2,3,4)	Middle (5 and 6)	To A Great Extent (7,8,9,10)	Response Mean	H0: Avg Rating = 5.74
1. MoreHOURS	3	6	2	21	7.24	***
2. InterimTESTING	2	4	5	21	6.93	***
3. RescheduleAUDITS	3	6	7	16	6.48	*
4. InternalCONTROLS	4	5	11	12	6.21	
5. MoreSENIORITY	8	5	8	11	6.17	
6. ClientCLOSE	4	7	7	14	6.11	
7. ConsultNATIONAL	4	5	13	10	6.00	
8. OmitlowvaluePROCEDURES	4	8	10	10	5.96	
9. ItAUDIT	8	7	9	8	5.79	
10. MoreSTAFF	9	6	9	8	5.65	
11. IA	4	7	13	8	5.46	
12. IncreasingFEE	6	10	9	7	5.42	
13. OUTSOURCE	16	4	9	3	5.38	
14. IndEXPERIENCE	9	7	10	6	5.17	
15. OtherSPECIALISTS	10	8	10	4	5.09	
16. CAATS	5	10	12	5	4.96	*

Thirty-two survey participants were asked to indicate, for the audit they selected, how much each of the above strategies enhanced their audit team's ability to maintain an acceptable level of audit quality in the year of the acceleration. Participants responded on a scale where 1 = Not At All and 10 = To A Great Extent. If the strategy was not attempted, participants could indicate that the strategy was not attempted. Columns 2-5 present the number of participants responding not attempted, on the "Not At All" side of the scale (1-4), in the middle of the scale (5 and 6), and on the "To A Great Extent" side of the scale (7-10). The mean response for the sample across all participants and strategies (excluding observations where a strategy was not attempted) is 5.74. The final column reports the results of a *t*-test of the null hypothesis that each strategy's average response is equal to the mean response for the entire sample (5.74). *** and * denote rejection at the 1% and 10% levels, respectively. The strategies were measured with the following prompts: MoreHOURS = Expanding the number of hours worked per day/week. InterimTESTING = Performing additional audit procedures before fiscal year-end (interim testing). RescheduleAUDITS = Rescheduling the audits of non-public clients in your office to allocate human resources to accelerated and large accelerated filer audits. InternalCONTROLS = Additional testing and reliance on your client's internal controls over financial reporting. MoreSENIORITY = Increasing the seniority of the professionals assigned to the engagement. ClientCLOSE = Requesting the client to modify their year-end closing procedures to provide for additional audit time. ConsultNATIONAL = Consulting with the national office on accounting and auditing issues. OmitlowvaluePROCEDURES = Omitting "low value" audit procedures that were performed in the prior year. ItAUDIT = Increasing the number of IT audit specialists on the engagement team. MoreSTAFF = Increasing the number of audit professionals on the engagement team, regardless of industry expertise. IA = Increasing reliance on your client's internal audit function. IncreasingFEE = Increasing the audit fee to deal with the SEC mandated acceleration. OUTSOURCE = Outsourcing audit work to a foreign country (i.e., offshoring). IndEXPERIENCE = Increasing the number of audit professionals on the engagement team with expertise in the industry of your client. OtherSPECIALISTS = Increasing the number of other specialists (other than IT) on the engagement team. CAATS = Increasing the use of computer assisted audit techniques (e.g., IDEA) on the audit.

Consistent with our archival analysis that implies the audits of LAFs were less affected by accelerations, when we asked our survey respondents if they felt that the audits of LAFs or AFs were better able to handle any time pressures caused by accelerations, eighty-seven percent of our respondents indicated the audits of LAFs were better equipped. When we asked why this was the case, we obtained the following:

Typically, more established companies, longer history of reporting, identical IT platforms, more experienced and more accounting staffs, stronger internal controls. Also, more established boards and experienced audit committees.

4.2.2. Further investigation of the time pressure and earnings quality relation

In an attempt to pinpoint why we observe the time pressure and earnings quality relations as described in Table 3, we analyze data obtained from our survey participants. We obtained three measures of time pressure for the audits selected by our participants, DaysPRESSURE (similar to PRESSURE), PercAUDITEARLY (similar to GROUP C) and ScalePRESSURE (a more subjective assessment of time pressure; see Table 6 for variable definitions). We also measured several process and outcome variables related to audit/earnings quality (e.g., the effectiveness of year-end audit procedures, overall level of audit quality). Survey respondents were asked to rate these process and outcome variables for the year of acceleration (when compared to their average client that year) on a scale ranging from 1 = Lower to 10 = Higher. In three non-tabulated ordinal regressions, controlling for the variables listed in Table 6, we observe that DaysPRESSURE, PercAUDITEARLY, and ScalePRESSURE are all positively associated with the level of difficulty

associated with resolving audit adjustments (all *p*-values < 0.019).²¹ In short, our survey data delves deeper into the H1 relation and provides evidence that greater time pressure on the auditor significantly increases the complexity of resolving financial statement adjustments identified during the audit.

4.2.3. Best practices and lessons learned

Given that future accelerations will likely induce substantial time pressure on audits, we use our survey data to identify strategies that enhanced the ability of audit teams to maintain an acceptable level of audit quality during 10-K accelerations. As such, we attempt to identify some best practices, and also some strategies that may be less effective. Table 7 lists, in order of mean responses, the sixteen potential strategies we examined (e.g., expanding the number of hours worked per day/week, MoreHOURS). Participants were asked how much each of the strategies enhanced their audit team's ability to maintain an acceptable level of audit quality in the year of the acceleration and responded on a scale where 1 = Not At All and 10 = To A Great Extent. If the strategy was not attempted, participants could denote this fact instead of providing a response to the scale. For each strategy, Columns 2-5 of Table 7 present the number of participants responding: not attempted, on the "not at all" side of the scale (1-4), in the middle of the scale (5 and 6), and on the "to a great extent" side of the scale (7-10), respectively. The mean response for the sample across all participants and strategies (excluding observations where a strategy was not attempted) is 5.74. The final column reports the results of a *t*-test of the null hypothesis where each strategy's average

²¹ No other process or outcome variables were significantly associated with all three of our survey's measures of time pressure.

response is equal to the mean response for the entire sample across all participants and strategies (5.74). Note in the final column that the means for MoreHOURS, InterimTESTING (performing additional audit procedures before fiscal year-end), and RescheduleAUDITS (rescheduling the audits of non-public clients) are significantly greater than 5.74 and the mean for CAATS is significantly lower than 5.74.

Some items of particular importance are illustrated in Table 7. First, working more hours, performing more interim testing, and rescheduling the audits of non-public companies to better allocate human resources to AFs and LAFs appear to be perceived as the most effective strategies (best practices). We also note the vast majority of audits in our sample employed these techniques (note the low frequencies in the “Not Attempted” column for these strategies). Second, consistent with the notion that simply adding additional human resources would be an ineffective means of dealing with 10-K accelerations, we observe that ItAUDIT (increasing the number of IT audit specialists), MoreSTAFF (increasing the number of audit professionals on the engagement team, regardless of industry expertise), IndEXPERIENCE (increasing the number of audit professionals on the engagement team with expertise in the industry of the client), and OtherSPECIALISTS (increasing the number of other non-IT specialists on the engagement team) are all ranked in the bottom half of strategies. Also, all four of these strategies were not attempted by a large number (between 8 and 10) of our survey respondents.

Third, while increasing the audit fee to deal with the 10-K acceleration was attempted by most participants, more participants viewed the strategy on the “Not At All” side (10 participants) than the “To A Great Extent” side of the scale (7 participants). The previously mentioned human resource constraints may have made additional billing ineffective because few additional human resources could be acquired with the additional fees. Fourth, outsourcing or off-shoring of selected audit tasks was not used on sixteen engagements in our sample. This may be due to many participants viewing the strategy as less effective (note the rank of the strategy is 13th) or that, at the time of the 10-K accelerations, outsourcing was a less predominant practice (though it may be a means of relieving time pressure in the future). The low ranking could also indicate that year-end procedures are not the type of procedures that can be outsourced. Fifth, the use of computer assisted audit techniques (CAATS) was used by the vast majority of our respondents, but was deemed the least effective strategy. CAATS was the only strategy with a mean response that was significantly below the overall sample mean of 5.74 and ten participants responded on the “Not At All” side of the scale (vs. five were on the other side of the scale). Clearly, given the role IT systems (e.g., SAP, Oracle) play in the production of financial statements (e.g., Brazel & Dang, 2009), developing more effective CAATS and data analytics to alleviate time pressure represents a substantial opportunity for audit firms. Last, we received the following response when we asked participants if they employed any additional strategies to effectively deal with the time pressure caused by accelerations:

I don't know that there were ways to effectively deal with the time pressure other than to try to increase the “esprit de corps” through catering lunches and dinners, having more team meetings, making sure as the partner that you personally thanked the team members regularly and openly and trying to get as many out of the client's office as possible for some personal time whenever possible.

In sum, these quantitative and qualitative data from our survey analysis should inform audit teams charged with handling future

events or regulatory actions that place greater year-end time pressure on the audit team.²²

4.2.4. Exploratory analysis of survey data

Given our unique dataset of survey responses under PRESSURE, we perform an analysis examining bivariate correlations among our quantitative survey data (described in Tables 6 and 7). Given the exploratory nature of this analysis, future research can study the relations discussed herein using more focused and rigorous methods. Upon review of the correlations (not tabulated), two interesting patterns emerge from the survey data. In our setting, the benefit derived from shifting audit testing from year-end to interim (best practice InterimTESTING in Table 7) and the percentage of the partner's (respondent's) time working on the client (PercTIME in Table 6) appear to be crucial factors. For the engagements recalled by respondents, we observe that the value obtained from InterimTESTING to be positively associated with the effectiveness of interim and year-end procedures, as well as the overall audit and financial reporting quality perceived by the participant. InterimTESTING also appears to reduce the difficulty associated with resolving audit adjustments at year-end (two-tailed p -values < 0.10).

PercTIME is positively associated with client size (as one would expect) and appears to have a positive impact on all of our process and outcome variables related to audit/earnings quality (e.g., increasing the effectiveness of year-end audit procedures, decreasing difficulty associated with audit adjustments) (two-tailed p -values < 0.10). This supplements our archival findings related to LAFs vs. AFs and suggests that a primary way that audit firms were able to minimize the effect of time pressure on LAFs during deadline changes was to devote more partner hours to these larger engagements. This strategy could have had a negative impact on smaller, AF engagements as they may have suffered from a shortage of partner hours. In addition, it is interesting to note that PercTIME is negatively associated with the responding partner's level of industry expertise (IndEXPERIENCE in Table 6) and positively associated with the time they spent at the client's facilities (PercFAC in Table 6). Thus, spending more time on a given client/being present in the field appear to be effective ways of compensating for a lack of industry expertise, as well as a means of maintaining an acceptable level of audit quality in settings where PRESSURE exists. This finding complements other studies that highlight the importance of face-to-face interactions amongst members of the engagement team (e.g., Agoglia, Brazel, Hatfield, & Jackson, 2010; Dennis & Johnstone, 2016).

5. Conclusion

SEC rules 33-8128 and 33-8644 substantially reduced the 10-K filing period for large accelerated (LAFs) and accelerated filers (AFs) from 90 to 60 and 75 days, respectively (SEC 2002, 2005). We investigate the effects of this regulation by examining under what contexts 10-K filing accelerations have been associated with lower earnings quality. Our study's empirical archival evidence triangulates prior experimental and survey research examining the detrimental effects of audit time pressure. Also, qualitative data obtained from our survey of audit partners adds a rich context to our discussion of time pressure/audit quality and provides insights regarding best practices when post year-end audit time is reduced.

Overall, our findings provide support for claims by auditors and preparers that accelerations of 10-K filings have the capacity to

²² See Appendix E of the Online Appendix for analyses of strategies listed in Table 7 using available archival measures.

reduce the quality of financial information supplied to external users. However, these adverse effects appear to depend on the context of the acceleration. In particular, accelerations may be problematic if they mandate substantial reductions in audit delay and, in turn, induce time pressure on the audit engagement team at year-end. Conversely, if a 10-K acceleration does not impact a firm's audit delay, the effect on earnings quality is not significant. We also explore whether time pressure differentially affected AFs vs. LAFs, as well as the earnings quality of firms during the first (75 day deadline) vs. the second deadline change (60 day deadline). We observe a more negative effect of pressure on the earnings quality of AFs (relative to LAFs) and for the initial deadline change (relative to the second).

We use survey data to support our archival proxies and results. These data also illustrate that audit time pressure during accelerations increased the level of difficulty associated with resolving year-end financial statement adjustments. We also provide some "best practices" for ameliorating the effects of time pressure (e.g., increasing interim testing and rescheduling the audits of non-public companies), as well as some less effective methods (e.g., use of computer assisted audit techniques).

Given our findings and the current audit report dates of NAFs and AFs, regulators may want to exercise caution before accelerating 10-K filings for AFs and NAFs in the future. Overall, our archival and survey evidence should also be of considerable use to the SEC and foreign regulators if they consider further accelerations of financial statement reporting, as well as other future acts that may place additional year-end time pressure on audits.

Data availability

The archival data used in this study are publicly available from the sources indicated in the text. Contact the authors for access to the survey data used in this study.

Acknowledgements

We would like to thank Robert Bloomfield (editor), two anonymous referees, Rashad Abdel-Khalik, Philip Berger, Scott Bronson, Frank Buckless, Randy Elder, Pieter Elgers, Barbara Grein, Michelle Hanlon, Linda Hughen, Brad Lail, Elisa Lee, Kathleen Linn, Kevin Melendrez, Roger Meuwissen, Don Pagach, Mark Peecher, Gary Peters, Ray Pfeiffer, Marycobb Randall, Scott Richardson, Steve Salterio, Roger Silvers, Justin Vaughan, and workshop participants at the University of Illinois, University of Massachusetts, Virginia Tech University, North Carolina State University, Northern Illinois University, University of Wisconsin-Milwaukee, Texas Tech University, and Drexel University for their helpful comments. We also thank the four audit firms and the partners that completed our survey.

Appendix A. Online Appendix

Online Appendix related to this article can be found at <http://dx.doi.org/10.1016/j.aos.2017.03.003>.

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