The Information Content of 10-K and 10-Q Amendments

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Comments welcome. This is early-stage work and findings are subject to change.

Abstract

Amendments to Forms 10-K and 10-Q—filed as 10-K/As and 10-Q/As—occur in 12.8 percent of firm-years between 2004 and 2023. These SEC filings are largely overlooked as indicators of financial reporting quality because they often occur as a result of routine compliance updates or minor technical corrections, although they also include more substantive corrections. We find that firms issuing any 10-K/Q amendment are significantly more likely to misstate future financial statements. We use large language models (LLMs) to classify the 10-K/Q amendments according to whether the underlying correction appears more or less material. Amendments tied to more material issues are most predictive of future non-reliance restatements. These amendments complement, rather than substitute for, Audit Analytics data (considering both non-reliance restatements and immaterial error revisions), with an overlap of only 18 percent, growing the overall proportion of firm-year revisions from 6.9 percent to 17.4 percent. These findings extend existing frameworks of reporting quality and highlight amendments as a valuable information source.

Introduction

Amendments to 10-K and 10-Q filings—filed as 10-K/As and 10-Q/As—are a common but underexplored component of SEC filings, with approximately 10 percent of periodic filings subsequently amended, and 12.8 percent of firm-years having at least one 10-K/Q amendment. Because many amendments relate to compliance with formatting and filing requirements rather than corrections to financial information, most prior research on financial reporting errors and restatements relies on Audit Analytics as the primary data source.[1] We examine whether 10-K/Q amendments contain economically meaningful information about financial reporting quality, and if so, whether they offer a complement or substitute for traditional restatement data from Audit Analytics.

We assemble a comprehensive sample of all 10-K/A and 10-Q/A filings from EDGAR and use a combination of rules-based and large language models (LLMs) to classify each amendment according to its substantive focus. Our framework distinguishes between procedural updates—such as exhibit formatting or signature corrections—and amendments that are likely of greater informational relevance—such as revisions to financial statements and related disclosures; see Appendix C. We form four mutually-exclusive groups: major correcting amendments (34.4% of amendments and 4.4% of all firm-years), minor correcting amendments (33.4% of amendments and 4.3% of firm-years), other amendments including technical issues (22.0% of amendments and 2.8% of firm-years), and amendments with insufficient information to categorize (10.2% of amendments and 1.3% of firm-years). Specifically, we identify three primary indicators of serious

[1] We summarize the technical requirements that lead to amendments in Appendix A, and provide examples in Appendix B. Prior research recognizes that amendments of 10-Ks have the capacity to reflect financial reporting quality, but highlights challenges given the many reasons for amendments (e.g., Brown, Crowley, and Elliott 2020, footnote 13; Alsabah 2023, footnote 38). For example, a common amendment of 10-Ks stem from including Part III at a later date rather than filing a stand-alone proxy statement (e.g., DEF 14-A), as allowed by the SEC. 10-K/Q amendments also often occur to address other technical issues, such as updating XBRL tagging (e.g., Exhibit 101).

amendments that involve a major correction: (1) accounting-related corrections, (2) disclosure revisions pertaining to the financial statements or accompanying notes, and (3) disclosure revisions pertaining to internal controls. Among those amendments not classified as major, we identify four primary indicators of more minor corrections: (1) administrative errors, (2) minor disclosure corrections, (3) amendments filed to include separate financial statements of subsidiaries, (4) filing amendments just to provide executive signatures. Among the amendments that remain, we identify four primary indicators of more technical amendments. These amendments are filed : (1) to provide an Exhibit 101, (2) to provide Part III of the 10-K, (3), to include the external audit report, or (4) in response to SEC comment letters. The remainder of the amendments lack sufficient explanatory language to classify.

Notably, of the correction amendments (major and minor), only 22 percent correspond to the same firm-year for which a correction event was captured by Audit Analytics.[2] Audit Analytics does not attempt to capture the full range of errors contained in 10-K/A and 10-Q/A filings, focusing on material and immaterial error corrections that impact financial statement line-items.[3] Thus, amendments containing substantive financial reporting information may substitute or complement for corrections captured by Audit Analytics. We find that firm-years with correction amendments but without corresponding correction events in Audit Analytics tend to be smaller, less profitable, more highly levered, are more likely to disclose ineffective internal controls, are less likely to have Big 4 external auditors, and have poorer accruals quality.

[2] This percentage is lower than the 35 percent overlap of irregularity restatements in Brown et al. (2020) given our broader focus. The overlap with any amendment is even lower, at 18 percent.

[3] Audit Analytics applies text search filters to filings such as Forms 10-K, 10-Q, 8-K, and their amendments. Their keyword set includes terms like "restated," "error," "adjustment," "misstatement," and "correction," along with proximity-based rules (e.g., "adjust*" within 25 words of "prior period"). They classify disclosures flagged under Form 8-K Item 4.02 as "Big R" restatements and other corrections as "little r" restatements or out-of-period adjustments depending on materiality and language. Their process also incorporates reviews of audit opinions and SEC comment letters, but may miss amendments using nonstandard or indirect language to describe reporting issues.

To assess whether amendments are economically meaningful for assessing financial reporting quality, we first assess whether amendment filings—regardless of content type—are associated with future financial reporting corrections. We measure future reporting failures using Audit Analytics (future non-reliance restatements or any correction captured by Audit Analytics)[4] and future 10-K/Q correction amendments. Even before parsing amendments by type, we find strong evidence that they predict financial reporting corrections in the following year. Moreover, within the mutually-exclusive categories, although major correction amendments are the most predictive of financial reporting failures on a stand-alone basis, even procedural amendments are economically meaningful predictors of future restatements, and this predictive power persists after controlling for Audit Analytics filings.

We contrast this predictive power with corrections from Audit Analytics, noting that the overall explanatory power, on a stand-alone basis, is similar based on the degree to which amendments and corrections from Audit Analytics explain the area under the ROC curve. Finally, we demonstrate that the total explanatory power increases when we jointly consider both sources (amendments and Audit Analytics).[5] After controlling for "Big R"s, the predictive power of the newly-identified major correction amendments is the same as the "little r" revisions in Audit Analytics, on average, and encapsulates systematically smaller firms, allowing for a more comprehensive lens into financial reporting quality.

We view our key contribution to be the expansion of machine-readable external indicators of financial reporting quality.[6] As noted in Dechow, Ge, and Schrand (2010), a key benefit of using

[4] A large body of research documents that immaterial error corrections—particularly those disclosed as revisions or out-of-period adjustments—can predict future non-reliance restatements and immaterial error amendments (e.g., Choudhary, Merkley, and Schipper 2021; Tan and Young 2015; Myers, Scholz, and Sharp 2013).
[5] As an alternative, we confirm that 10-K/A and 10-Q/A filings provide incremental predictive power beyond already-flagged Audit Analytics corrections by dropping firm-years with a restatement, revision, or out-of-period adjustment identified by Audit Analytics (not tabulated).
[6] We plan to make this dataset publicly available following publication.

restatements to measure financial reporting quality is that they "unambiguously reflect accounting measurement problems (low Type I error rate)." Similarly, amendments are a discrete, time-stamped event - like restatements - that can be directly tied to a specific reporting period. This feature makes them more transparent and verifiable than broader, model-based proxies for reporting quality (such as accruals quality), which are less precise about the timing and nature of underlying problems. By broadening the scope of revisions beyond those captured by Audit Analytics, we expand the overall pie of revisions from 6.9 to 17.4 percent.[7]

We also introduce a novel application of LLMs to classify the content of amendment filings at scale, distinguishing between procedural and substantive revisions. Our approach enables more nuanced identification of error-related disclosures compared to rule-based datasets such as Audit Analytics and the more targeted approach of textual analysis used by Brown et al. (2020) to identify accounting manipulation. That many of the predictive amendments we identify are not captured by traditional restatement flags or keyword filters underscores the value of modern NLP tools for extending the frontier of disclosure research.

Institutional Background

Forms 10-K/A and 10-Q/A are the amendments to a previously filed annual or quarterly report on Forms 10-K and 10-Q. Amendments to 10K/Qs are used by U.S. public companies to correct, revise, or supplement disclosures or information contained in the original filings. These amendments are governed by a set of SEC rules, including Exchange Act Rule 12b-15, which mandates that amendments be filed under the same form type and must present the complete text of each amended item (Exchange Act Rule 12b-15, 17 C.F.R. § 240.12b-15).[8] The primary legal

[7] The 17.4 percent includes all incremental amendments. The pie expands from 6.9 to 13.6 percent if we consider only incremental correction amendments.

[8] Amended filings must include new certifications under Sections 302 and 906 of the Sarbanes-Oxley Act, just as original filings do (Sarbanes-Oxley Act §§ 302 and 906).

rationale behind these amendments is that companies have an obligation to ensure their reports are not misleading, which is reinforced by the requirement in Rule 12b-20 to include any additional material information necessary to prevent misstatements (Exchange Act Rule 12b-20, 17 C.F.R. § 240.12b-20).[9] Thus, the 10-K/A and 10-Q/A serve a critical compliance function, helping companies fulfill their duty to maintain accurate, complete, and reliable disclosures for investors and regulators alike.

Companies file 10-K/A and Form 10-Q/A amendments under a range of circumstances defined by SEC rules and interpretive guidance. The most prominent scenario occurs when a company identifies a material misstatement in its previously issued financial statements. In such cases, the firm is required to file a Form 8-K under Item 4.02, stating that investors should no longer rely on those financials. This "Big R" restatement must then be followed by an amended 10-K/A or 10-Q/A that restates the affected periods and includes updated disclosures, a revised audit opinion, and new CEO/CFO certifications under Sections 302 and 906 of the Sarbanes-Oxley Act.

For immaterial errors, the SEC gives management more discretion. If the error is not material to any prior period and correcting it in the current period would not distort current-period results, the company may make an out-of-period adjustment without filing an amendment. However, if the cumulative effect of prior-period errors would materially distort current results, the firm is expected to correct the errors through revised comparative financials, often in the next 10-K or 10-Q. While a standalone 10-K/A or 10-Q/A is not strictly required in these cases, many firms choose to file one for completeness and clarity. These types of immaterial corrections are

[9] Exchange Act Rule 12b-20 states that "In addition to the information expressly required to be included in a statement or report, there shall be added such further material information, if any, as may be necessary to make the required statements, in the light of the circumstances under which they are made not misleading."

often referred to as "little r" restatements or revisions (Choudhary et al. 2021; see also Hogan and Jonas 2016 and Tan and Young 2015). In each case, the appropriate disclosure mechanism is guided by the materiality of the error and its impact on users of the financial statements, consistent with the principles in SAB No. 99 and SAB No. 108 (SEC 1999; SEC 2006).[10]

Amendments may occur when previously filed reports are incomplete. The most common 10-K amendment relates to details on executive compensation, director qualifications, and audit fees (Form 10-K General Instruction G(3); Regulation S-K Items 10–14).[11] The information is required within 120 days of fiscal year-end and can be provided through a standalone proxy statement (e.g., Def14-A) or through an amendment of the 10-K where this information in added as Part III. Similarly, if a company omits a required exhibit—such as officer certifications under SOX, an auditor consent, or financial statements of a recently acquired business—the SEC generally requires an amended filing to correct the omission (Regulation S-K, Item 601). In many cases, these amendments follow correspondence with the SEC, for example if the request to redact certain information is denied. In other instances, staff identify a material omission or procedural error and instruct the issuer to file a revised report to bring the filing into compliance (SEC Division of Corporation Finance, Comment Letter Process). Appendix A summarizes the circumstances in which an amendment to a 10-K or 10-Q would be triggered.

In short, firms file 10-K/As and 10-Q/As either to correct material or immaterial misstatements, supply previously omitted disclosures, or comply with SEC review findings. The process is governed primarily by Exchange Act Rules 12b-15 and 12b-20, which require

[10] The principles in SAB No. 99 and SAB No. 108 establish that materiality must be assessed using both quantitative and qualitative factors, and that errors should be corrected if they are material under either a period-specific (rollover) or cumulative (iron curtain) approach. These standards, together with SEC Rule 33-8400 and Item 4.02 of Form 8-K, provide the framework for determining whether a misstatement warrants a "Big R" restatement or can be addressed through a revision or out-of-period adjustment. For a detailed timeline of the evolution of this authoritative guidance, see Choudhary et al. (2021).

[11] https://blog.auditanalytics.com/reasons-for-an-amended-10-k-2019/

amendments to be filed under the same form designation and to include all additional information needed to ensure the filing is not misleading. The SEC's detailed instructions for Forms 10-K and 10-Q, along with interpretive guidance in the Financial Reporting Manual, Staff Accounting Bulletins, and Compliance & Disclosure Interpretations, provide the framework that shapes amendment practices among publicly traded companies.

Related Literature

A growing body of research investigates the prevalence and implications of revisions deemed immaterial to prior financials and corrected without triggering a formal 8-K restatement. Starting around 2004 and accelerating after 2008, immaterial error corrections—commonly disclosed through revisions ("little r" restatements) or out-of-period adjustments—have become increasingly common (Choudhary, Merkley, and Schipper 2021; Tan and Young 2015). In contrast, material non-reliance restatements ("Big R"), which require an 8-K and full reissuance of prior statements, have declined over the same period. Between 2005 and 2012, the share of restatements not disclosed via 8-K rose from under 40 percent to over 60 percent (Hogan and Jonas 2016), prompting concern over the transparency of "stealth restatements" (McKenna 2012; Files et al. 2009).

Studies attribute this shift to several factors: firms' desire to avoid the reputational and contractual consequences of formal restatements (e.g., negative stock reactions, auditor opinion revisions, executive clawbacks); the subjective nature of materiality judgments (Acito, Burks, and Johnson 2009); and SEC guidance clarifications (e.g., SAB 108, Mahar 2008). These immaterial corrections are often disclosed in subsequent periodic filings (10-K or 10-Q), with limited narrative detail, making them less visible to investors and regulators than 8-K restatements (Choudhary et al. 2021; Hogan and Jonas 2016).

A consistent theme in this literature is the predictive value of immaterial errors. Even when small, these corrections serve as leading indicators of future financial reporting problems—including future restatements, internal control weaknesses, and SEC comment letters (Choudhary et al. 2021; Myers et al. 2013). These leading indicators are incremental to standard measures of reporting quality, such as accruals-based models or audit firm characteristics.

Importantly, prior studies have largely focused on misapplications of GAAP or numerical misstatements, as captured by the Audit Analytics database, which only codes misreporting events that affect line items on the face of the financial statements. As a result, these databases typically overlook errors of omission—for example, missing disclosures about internal controls or financial statements—as well as inconsistencies in accounting policy descriptions, or corrections to governance and compliance information that do not alter the reported numbers but nonetheless signal lapses in reporting quality. Because our dataset uses full-text analysis of 10-K/As and 10-Q/As, it captures a broader range of corrections, including revisions not flagged by Audit Analytics. This distinction is crucial: many amendments are not captured in existing datasets yet may still be predictive of future reporting failures.

Consistent with this, Brown et al. (2020) use topic modeling and find that the narrative content of 10-K/A filings can flag misreporting risk. They analyze 697 misreported filings from 1994–2012 and find that amendments contain useful information, but do not categorize amendment types or test their predictive value for future restatements. Our study differs by classifying the full universe of 10-K/A and 10-Q/A filings and linking specific amendment content to future reporting failures. Alsabah (2023) considers how the acceleration of filing deadlines impacts financial reporting quality as measured by non-reliance restatements and 10-K/As. They do not consider the underlying reason for the 10-K/A but do find notably stronger results for

amendments than non-reliance restatements consistent with rushed deadlines contributing to corrections that may not reach the level of requiring an 8-K disclosure.

Categorizing Amendments

We begin by scraping the full population of Form 10-K/A and 10-Q/A filings from the SEC's EDGAR database, covering the period from 1993 through 2023. This yields over 89,000 amendment filings, which we then map to firm-year observations in Compustat. To be included in our classification sample, an amendment must contain an explanatory note describing the reason for the filing. Applying this filter results in a final classification sample of 50,666 amendments.

To identify the purpose and content of each amendment, we develop a hybrid classification framework that integrates large language model analysis with deterministic rule-based logic. The goal is to assign each amendment to one or more of 11 predefined categories that reflect common amendment types, such as accounting errors, disclosure modifications, internal control updates, or the inclusion of previously omitted exhibits (see Appendix C for full category definitions, keyword rules, and example classification prompts).

Our classification process proceeds in three stages:

1. **Note Summarization**: For each amendment, we generate a concise summary of the explanatory note using a GPT-based language model. This summary distills the main reason for the amendment and serves as a normalized input for downstream classification steps.

2. **Hybrid GPT-Based Classification:** Our core classification procedure uses GPT-4o to assign each amendment to one or more categories based on the full explanatory note. This step integrates three sources of input:

1. *Supervised Model Signal:* We first fine-tune a RoBERTa-based transformer model on approximately 1,255 manually labeled summaries. While we do not use this model's outputs directly, its predictions are embedded in the GPT-4o prompt as a reference signal. This helps anchor the model's judgment while still allowing it to override or refine the suggestions based on the full note context.
2. *Rule-Based Logic:* We also apply deterministic keyword-based rules to the GPT-generated summaries. These rules map common phrases (e.g., "XBRL," "Items 10–14," "material weakness") to corresponding categories. These are either fed into the GPT prompt or used as validation checks against GPT's classification.
3. *LLM Reasoning:* GPT-4o then performs multi-label classification using zero-shot reasoning, interpreting the full note in context and returning both predicted categories and explanatory text. By incorporating both rule-based signals and predictions from a fine-tuned supervised model directly into the GPT prompt, we increase classification consistency while preserving GPT-4o's flexibility to interpret the full note text.

3. **Evaluation and Reclassification:** The results from both methods are merged and evaluated through a second GPT pass. Each classified note is reviewed to assess whether the category assignments are *reasonable*, *ambiguous*, or *not reasonable*. Notes flagged as *not reasonable* are reclassified using a revised prompt, and a final quality-control pass includes manual spot checks to validate overall accuracy and consistency.

This approach allows us to reliably distinguish between major corrections (e.g., those disclosing accounting errors or changing disclosures related to financial statements or internal control effectiveness), minor corrections, and procedural amendments (e.g., missing signatures or

formatting changes). The classification system is designed for scalability, interpretability, and robustness, and enables detailed empirical analyses of amendment content at scale.

Sample Selection and Composition

Table 1, Panel A presents the sample selection process for amendment filings. We start by scraping 89,655 Form 10-K/A and 10-Q/A filings from EDGAR between 1993 and 2023. We first remove 35,454 amendments that cannot be mapped to Compustat. We then exclude 22,771 amendments filed for fiscal years prior to 2004 or after 2023 to align with the beginning of non-reliance restatement coverage available in Audit Analytics.[12]

Table 1, Panel B provides descriptive evidence on the volume and content of Form 10-K/A and 10-Q/A filings over time. We begin with the number of amendments filed each year, followed by the percentage of these amendments with explanatory language, which offer a textual justification for the amendment that we use for amendment type classification. The availability of explanatory language was less than 20 percent in 2001 (not tabulated) and reached 65 percent by the start of our sample period, increasing to over 95 percent in recent years.[13] The final column contains the number of firm-years with at least one amendment.

Table 1, Panel C disaggregates filed amendments by year and by the specific amendment categories used in our classification. Categories are not mutually-exclusive, and thus the total far exceeds the number of amendments in Panel B. The most common categories across the full sample are disclosures related to the financial statements (7,537 firm-years), accounting errors

[12] By beginning in 2004, we are also able to control for the existence of material weaknesses in our analyses and as we discuss later, explanatory language is more commonplace. Inferences are similar if we include earlier years and/or exclude material weaknesses as a control variable (not tabulated).

[13] This rise coincides with heightened regulatory scrutiny following the Sarbanes-Oxley Act of 2002 and evolving expectations around disclosure clarity. Although Exchange Act Rule 12b-15, adopted in 1995 (via Release No. 34-36345), established the requirement that amended filings must present the complete text of amended items and clearly identify any changes, firms did not consistently comply via standalone explanatory notes within amendments until later. The use of explanatory notes became standard practice in the 2000s, presumably driven by increasing SEC oversight, audit firm guidance, and improvements in EDGAR searchability.

(6,065), administrative errors (5,228), and Part III information (5,059). Amendments related to missing or revised Exhibit 101 (3,372), external audit reports (2,805), and responses to SEC comments (2,297) also represent meaningful shares of activity. Less frequent categories include separate financial statements (1,279) and stand-alone CEO/CFO certifications (425).

The annual breakdown shows shifts in amendment composition over time. For example, Exhibit 101-related amendments surge in 2011–2012, coinciding with the SEC's phased implementation of XBRL requirements (Release No. 33-9002, 2009), while Part III amendments appear regularly throughout the sample period. This temporal and categorical variation underscores that amendments arise from a range of compliance and substantive triggers, with some categories tied to regulatory changes and others reflecting ongoing reporting corrections.

In all subsequent tables and analyses, if there is more than one amendment type in a given year (either within the same amendment or across amendments), we consider only the most severe category (e.g., a major correction if present, see Appendix C for more information). This simplifies comparisons and analyses by collapsing Table 1, Panel C into 19,842 mutually-exclusive amendment firm-years. We similarly collapse Audit Analytics filings, retaining a non-reliance restatement categorization if more than one type of revision is filed in the firm-year.[14]

Table 2, Panel A compares the incidence of amendment filings in our Compustat firm-year sample (2004–2023) with error-related (i.e., "Big R" and "little r" restatements) disclosures tracked by Audit Analytics. The first column reports the total number of firm-years with each type of amendment (correcting, procedural and no explanation). The next two columns split these into (i) amendment firm-years not appearing in Audit Analytics and (ii) amendment firm-years that also

[14] Although we believe this allows for an easier comparison of events, we recognize that the number of events is also useful and plan to capture this feature in a future draft. Also note that to the extent the amendments and Audit Analytics filings capture different information, we are also understating the potential information in 10-K/Q amendments.

appear in Audit Analytics. The next two columns report the inverse overlap: (i) firm-years with an Audit Analytics filing but no amendment, and (ii) firm-years with either an amendment or an Audit Analytics filing. The final two columns show firm-years with neither source of disclosure and the total number of firm-years in the sample, respectively.

The first panel row shows that of 155,353 total firm-years, 19,842 (12.8 percent) have at least one amendment filing, 10,696 (6.9 percent) have at least one Audit Analytics filing, and 26,991 (17.4 percent) have either an amendment or an Audit Analytics filing. Only 17.9 percent of the amendment firm-years also have an Audit Analytics filing (3,547/19,842 = 0.179). The breakdown of amendment types demonstrates that even among the amendments classified as *correcting amendments* (13,443 firm-years), only 2,964 or 22.0 percent also have an Audit Analytics filing in the same firm-year.

The bottom rows show the Audit Analytics categories: 2,715 firm-years with a *restatement* ("Big R") flag and 7,981 with an *immaterial error* ("little r") flag. While there is some overlap between these datasets, the table demonstrates that a large share of amendment firm-years are not reflected in Audit Analytics, highlighting the distinct and complementary nature of the amendment data.

Figure 1 plots the frequency of (mutually-exclusive) amendment categories and Audit Analytics filings from 2004–2023. In the top panel, *major corrections* peak in 2005 and then decline steadily, mirroring the sharp drop in *restatements* (Big R) shown in the bottom panel. *Minor corrections* follow a hump-shaped pattern, rising through the early 2010s and tapering off after 2015, closely resembling the trajectory of Audit Analytics *immaterial errors* (little r). *Procedural amendments* show a distinct spike around 2011–2012, consistent with XBRL adoption, and amendments with insufficient information decline over time. The alignment of major corrections

with restatements and of minor corrections with immaterial errors underscores that amendment data track similar broad trends in error disclosure, while still capturing substantial non-overlapping activity.

Descriptive Statistics

Table 3, Panel A reports descriptive statistics for the pooled firm-year sample from 2004–2023. On average, 12.8 percent of firm-years contain at least one amendment filing, with correcting amendments accounting for 8.7 percent. Major and minor correcting amendments occur with similar frequency (4.4 and 4.3 percent, respectively), while procedural amendments appear in 2.8 percent and amendments with insufficient explanatory information in 1.3 percent of firm-years.

Audit Analytics captures 6.9 percent of firm-years as having either a restatement (1.7 percent) or immaterial error (5.1 percent). These rates are slightly lower than the frequency of Big R and little r corrections documented in prior studies (e.g., Files et al. 2009; Choudhary et al. 2021) because we aggregate events at the firm-year level, and only classify little r corrections as equal to one if there was not a Big R correction in that firm-year. The overlap with our amendment-based measures is incomplete, consistent with the idea that amendments capture additional disclosure events beyond those in Audit Analytics. Moreover, the overlap is an upper bound, as some amendments capture different underlying corrections than what is captured by Audit Analytics.

Table 3, Panel B compares firm characteristics for two mutually exclusive groups: (i) firm-years with an Audit Analytics (AA) filing (n = 10,696) and (ii) firm-years with a correcting amendment but no AA filing (n = 10,479). The first set reflects the disclosures traditionally captured in restatement and immaterial error datasets, while the second set represents "incremental" amendment-based observations that fall outside AA's coverage.

By construction, AA firm-years are more likely to have *Restate* (25 percent) or *ImmError* (75 percent) flags, while incremental correcting amendment firm-years have none. Incremental firm-years show a 100 percent incidence of *Amend* and *CorrectingAmend* by design, with a substantially higher frequency of both *MajorCorrectingAmend* (42 percent versus 22 percent for AA firm-years) and *MinorCorrectingAmend* (58 percent versus 5 percent for AA firm-years).

The two groups also differ in firm fundamentals. AA firm-years tend to be larger (mean total assets \$7.7B versus \$4.0B; Size = 6.38 versus 5.07) and more likely to have a Big 4 auditor (74 percent versus 48 percent). Incremental amendment firm-years have higher loss incidence (51 percent versus 39 percent), lower earnings performance (-1.10 versus -0.10), are more leveraged (0.61 versus 0.26), and have fewer accruals map into cash flows (0.07 versus 0.04). Most differences are economically large and statistically significant at the 1 percent level, consistent with amendment-based corrections allowing us to capture a systematically different set of firms from those appearing in AA datasets.

These patterns reinforce that focusing solely on Audit Analytics data omits a sizable population of disclosure events, particularly minor correcting amendments, associated with smaller, more levered, and lower-performing firms.

Table 4 reports Pearson correlations among amendment variables, Audit Analytics indicators, forward-looking measures, and firm characteristics. The correlation between amendments and Audit Analytics filings is the strongest (0.37) between major correcting amendments and Big R Audit Analytics restatements ($Restate_t$). The near-zero correlations between other amendment categories and $Restate_t$ indicates that the two datasets capture partially distinct events.[15] Forward-looking measures are positively correlated with their current-period

[15] Weaker associations may also reflect the mutually-exclusive categorization. We will explore this further in future drafts. This caveat extends to all univariate associations of lower-order amendments and revisions.

counterparts, and $Amend_t$ is positively associated with future restatements ($Restate_{t+1}$ = 0.06) and future Audit Analytics filings ($AAFiling_{t+1}$ = 0.07), suggesting that amendment activity can signal elevated risk of subsequent reporting issues. Minor correction amendments and procedural amendments are notably more associated with future correcting amendments (0.10 and 0.06, respectively) than future Audit Analytics-captured corrections, which vary between 0.01 and 0.02.

All amendments and Audit Analytics filings are positively correlated with material weaknesses. Amendments are more common among smaller, less profitable, and more levered firms, as reflected in negative correlations with *Size*, *LnAssets*, and Big 4 auditor status, and positive correlations with losses and leverage. Restatements, on the other hand, are notably less correlated with size, positively correlated with earnings, and negatively correlated with leverage. Overall, the correlations indicate that amendment data and Audit Analytics each identify unique subsets of disclosure events, with amendment activity concentrated among a different segment of the public firm population.

Amendments and Future Financial Reporting Corrections

To examine the ability of amendments to predict future reporting events, we estimate the following OLS regression[16]:

$$\begin{aligned} Filing_{t+1} = \; & \alpha_0 + \alpha_1 Amend_t + \alpha_2 MatWeak_t + \alpha_3 Big4_t + \alpha_4 Size_t + \alpha_5 BTM_t \\ & + \alpha_6 Loss_t + \alpha_7 Earn_t + \alpha_8 Lev_t + \alpha_9 Acquisition_t + \alpha_{10} CapRaise_t \\ & + \alpha_{11} Intangibles_t + \alpha_{12} CapEx_t + \Sigma\alpha YearFE + \Sigma\alpha IndustryFE + \varepsilon \end{aligned} \quad (1)$$

where $Filing_{t+1}$ is an indicator variable equal to one if the firm files a future reporting correction during the following fiscal, and zero otherwise; we describe the alternative dependent variables

[16] We estimate equation (1) using OLS rather than logit or probit for two reasons. First, the linear probability model yields coefficients that can be directly interpreted as percentage point changes in the likelihood of the event and is consistent with prior studies on restatements and related reporting outcomes. Second, our specification includes high-dimensional year and industry fixed effects; in nonlinear models such as logit or probit, the inclusion of many fixed effects can lead to the incidental parameters problem, producing biased and inconsistent estimates. Our inferences are robust to using logit models without high-dimensional fixed effects, but we report OLS estimates for interpretability and to avoid incidental parameter bias (not tabulated).

we consider below. $Amend_t$ is an indicator variable equal to one if the firm files an amendment during the fiscal year, and zero otherwise. Following Choudary et al. (2021), we control for other determinants of future reporting events. We include an indicator for material weaknesses (*MatWeak*), an indicator if the firm is audited by a Big 4 auditor (*Big4*), firm size (*Size*), the ratio of book-to-market (*BTM*), an indicator if the firm recognizes a loss (*Loss*), financial performance (*Earn*), leverage (*Lev*), an indicator for significant acquisition activity (*Acquisition*), an indicator for significant capital raised (*CapRaise*), intangible spending (*Intangibles*), and capital expenditures (*CapEx*). All models include year and industry fixed effects, and standard errors are clustered by firm.

Table 5 examines whether amendment activity in year *t* predicts future reporting events in year *t+1*, focusing first on Audit Analytics outcomes (Panel A) and then on amendment persistence (Panel B). Panel A relates amendment classifications to the probability of a future Big R restatement ($Restate_{t+1}$) or any Audit Analytics filing ($AAFiling_{t+1}$). Across specifications, amendment indicators are positively and significantly associated with subsequent AA events. Firms with any amendment in year *t* are 1.2 percentage points more likely to have a restatement and 3.4 percentage points more likely to have any AA filing in the following year. Restricting to *CorrectingAmend* yields slightly larger effects (1.5 and 3.8 percentage points, respectively), with *MajorCorrectingAmend* producing the largest coefficients (2.6 and 5.2 percentage points). *MinorCorrectingAmend* is also significant, though smaller in magnitude, while procedural amendments are positive predictors and amendments with insufficient information are unrelated to future AA outcomes. Control variables load largely as expected, and similar to the univariate correlations in Table 4. For example, material weakness disclosures, acquisitions, and capital raising are strong positive predictors, while leverage is negatively associated. That we observe a

positive and significant coefficient on *Big4* is consistent with some form of endogeneity in the dependent variable, either in Audit Analytics' collection procedures or in whether and how *Big4* clients correct financial statements. Ultimately, this further illustrates that, the predictive relations are conservative, as Audit Analytics does not cover the full universe of public firm corrections, meaning some future restatements and revisions are not captured in the dependent variable.

Table 5, Panel B shifts the focus to amendment persistence, using dependent variables for future correcting amendments ($CorrectingAmend_{t+1}$) and a combined measure of a future correcting amendment or AA filing ($CorrectingAmend_{t+1}$ *or* $AAFiling_{t+1}$). Amendment activity in year *t* is strongly associated with subsequent amendment events: any amendment predicts a 10.4 percentage point increase in the likelihood of a correcting amendment in the following year and a 12.2 percentage point increase in the combined outcome. The effects are slightly larger for *CorrectingAmend* (11.7 and 13.5 percentage points) and are similar in magnitude for *MajorCorrectingAmend* and *MinorCorrectingAmend*. Procedural amendments and amendments with insufficient information also predict future amendments, albeit with smaller coefficients. As in Panel A, the presence of a material weakness, an acquisition, and capital raising are strong positive predictors, while Big 4 auditor status is negatively associated with future correcting amendments (columns 1–3) but positively associated with the combined outcome (columns 4–6).[17]

Taken together, the results from both panels indicate that amendments, particularly those classified as major correcting, contain information about future reporting issues beyond traditional predictors and beyond what is captured in Audit Analytics. Amendment activity is not only a

[17] To the extent that the filings collected by Audit Analytics are subject to endogeneity, this suggests that Big 4 auditors reduce the likelihood of future corrections and suggests that examining a broader measure of corrections could impact the inferences of archival studies of audit quality.

contemporaneous signal of disclosure problems but also a persistent marker of elevated reporting risk, with predictive value for both restatements and future amendment filings.

Comparing the Predictive Power of Amendments and Audit Analytics Indicators

Table 6 provides a benchmark by examining the extent to which contemporaneous AA indicators predict future AA outcomes. Consistent with prior work (e.g., Choudhary, Merkley, and Schipper 2021; Tan and Young 2015), we find that current-period AA filings strongly forecast subsequent AA events. A contemporaneous AA filing is associated with a 2.4 percentage point increase in the likelihood of a future restatement and an 11 percentage point increase in the likelihood of any future AA filing. Both restatements and immaterial errors persist, with each significantly forecasting the same type of disclosure in the subsequent year. These results highlight the strong persistence of AA-based measures and provide a benchmark for evaluating the incremental predictive power of amendments, which we turn to in the next table.

Table 7 compares how well amendment-based measures and contemporaneous AA indicators predict future reporting problems. The dependent variables are the probability of a future Big R restatement ($Restate_{t+1}$, columns 1–3) and the probability of any future AA filing ($AAFiling_{t+1}$, columns 4–6). Each specification includes firm-level controls and year and industry fixed effects. Standard errors are again clustered by firm.

Current-period AA variables are, as expected, strong predictors of future AA outcomes: a contemporaneous AA filing is associated with a 10.6 percentage point higher likelihood of any AA filing in the next year, and current restatements and immaterial errors are both economically significant predictors. However, amendments retain significant predictive power even after controlling for these variables. For example, any amendment (*Amend*) predicts a 0.9 percentage point increase in future restatement probability and a 2.1 percentage point increase in the

probability of any AA filing. *CorrectingAmend* yields similar coefficients, and *MajorCorrectingAmend* is the strongest among amendment categories for predicting future restatements (1.5 percentage points) and AA filings (2.2 percentage points). Procedural amendments also continue to significantly predict both outcomes, while minor correcting amendments predict future AA filings but not restatements, and amendments with insufficient information remain insignificant. A test of coefficient differences in column 3 indicates that major correcting amendments and immaterial errors are equally predictive of future restatements.

The fact that amendment coefficients remain positive and statistically significant alongside large AA predictors corroborates our earlier evidence that amendments capture incremental information about future financial reporting misstatements that is not reflected in contemporaneous AA data. This aligns with earlier evidence that Audit Analytics does not cover the full universe of firms or disclosure events, implying that relying solely on AA measures understates the existence and persistence of reporting issues.

Conclusion

Our findings reveal that 10-K and 10-Q amendments—generally perceived as largely administrative—offer a rich and underutilized source of information about financial reporting quality. By applying large language models to the full population of amendment filings, we uncover a substantial subset that relate to meaningful corrections. These correction amendments, which are often missed by traditional datasets like Audit Analytics, meaningfully predict future restatements and revisions.

More broadly, this work highlights the importance of moving beyond traditionally studied errors—such as Big R and little r restatements—to examine amendment filings. We build on and extend the early work on 10-K amendments by Brown et al. (2020) and Alsabah (2023) by

categorizing all 10-K and 10-Q amendments into 11 sub-categories to form correction and procedural amendments, both of which predict future restatements, even after controlling for Audit Analytics filings occurring in the same year.

We grow the overall pie of machine-readable corrections from 6.9 percent using Audit Analytics to 13.6 (17.4) percent when considering correction amendments (all amendments). Moreover, this expansion encompasses systematically smaller firms, and may mitigate the endogeneity concerns of relying on commercial datasets, expanding the empirical lens on financial reporting reliability.

References

Acito, A., Burks, J. J., and Johnson, W. B. (2009). Materiality decisions and the correction of accounting errors. *The Accounting Review*, 84(3), 659–688.

Alsabah, K. (2023). The 15-day debate and the value of early release of information: Evidence from 10-K filings. *Journal of Accounting and Public Policy*, *42*(1), 107019.

Brown, N. C., Crowley, R. M., and Elliott, W. B. (2020). *What are you saying? Using topic to detect financial misreporting*. *Journal of Accounting Research*, 58(1), 237–291.

Choudhary, P., Merkley, K., and Schipper, K. (2021). Immaterial error corrections and financial reporting reliability. *Contemporary Accounting Research*, 38(3), 1671–1706.

Files, R., E. Swanson, and S. Tse. 2009. Stealth disclosure of accounting restatements. The Accounting Review 84 (5): 1495–1520.

Hogan, B., and Jonas, G. (2016). The association between executive pay structure and the transparency of restatement disclosures. *Accounting Horizons*, 30(3), 307–323.

Mahar, M. 2008. December 8, 2008 speech by Associate Chief Accountant. Available at: https://www.sec.gov/news/speech/2008/spch120808mm.htm

McKenna, F. 2012. Is the SEC's Ponzi crusade enabling companies to cook the books, Enron-style? Forbes (November 5): https://www.forbes.com/sites/francinemckenna/2012/10/18/is-the-secs-ponzi-crusade-enabling-companies-to-cook-the-books-enron-style/

Myers, L. A., Scholz, S., and Sharp, N. Y. (2013). Restating under the radar? Determinants of restatement disclosure choices and the related market reactions. *Review of Accounting Studies*, 18(3), 715–751.

Securities and Exchange Commission. (2025, March 24). *EDGAR Filer Manual: Volume I – General Information* (Version 42) and *Volume II – EDGAR Filing* (Version 74).

SEC (1999). Staff Accounting Bulletin (SAB) No. 99 – Materiality.

SEC (2006). Staff Accounting Bulletin (SAB) No. 108 – Considering the Effects of Prior Year Misstatements.

Tan, H., and Young, M. (2015). An analysis of the market reaction to disclosures of immaterial misstatements. *The Accounting Review*, 90(6), 2203–2232

Appendix A. Amendment Classification Flowchart

Trigger/Circumstance	Key SEC Rules/Guidance	Required Action
Material error in financials ("Big R" restatement)*	Exchange Act Rules 13a-1/13a-13 (must file GAAP-compliant reports); SAB 99 (materiality of errors); SAB 108; Office of Chief Accountant Statement (Mar. 2022); Form 8-K Item 4.02 (non-reliance notice)	**File Form 10-K/A or 10-Q/A to restate and correct prior financial statements.** Include full restated financials, explanatory disclosure of the error, and new SOX 302/906 officer certifications. Also file an 8-K (Item 4.02) to alert the market of non-reliance on prior statements.
Immaterial prior error ("little r" revision)	SAB 108 (dual approach for errors); OCA Statement (2022) (defines little r restatements)	No immediate amendment required – correct the error in the next Form 10-Q or 10-K by restating prior-period comparative figures with disclosure (the prior filings remain relied upon as originally not materially misstated). Ensure transparency about the correction in MD&A/footnotes.
Omitted Part III of Form 10-K (in lieu of proxy filed within 120 days)	Form 10-K General Instruction G(3); Exchange Act Rule 12b-23; C&DI Question 104.09	**File Form 10-K/A with the Part III information** (e.g. director/officer bios, executive compensation, etc.) no later than 120 days after fiscal year-end. This amendment will contain the full Part III items that were originally omitted. (If the proxy is eventually filed late, the information would already have been provided in the 10-K/A.)
Missing exhibits or certifications (e.g. SOX 302/906, consents)	Exchange Act Rule 13a-14 (officer certifications required); Reg S-K Item 601 (required exhibits); Exchange Act Rule 12b-15 (amendment must include new certs); FRM 4310.1 (deficient filing if ICFR reports missing)	**File Form 10-K/A or 10-Q/A to include the missing material.** For a missing officer certification, attach the properly signed certification as an exhibit in the amendment (and include updated ones for both CEO/CFO as required). For a missing exhibit or consent, attach the exhibit with a revised exhibit index. The amendment's cover page and explanatory note should state that it's being filed to add the omitted exhibit or certification.
SEC comment letter leads to amendment	Exchange Act Rule 12b-20 (must add material info to avoid misleading); SEC Division of Corp Fin comment process (informal guidance); company's agreement via response letter	**If staff explicitly requests an amendment** (e.g., "Please amend your Form 10-K to include…") – **file a Form 10-K/A or 10-Q/A** addressing the staff's comments and correcting the disclosure. If staff allows future correction (comment resolved with promise to revise later), an amendment may not be required.

Other omissions/deficiencies identified post-filing	Exchange Act Rule 12b-20; specific form or Reg S-X requirements (e.g., S-X 3-09 separate F/S by amendment, Schedule II, etc.); SAB 99 (if omission renders info misleading)	Depends on materiality: **If the omitted information is required or necessary for completeness** (e.g., a required financial schedule, a significant subsequent event, a material change in governance that should have been disclosed), **the company should file an amendment to add it.** Minor items can be fixed in the next report, but material omissions require a 10-K/A or 10-Q/A promptly once discovered. For example, if separate financial statements of a significant investee were not included in the 10-K, file a 10-K/A within the allowed timeframe to include them.
*Footnote: Audit Analytics captures "Big R" restatements disclosed via an Item 4.02 Form 8-K and "little r" revisions made in subsequent periodic reports, including 10-K and 10-Q amendments, that result in changes in financial statement line-items.		

Appendix B. Examples of Amendments not Captured in Audit Analytics

Example 1
Company: ANR Pipeline
CIK: 65695
Reporting Period: FYE 12/31/2002
Date Amended: 06/20/2003
Reason: Revision to internal control disclosure
URL:
https://www.sec.gov/Archives/edgar/data/65695/000095012903003261/h06611e10vkza.txt

This Amendment on Form 10-K/A constitutes Amendment No. 1 to our Annual Report on Form 10-K for the fiscal year ended December 31, 2002, which was previously filed with the Securities and Exchange Commission (SEC) on March 27, 2003 (the Annual Report). We are amending the disclosure set forth in Item 14 of the Annual Report in its entirety.

This Amendment only amends Item 14 of the Annual Report as specified above. It does not affect the original financial statements and footnotes filed in the Annual Report and does not reflect events occurring after the original filing date of March 27, 2003.

Example 2
Company: CECO Environmental Corporation
CIK:3197
Reporting Period: 12/30/2008
Date Amended: 09/25/2009
Reason: Revision to internal control disclosure
URL: https://www.sec.gov/Archives/edgar/data/3197/000119312509198242/d10ka.htm

This Amendment No. 1 to Annual Report on Form 10-K/A is being filed to amend Item 9A of Part II of the Annual Report on Form 10-K for the fiscal year ended December 30, 2008 (the "Form 10-K") filed with the Securities and Exchange Commission by CECO Environmental Corp. (the "Company") on March 16, 2009. This Amendment No. 1 is being filed solely for the purpose of (i) including a clear definitive statement disclosing management's conclusion on the effectiveness of the Company's internal control over financial reporting as of the end of the fiscal year, and (ii) correcting an inadvertent omission of the statement that our registered public accounting firm had issued an attestation report on the Company's internal controls over financial reporting.

Further, as required by Rule 12b-15 under the Securities Act of 1934, as amended, new certifications by our principal executive officer and principal financial officer are being filed as exhibits to this Form 10-K/A under Item 15 of Part IV hereof. Except as noted above, the amendment does not modify or update the disclosures contained in the original Form 10-K to reflect events that occurred at a later date. Accordingly, this Amendment should be read in conjunction with the Company's SEC filings made subsequent to the original filing.

Example 3
Company: Albertson's Inc

CIK: 3333
Reporting Period: 2/03/2005
Date Amended: 04/14/2005
Reason: Revision to operating lease disclosure
URL:
https://www.sec.gov/Archives/edgar/data/3333/000095012405002399/v07834a1e10vkza.htm

Albertson's, Inc. is filing this amended Form 10-K for the fiscal year ended February 3, 2005 (the "Form 10-K/A"). The changes are explained below and affect only pages 21 and 54 of the original filing on Form 10-K (the "Original Filing"). None of the changes impact the Company's financial position or previously reported net earnings or cash flows.

The Company is filing this Form 10-K/A to amend certain lease disclosures found on page 54 of the Original Filing (see Note 17, Leases in Item 8. Financial Statements and Supplementary Data). The Company is also amending the related Operating lease amounts included in, and footnote 3 to, the Contractual Obligations table contained on page 21 of the Original Filing (see Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations). Within Note 17, sublease rent income for 2004, 2003 and 2002 has been amended. The original disclosures reflected rental income on all properties; the amended disclosures reflect sublease rent on properties under operating leases. There were also a number of proportionally smaller, miscellaneous adjustments to historical rent expense and future lease payments and sublease income disclosures within the Note. The future lease payment changes are also reflected in the amended Contractual Obligations table. In all other respects, the Original Filing remains unchanged.

Example 4
Company: Advanzeon Solutions Inc
CIK:22872
Reporting Period: 12/31/2019
Date Amended: 07/08/2020
Reason: Revision to stockholder's equity disclosure
URL: https://www.sec.gov/Archives/edgar/data/22872/000173112220000718/e2012_10ka.htm

The purpose of this amendment to Advanzeon Solutions Inc. Annual Report on Form 10-K for the year ended December 31, 2019 is to add the additional activity for the year ended December 31, 2018 to the statement of stockholders deficiency, to organize the Exhibits 31 and 32 in numerical order, to add the certification of the CFO, and on page 53 disclose the relationship between our CEO and our Chief Accounting Officer.

No other changes have been made to the Form 10-K. This amendment to the Form 10-K is presented as of the filing date of the original Form 10-Q and does not modify or update in any way the disclosures made in the original Form 10-K.

Pursuant to Rule 12b-15 under the Securities and Exchange Act of 1934, as amended, this Form 10-K/A includes new certifications by our principal executive officer and principal financial officer under Sections 302 and 906 of the Sarbanes-Oxley Act of 2002. Except for the items noted

above no other information included in the Company's original Form 10-K is being amended by this Form 10-K/A.

Example 5
Company: Alanco Technologies Inc
CIK: 98618
Reporting Period: 06/30/2011
Date Amended: 11/07/2011
Reason: Correction to deferred tax assets
URL: https://www.sec.gov/Archives/edgar/data/98618/000009861811000033/k10_063011.htm

This Amendment No. 1 to Form 10-K for the fiscal year ended June 30, 2011 is being filed for the purposes of correcting two typographical errors. The first is on page 9 under Critical Accounting Policies where the amended filing changes the word "reclassification" to "classification". The second is on page 36 under Note 9 - Income Taxes in the Notes to Consolidated Financial Statements where the components of deferred tax assets due to net operating loss and capital loss was reported erroneously as $106,858,000 rather than the correct amount of $10,858,000.

Example 6
Company: Associated Banc-Corp
CIK: 7789
Reporting Period: 03/31/2018
Date Amended: 05/04/2018
Reason: Correction to the oil and gas charge offs
URL:
https://www.sec.gov/Archives/edgar/data/7789/000119312518152852/d578464d10qa.htm

Associated Banc-Corp (the "Corporation") is filing this Amendment No. 1 on Form 10-Q/A (this "Amendment No. 1") to its Quarterly Report on Form 10-Q for the quarter ended March 31, 2018, which was originally filed with the Securities and Exchange Commission on April 30, 2018 (the "Original Form 10-Q"), for the sole purpose of correcting the information provided in the table captioned "Table 6 Oil and Gas Loan Portfolio" ("Table 6") in Part I, Item 1 "Management's Discussion and Analysis of Financial Condition and Results of Operations" of the Original Form 10-Q.

Specifically, the Quarter net charge offs for the Oil and gas portfolio shown in the Original Form 10-Q in Table 6 for the quarter ended December 31, 2017 was $25 million. This amount was, in fact, the net charge off amount for the full year ended December 31, 2017. As indicated in the corrected Table 6 presented on page 9 of this Amendment No. 1, the correct Quarter net charge offs for the Oil and gas portfolio for the quarter ended December 31, 2017 was $0.

Example 7
Company: Destination XL Group
CIK: 813298
Reporting Period: 01/28/2017
Date Amended: 06/30/2017
Reason: Correction to compensation disclosure.

URL:https://www.sec.gov/Archives/edgar/data/813298/000156459017013138/dxlg-10ka_20170128.htm

We are filing this Amendment No. 2 to our Annual Report on Form 10−K for the fiscal year ended January 28, 2017 ("Form 10-K") to correct, due to a calculation error: (i) the table in Compensation, Discussion and Analysis ("CD&A") that compares compensation for our Named Executive Officers for fiscal 2016 to fiscal 2015; and (ii) the Summary Compensation Table to state accurately the stock awards and total compensation for our Named Executive Officers for fiscal 2016. The stock awards column of the Summary Compensation Table failed to include the fair value of restricted stock awards granted under the Company's 2016 Wrap-Around Plan to Messrs. Stratton, Ederle, Molloy and Reaves. The grants of the awards were discussed in the notes to the Summary Compensation Table and in the CD&A section, and were reflected in the "2016 Grants of Plan-Based Awards" table. Accordingly, the Company is filing, in its entirety, "Item 11. Executive Compensation", which was previously filed on Amendment No. 1 to our 10-K on May 30, 2017 to correct these two tables.

Except for the amendments described above, this Form 10−K/A does not modify or update the disclosure in our Form 10−K filed with the Securities and Exchange Commission on March 20, 2017 or our Amendment No.1 to the Form 10-K filed with the Securities and Exchange Commission on May 30, 2017.

Example 8

Company: Westwater Resources
CIK: 839470
Reporting Period: 12/31/2019
Date Amended: 02/28/2020
Reason: Numerous corrections to disclosures.
URL:
https://www.sec.gov/Archives/edgar/data/839470/000105291820000040/wwrform10ka1feb28-20.htm

This Amendment No. 1 on Form 10-K/A (the "Amendment") to the Annual Report on Form 10-K for the year ended December 31, 2019 filed by Westwater Resources, Inc. (the "Company") on February 14, 2020 (the "Original Annual Report") corrects the following errors in the Original Annual Report:

- *Part I, Item 1A "Risk Factors": Under the Risk Factor entitled, "If we are unable to raise additional capital, our business may fail and holders of our securities may lose their entire investment." the amount raised through February 14, 2020 is $10.7 million instead of $9.2 million as presented in the Original Annual Report;*

- *Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations": The 2018 General and Administrative Expense line item is $7,009 instead of $7,357 as presented in the Original Annual Report, and the change in arbitration costs incurred during 2019 compared to 2018 were $1.0 million instead of $1.4 million as presented in the Original Annual Report; and*

•Part III, Item 11 "Executive Compensation": Deleted and replaced the 2019 Outstanding Equity Awards at Fiscal Year End table in its entirety to include options granted in July 2018, subject to stockholder approval, and approved by stockholders at the Annual Meeting of Stockholders held on April 18, 2019.

In addition, currently dated certifications required under Section 302 of the Sarbanes-Oxley Act of 2002 are filed as exhibits to this Amendment. Because no financial statements have been included in this Amendment and this Amendment does not contain or amend any disclosure with respect to Items 307 and 308 of Regulation S-K, paragraphs 3, 4, and 5 of the certifications have been omitted. Because no financial statements are contained within this Amendment, the Company is not filing currently dated certifications pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

Except as described above, the remainder of the Original Annual Report is unchanged, and this Amendment does not reflect any event occurring after the date of the Original Annual Report.

Example 9
Company: American Airlines
CIK: 4515
Reporting Period: 06/30/2016
Date Amended: 07/25/2016
Reason: Additional information provided following the SEC denying their request for confidential treatment.
URL: https://www.sec.gov/Archives/edgar/data/4515/000119312516656554/d216759dex103.htm

American Airlines Group Inc. ("AAG") and American Airlines, Inc. ("American Airlines") are filing this Amendment No. 1 (the "Form 10-Q/A") to their Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 (the "Form 10-Q"), filed with the U.S. Securities and Exchange Commission on July 22, 2016, solely to file certain ancillary tables and exhibits that were inadvertently omitted from Exhibits 10.3 and 10.4 in the Form 10-Q.

Example 10
Company: Deere & CO
CIK: 315189
Reporting Period: 01/28/2018
Date Amended: 03/02/2018
Reason: Corrected to include material subsequent event.
URL:https://www.sec.gov/Archives/edgar/data/315189/000155837018001449/de-20180128x10qa.htm

Deere & Company (the Company) is filing this Amendment No. 1 on Form 10-Q/A (the Amendment) to amend its Quarterly Report on Form 10-Q for the three month period ended January 28, 2018, originally filed with the U.S. Securities and Exchange Commission on March 1, 2018 (the Original Filing). The Company is filing the Amendment to correct an inadvertent typographical error in the Original Filing in which the amount of secured borrowings resulting from a retail note securitization transaction entered into by the Company in February 2018 was

not included. The last sentence in Item 2 – Management's Discussion and Analysis of Financial Condition and Results of Operations is hereby amended and restated to read "In February 2018, the Company's financial services operations entered into a retail note securitization transaction, which resulted in $753 million of secured borrowings."

Appendix C. Rules and Prompts used in Rules-based and LLM models

This appendix provides technical details on the amendment classification process described in the data section of the paper. Specifically, it outlines (1) the way we decided to categorize each amendment, (2) the rule-based logic used to classify amendment summaries, and (3) the prompt structures used to guide GPT-4o in identifying categories based on the full text of explanatory notes.

C1. Amendment Categories

We assign each amendment to one or more of 11 predefined categories:

"Major Corrections"

1. Accounting Errors
2. Disclosures related to Financial Statements (Note updates, table updates)
3. Disclosures related to Internal Controls (Updates on management's internal control assessment)

"Minor Corrections"

4. Administrative Errors (typos, printing errors, editing errors)
5. Minor Disclosures (inserting standard language about forward-looking statements or safe harbor provisions that was accidentally omitted)
6. Separate Financial Statements of Subsidiaries
7. CEO/CFO Certifications (where no other reason is listed)

"Procedural/Other Corrections"

8. Exhibit 101 (furnish the Interactive Data Files as Exhibit 101 in accordance with Rule 405 of Regulation S-T)
9. Part III (filed to include the information required by Part III, Items 10 through 14 of Form 10-K)
10. External Audit Report (to include the signed Report of Independent Registered Public Accounting Firm)
11. Responding to SEC Comments*

*In future iterations of this paper, SEC Comments will be broken into 1) confidential treatment denials, 2) general guidance revisions, and 3) firm-specific corrections.

C2. Rule-Based Classification Logic
The following keyword-based heuristics were applied to GPT-generated amendment summaries to identify candidate categories:

Category	Trigger Keywords / Phrases
Exhibit 101	"XBRL", "interactive data", "Exhibit 101", "601(b)(101)"
Part III	"Item 10", "Item 11", "Item 12", "Item 13", "Item 14", "Part III"
CEO/CFO Certifications	"conformed signature", "signed on behalf of", "signature page"
Responding to SEC Comments	"SEC comment", "staff letter", "SEC guidance", "responding to SEC"
Material Weakness	"material weakness" and no indication that the issue was previously disclosed
Separate Financial Statement	"subsidiary financials", "wholly-owned", "separate financial statements"

These keyword mappings were used either:

- directly within GPT-4o prompts (to anchor classifications), or
- as post-prompt checks for consistency and interpretability.

A complete list of keyword rules and match logic is available upon request or in supplemental materials.

C2. GPT Classification Prompts

We provide three representative prompts used in our classification pipeline. Each prompt was paired with a specific task and structured to ensure transparency, reproducibility, and consistency.

Example 1: General Purpose Classification Prompt

Task: Identify the overall purpose of the amendment based on the full explanatory note.

Prompt:

You are an excellent SEC specialist. You will be provided with an amendment note and a classification based on rules. The rule-based classification may be wrong, but give emphasis to the rule-based classes during the classification. Your task is to classify the PURPOSE of the amendment note into one or more of the following categories:

- *Errors*
- *Disclosure*
- *Disc Related to Internal Controls*

- *Part III*
- *Filing of External Audit Report*
- *Responding to SEC Comments*
- *Signatures*
- *Separate Financial Statement*
- *NA*

Return the result as JSON with:
{ "explanation": {<category>: "<one-sentence explanation>", ...}, "categories": [<list of selected categories>] }

Example 2: Disclosure Subclassification Prompt

Task: Further classify disclosure-related amendments.

Prompt:
You are a good SEC analyst. You will be given an SEC amendment note that contains a disclosure. Please classify the disclosure into one of the following categories:

- **Disc_FS:** Disclosure related to financial statements, excluding internal control topics.
  - **Common causes include:**
    - Additional narrative or quantitative information on financial statement line items included in tables or notes
    - Expanded segment reporting or revenue recognition notes
    - Revisions to accounting policy descriptions
  - **Impact:** Provides investors and regulators with more context for interpreting reported financial results, potentially affecting valuation and compliance assessments.
- **Disc_IC:** Disclosure about internal control over financial reporting.
  - **Common causes include:**
    - Updates on management's internal control assessment
    - Changes in control processes or remediation of control deficiencies
    - Disclosure of significant changes in controls
  - **Impact:** Signals the effectiveness (or weaknesses) of financial reporting systems, influencing investor confidence and regulatory scrutiny.
- **Minor_disc:** Disclosure unlikely to significantly influence stakeholders.
  - **Common causes include:**
    - Routine compliance updates without substantive new information
    - Cosmetic clarifications to existing disclosures
    - Minor adjustments to non-financial data
  - **Impact:** Generally limited informational value and unlikely to affect decision-making by investors or regulators.
- **NA:** If the note does not concern a disclosure.

Return as JSON:
{ "explanation": "<one sentence explanation>", "disc_class": "<one of Disc_FS, Disc related to IC, Minor_disc, or NA>" }

Example 3: Error Subclassification Prompt

Task: Distinguish between *accounting* and *administrative* errors in amendment filings.

Prompt:

You are a good SEC specialist. You will be given an SEC amendment note that contains an error. Please classify the error into one of the following categories:

- **Accounting Errors**: Unintentional misstatements, omissions, or misclassifications in financial statements due to incorrect application of accounting principles, misclassification, or computational mistakes.
    - *Common causes include:*
        - Misapplication of accounting standards
        - Incorrect classifications
        - Miscalculations affecting financial figures
        - Use of incorrect accounting methods
    - *Impact:* May affect financial statement accuracy, investor decisions, regulatory compliance, and could require restatement.
- **Admin Errors**: Clerical, typographical, formatting, or minor computational issues that do *not* impact financial reporting accuracy.
    - *Common causes include:*
        - Typos, pagination problems, or formatting mistakes
        - Minor rounding differences
        - Non-substantive edits to footnotes
    - *Impact:* Generally cosmetic and does not alter reported results.
- **Both**: If both accounting and administrative errors are addressed in the same note.
- **NA**: If the note does not describe any error.

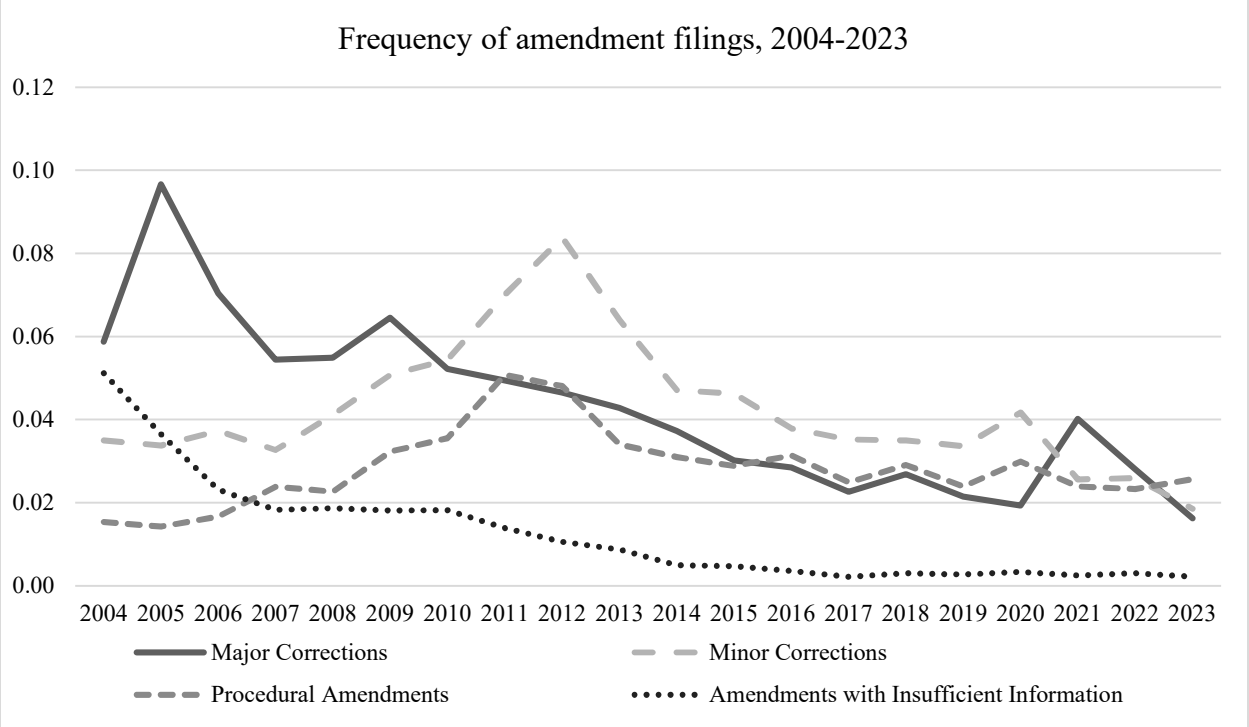
Return the result as JSON:
{ "explanation": "<one sentence explanation>", "error_class": "Accounting Errors" | "Admin Errors" | "Both" | "NA" }

Appendix D. Variable Definitions

Variable	Definition
Filing Types	
$Amend_t$	Indicator variable equal to one if the firm files at least one amendment during the fiscal year, and zero otherwise.
$CorrectingAmend_t$	Indicator variable equal to one if the firm files any amendments related to accounting errors, financial statement disclosures, internal control disclosures, administrative errors, minor disclosures, filing of separate financial statements of subsidiaries, or solely filing of signatures during the fiscal year, and zero otherwise.
$MajorCorrectingAmend_t$	Indicator variable equal to one if the firm files any amendments related to accounting errors, financial statement disclosures, or internal control disclosures during the fiscal year, and zero otherwise.
$MinorCorrectingAmend_t$	Indicator variable equal to one if the firm files any amendments related to administrative errors, minor disclosures, filing of separate financial statements of subsidiaries, or solely filing of signatures and no amendments related to accounting errors, financial statement disclosures, or internal control disclosures during the fiscal year, and zero otherwise.
$ProceduralAmend_t$	Indicator variable equal to one if the firm files any amendments related to filing Exhibit 101, filing Part III, filing the external audit report, or responding to SEC comments and no amendments related to accounting errors, financial statement disclosures, internal control disclosures, administrative errors, minor disclosures, filing of separate financial statements of subsidiaries, or solely filing of signatures during the fiscal year, and zero otherwise.
$InsufficientInfoAmend_t$	Indicator variable equal to one if the firm files only amendments lacking explanatory notes during the fiscal year, and zero otherwise.
$Restate_t$	Indicator variable equal to one if Audit Analytics reflects an 8-K Item 4.02 Non-Reliance on Previously Issued Financial Statements (Audit Analytics) filed by the firm during the fiscal year, and zero otherwise.
$ImmError_t$	Indicator variable equal to one if Audit Analytics reflects a revision or out-of-period adjustment by the firm during the fiscal year, and zero otherwise.
$AAFiling_t$	Indicator variable equal to one if Audit Analytics reflects an 8-K Item 4.02, a revision, or an out-of-period adjustment by the firm during the fiscal year, and zero otherwise.

Variable	Definition
Other Variables	
Acquisition	Indicator variable equal to one if sales from acquisitions exceed 20 percent of total sales during the fiscal year, and zero otherwise.
Big4	Indicator variable equal to one if the firm is audited by a Big 4 auditor during the fiscal year, and zero otherwise.
BTM	Ratio of book value to market value of equity measured as of the end of the fiscal year.
Capex	Capital expenditures during the fiscal year, scaled by total asset at the end of the fiscal year.
CapRaise	Indicator variable equal to one if debt and equity capital raised during the year exceeds 20 percent of total assets at the end of the fiscal year, and zero otherwise.
DDAQ	Accrual quality as measured by the residual from firm-specific regressions of changes in working capital on past, present, and future cash flows from operations, per Dechow and Dichev (2002).
Earn	Net income for the fiscal year, scaled by total assets at the end of the fiscal year.
Intangibles	Sum of advertising and R&D expenditures for the fiscal year, scaled by total assets at the end of the fiscal year.
Lev	Long-term debt scaled by total assets at the end of the fiscal year.
Loss	Indicator variable equal to one if the firm recognizes net income of zero or less for the fiscal year, and zero otherwise.
MatWeak	Indicator variable equal to one if the firm discloses at least one material weakness during the fiscal year, and zero otherwise.
Size	Natural logarithm of the market value of equity at the end of the fiscal year.
TotalAssets	Natural logarithm of total assets at the end of the fiscal year.

Figure 1. Frequency of amendment and Audit Analytics filings, 2004-2023



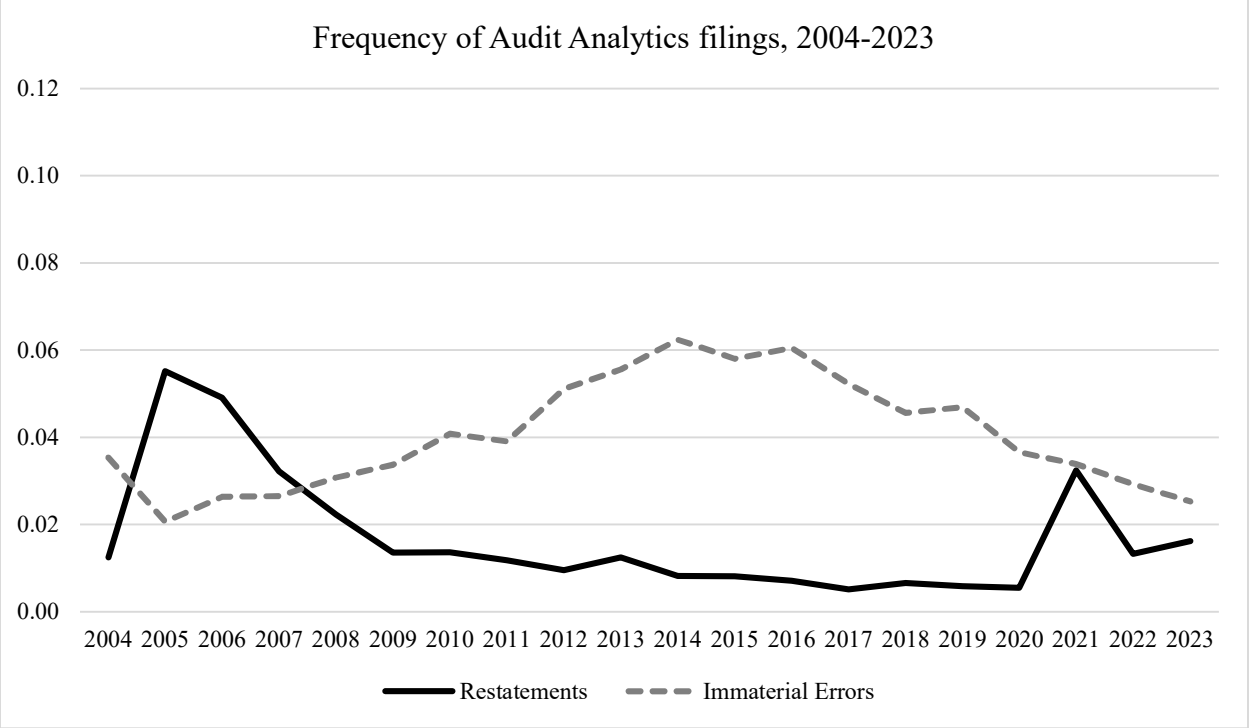


Table 1: Sample Selection

In Panel A, we report details on our amendment sample selection procedure. We extract all amendments available on the SEC EDGAR website, which includes amendments filed during and after 1993 through 2023. In Panel B we provide amendments by year.

Panel A: Amendments Sample

	Number of Amendments
All 10-K/A and 10-Q/A filings between 1993 and 2023 available on EDGAR	89,655
Less: amendments which cannot be mapped to an original filing on Compustat	(35,454)
Less: amendments filed prior to fiscal year 2004 or after fiscal year 2023	(22,771)
Amendments filed between 2004 and 2023	31,430

Panel B: Amendments by year

Year	Number of Amendments	Percentage with Explanatory Notes	Amendment Firm-Years
2004	2,725	65.0%	1,406
2005	2,929	76.5%	1,560
2006	2,223	82.1%	1,229
2007	1,625	85.2%	1,036
2008	1,631	85.7%	1,067
2009	2,085	87.1%	1,272
2010	2,026	85.3%	1,223
2011	2,312	89.1%	1,404
2012	2,349	91.6%	1,513
2013	1,936	91.6%	1,213
2014	1,475	93.5%	950
2015	1,237	95.2%	839
2016	1,077	94.5%	755
2017	883	96.8%	624
2018	953	95.9%	682
2019	781	96.3%	598
2020	852	96.5%	703
2021	924	97.1%	702
2022	832	95.8%	610
2023	575	95.5%	456
	31,430	100.0%	19,842

Table 1, continued

Panel C: All Amendment Types by Filed Year and Category (In Alphabetical Order and Not Mutually-Exclusive)

Key	C1	C2	C1	C1	P	P	C2	P	P	C2	C2
Year	Accounting Errors	Admin Errors	Disclosure Related to Internal Controls	Disclosure Related to Financial Statements	Exhibit 101	External Audit Report	Minor Disclosure	Part III	Response to SEC Comments	Separate Financial Statements	CEO/CFO Certification
2004	478	328	256	691	0	140	222	240	139	85	35
2005	728	384	690	818	0	414	224	249	197	96	36
2006	672	396	363	772	0	172	177	223	216	82	28
2007	484	271	211	545	0	148	164	272	120	71	14
2008	346	324	263	435	0	132	195	268	107	79	40
2009	343	361	398	451	78	178	299	366	213	96	45
2010	368	282	297	471	135	158	343	330	222	85	36
2011	319	312	230	458	652	148	533	285	263	71	27
2012	263	342	164	454	961	134	640	237	147	79	19
2013	323	387	185	464	418	169	411	273	159	92	13
2014	241	272	181	325	295	149	304	241	109	72	14
2015	203	245	147	245	204	123	288	241	74	50	26
2016	163	193	126	229	145	108	219	250	56	47	9
2017	118	202	120	162	96	120	185	199	49	41	8
2018	171	201	148	178	95	125	169	226	49	38	15
2019	110	163	113	137	104	86	156	202	41	29	10
2020	85	149	61	125	72	97	238	272	10	40	11
2021	325	142	181	273	56	77	128	219	83	54	16
2022	209	184	171	204	44	74	113	235	28	39	16
2023	116	90	102	100	17	53	84	231	15	33	7
	6,065	5,228	4,407	7,537	3,372	2,805	5,092	5,059	2,297	1,279	425

Key: C1 = Major Correction Amendment; C2 = Minor Correction Amendment; P = Procedural Amendments; See also Appendix C.

Table 2

Panel A: Firm-year sample

	Total firm-years with amendment filings	Firm-years **with amendment filings and no Audit Analytics filings**	Firm-years **with amendment filings *AND* Audit Analytics filings**	Firm-years **with Audit Analytics filings** and **no amendment filings**	Total firm-years with Audit Analytics filings	Firm-Years with **either amendment OR Analytics filings**	Firm-Years with neither amendment or Analytics filings	Total firm-years
Compustat firm years between 2004 and 2023 with non-missing assets and CIKs	19,842	16,295	3,547	7,149	10,696	26,991	128,362	155,353
Correcting amendments	*13,433*	*10,479*	*2,964*					
Procedural amendments	*4,368*	*4,029*	*339*					
Amendments with insufficient information	*2,031*	*1,787*	*244*					
Audit Analytics Restatements			*1,905*	*810*	*2,715*			
Audit Analytics Immaterial Errors			*1,642*	*6,339*	*7,981*			

Table 2, Continued

Panel B: Overlap of Amendments and Audit Analytics						
			Firm years with			
Firm years	**N**		**Major Corrections**	**Minor Corrections**	**Procedural Amendments**	**Insufficient Information Amendments**
With no restatements or revisions or amendments	128,362	82.6%				
With amendments but no restatements or revisions	16,295	10.5%	4,415	6,064	4,029	1,787
With amendments and restatements	1,905	1.2%	1,679	74	53	99
With amendments and revisions	1,642	1.1%	725	486	286	145
With restatements but no amendments	810	0.5%				
With revisions but no amendments	6,339	4.1%				
Full sample	155,353	100%				

Table 3: Descriptives Statistics

Panel A: Pooled firm-years						
	N	**Mean**	**St. Dev**	**P25**	**P50**	**P75**
Amend$_t$	155,353	0.128	0.33	0.00	0.00	0.00
CorrectingAmend$_t$	155,353	0.087	0.28	0.00	0.00	0.00
MajorCorrectingAmend$_t$	155,353	0.044	0.20	0.00	0.00	0.00
MinorCorrectingAmend$_t$	155,353	0.043	0.20	0.00	0.00	0.00
ProceduralAmend$_t$	155,353	0.028	0.17	0.00	0.00	0.00
InsufficientInfoAmend$_t$	155,353	0.013	0.11	0.00	0.00	0.00
AAFiling$_t$	155,353	0.069	0.25	0.00	0.00	0.00
Restate$_t$	155,353	0.017	0.13	0.00	0.00	0.00
ImmError$_t$	155,353	0.051	0.22	0.00	0.00	0.00
Restate$_{t+1}$	155,353	0.018	0.13	0.00	0.00	0.00
AAFiling$_{t+1}$	155,353	0.071	0.26	0.00	0.00	0.00
CorrectingAmend$_{t+1}$	140,821	0.084	0.28	0.00	0.00	0.00
Amend$_{t+1}$	140,821	0.122	0.33	0.00	0.00	0.00
CorrectingAmend$_{t+1}$ *or AAFiling*$_{t+1}$	140,821	0.139	0.35	0.00	0.00	0.00
TotalAssets	155,353	8093	31,877	48	439	2,663
MatWeak	155,353	0.090	0.29	0.00	0.00	0.00
Big4	153,889	0.614	0.49	0.00	1.00	1.00
Size	138,643	5.689	2.68	3.82	5.72	7.58
BTM	138,635	0.699	0.89	0.20	0.48	0.88
Loss	155,353	0.438	0.50	0.00	0.00	1.00
Earn	154,752	-0.476	2.35	-0.14	0.01	0.05
Lev	155,343	0.403	1.13	0.02	0.18	0.40
Acquisition	155,353	0.021	0.14	0.00	0.00	0.00
CapRaise	155,353	0.293	0.46	0.00	0.00	1.00
Intangibles	155,353	0.084	0.23	0.00	0.00	0.06
Capex	153,618	0.045	0.07	0.00	0.02	0.05
DDAQ	124,695	0.053	0.09	0.01	0.03	0.06

Table 3, Continued

Panel B: Firm-years with Audit Analytics filings versus incremental years with serious or less serious amendment filings

	Firm-years with Audit Analytics filings			Firm-years with correcting amendments **and no Audit Analytics filings**				
	N	**Mean**	**P50**	**N**	**Mean**	**P50**	**Difference**	**t-statistic**
Amend$_t$	10,696	0.33	0.00	10,479	1.00	1.00	-0.67***	(-145.32)
CorrectingAmend$_t$	10,696	0.28	0.00	10,479	1.00	1.00	-0.72***	(-165.33)
MajorCorrectingAmend$_t$	10,696	0.22	0.00	10,479	0.42	0.00	-0.20***	(-31.30)
MinorCorrectingAmend$_t$	10,696	0.05	0.00	10,479	0.58	1.00	-0.53***	(-100.31)
Restate$_t$	10,696	0.25	0.00	10,479	0.00	0.00	0.25***	(59.70)
ImmError$_t$	10,696	0.75	1.00	10,479	0.00	0.00	0.75***	(175.50)
AAFiling$_{t+1}$	10,696	0.21	0.00	10,479	0.09	0.00	0.12***	(23.95)
CorrectingAmend$_{t+1}$	10,088	0.15	0.00	9,987	0.21	0.00	-0.06***	(-11.97)
Amend$_{t+1}$	10,088	0.20	0.00	9,987	0.28	0.00	-0.09***	(-14.74)
CorrectingAmend$_{t+1}$ *or AAFiling*$_{t+1}$	10,088	0.30	0.00	9,987	0.27	0.00	0.03***	(4.58)
TotalAssets	10,696	7,675	857	10,479	4,022	238	3,654***	(11.18)
MatWeak	10,696	0.17	0.00	10,479	0.20	0.00	-0.03***	(-6.08)
Big4	10,658	0.74	1.00	10,407	0.48	0.00	0.26***	(39.80)
Size	10,666	6.38	6.42	10,005	5.07	5.06	1.32***	(41.31)
BTM	10,666	0.70	0.51	10,005	0.64	0.40	0.06***	(4.95)
Loss	10,696	0.39	0.00	10,479	0.51	1.00	-0.12***	(-17.54)
Earn	10,689	-0.10	0.01	10,465	-1.10	0.00	1.00***	(25.43)
Lev	10,695	0.26	0.21	10,479	0.61	0.21	-0.34***	(-20.91)
Acquisition	10,696	0.03	0.00	10,479	0.03	0.00	0.00	(-0.43)
CapRaise	10,696	0.27	0.00	10,479	0.34	0.00	-0.07***	(-11.16)
Intangibles	10,696	0.06	0.01	10,479	0.11	0.00	-0.05***	(-15.56)
Capex	10,651	0.04	0.02	10,392	0.04	0.02	0.00	(-1.31)
DDAQ	9,203	0.04	0.03	8,446	0.07	0.03	-0.02***	(-15.33)

Table 4: Correlation Table

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1) $Amend_t$																							
(2) $CorrectingAmend_t$	**0.80**																						
(3) $MajorCorrectingAmend_t$	**0.56**	**0.70**																					
(4) $MinorCorrectingAmend_t$	**0.55**	**0.69**	**-0.05**																				
(5) $ProceduralAmend_t$	**0.44**	**-0.05**	**-0.04**	**-0.04**																			
(6) $InsufficientInfoAmend_t$	**0.30**	**-0.04**	**-0.03**	**-0.02**	**-0.02**																		
(7) $Restate_t$	**0.23**	**0.27**	**0.37**	**-0.01**	**-0.01**	**0.03**																	
(8) $ImmError_t$	**0.05**	**0.05**	**0.05**	**0.02**	**0.01**	**0.01**	**-0.03**																
(9) $AAFiling_{t+1}$	**0.07**	**0.06**	**0.06**	**0.02**	**0.02**	**0.01**	**0.09**	**0.12**															
(10) $Restate_{t+1}$	**0.06**	**0.06**	**0.07**	**0.01**	**0.01**	**0.02**	**0.08**	**0.03**	**0.49**														
(11) $CorrectingAmend_{t+1}$	**0.17**	**0.15**	**0.11**	**0.10**	**0.06**	**0.03**	**0.07**	**0.03**	**0.17**	**0.26**													
(12) *MatWeak*	**0.14**	**0.13**	**0.13**	**0.05**	**0.04**	**0.04**	**0.10**	**0.03**	**0.13**	**0.18**	**0.16**												
(13) *Big4*	**-0.10**	**-0.07**	**-0.06**	**-0.03**	**-0.05**	**-0.06**	0.00	**0.08**	**0.07**	**-0.01**	**-0.06**	**-0.21**											
(14) *Size*	**-0.09**	**-0.06**	**-0.06**	**-0.02**	**-0.05**	**-0.06**	**-0.01**	**0.09**	**0.08**	**-0.01**	**-0.04**	**-0.20**	**0.60**										
(15) *BTM*	**-0.02**	**-0.02**	**-0.01**	**-0.02**	**0.01**	**-0.01**	0.00	0.00	**-0.01**	0.00	**-0.02**	**-0.03**	**-0.05**	**-0.19**									
(16) *Loss*	**0.06**	**0.04**	**0.04**	**0.02**	**0.05**	**0.02**	**0.02**	**-0.04**	**-0.03**	**0.02**	**0.04**	**0.18**	**-0.22**	**-0.47**	**0.03**								
(17) *Earn*	**-0.07**	**-0.06**	**-0.04**	**-0.03**	**-0.02**	**-0.04**	**0.02**	**0.04**	**0.05**	**0.02**	**-0.04**	**-0.22**	**0.21**	**0.29**	**0.13**	**-0.26**							
(18) *Lev*	**0.05**	**0.04**	**0.03**	**0.02**	**0.01**	**0.03**	**-0.02**	**-0.03**	**-0.04**	**-0.02**	**0.03**	**0.17**	**-0.13**	**-0.22**	**-0.13**	**0.15**	**-0.61**						
(19) *Acquisition*	**0.04**	**0.03**	**0.03**	**0.01**	**0.02**	**0.01**	**0.01**	**0.02**	**0.04**	**0.02**	**0.03**	**0.02**	0.00	**0.02**	**-0.01**	**0.01**	**0.02**	**-0.01**					
(20) *CapRaise*	**0.04**	**0.03**	**0.02**	**0.02**	**0.02**	0.00	**0.01**	**-0.02**	0.00	**0.01**	**0.03**	**0.07**	**-0.07**	**-0.12**	**-0.16**	**0.27**	**-0.15**	**0.11**	**0.08**				
(21) *Intangibles*	**0.04**	**0.02**	**0.01**	**0.02**	**0.03**	0.00	0.00	**-0.03**	**-0.03**	**0.00**	**0.02**	**0.08**	**-0.07**	**-0.18**	**-0.16**	**0.28**	**-0.36**	**0.21**	**-0.03**	**0.20**			
(22) *Capex*	**-0.02**	**-0.01**	0.00	**-0.02**	**-0.02**	**-0.01**	**-0.01**	**-0.02**	**-0.01**	0.00	**-0.01**	**-0.02**	**0.03**	0.00	**-0.03**	**0.05**	**-0.01**	**-0.01**	**-0.03**	**0.13**	**-0.05**		
(23) *LnAssets*	**-0.08**	**-0.05**	**-0.05**	**-0.02**	**-0.04**	**-0.06**	**0.01**	**0.09**	**0.08**	0.00	**-0.05**	**-0.24**	**0.55**	**0.86**	**0.12**	**-0.49**	**0.47**	**-0.32**	**0.02**	**-0.23**	**-0.33**	**-0.05**	
(24) *DDAQ*	**0.05**	**0.03**	**0.02**	**0.02**	**0.03**	**0.05**	0.00	**-0.03**	**-0.03**	**-0.01**	**0.03**	**0.13**	**-0.23**	**-0.27**	**-0.05**	**0.12**	**-0.22**	**0.21**	**-0.01**	**0.04**	**0.13**	**-0.08**	**-0.30**

Table 5

Panel A: Future Audit Analytics Filings

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	$Restate_{t+1}$	$Restate_{t+1}$	$Restate_{t+1}$	$AAFiling_{t+1}$	$AAFiling_{t+1}$	$AAFiling_{t+1}$
Amend	0.012***			0.034***		
	(8.05)			(13.41)		
CorrectingAmend		0.015***			0.038***	
		(7.82)			(12.27)	
MajorCorrectingAmend			0.026***			0.052***
			(8.45)			(11.49)
MinorCorrectingAmend			0.004*			0.024***
			(1.80)			(6.14)
ProceduralAmend		0.010***	0.010***		0.035***	0.035***
		(3.82)	(3.81)		(7.42)	(7.42)
InsufficientInfoAmend		0.000	0.000		0.008	0.008
		(0.02)	(0.09)		(1.18)	(1.24)
MatWeak	0.097***	0.097***	0.097***	0.154***	0.154***	0.153***
	(30.67)	(30.64)	(30.52)	(35.88)	(35.86)	(35.74)
Big4	0.003**	0.002**	0.003**	0.031***	0.030***	0.031***
	(2.22)	(2.15)	(2.26)	(13.66)	(13.60)	(13.68)
Size	0.002***	0.002***	0.002***	0.008***	0.008***	0.008***
	(9.44)	(9.35)	(9.38)	(17.24)	(17.18)	(17.19)
BTM	0.003***	0.003***	0.003***	0.008***	0.008***	0.008***
	(5.83)	(5.81)	(5.75)	(7.91)	(7.88)	(7.84)
Loss	0.004***	0.004***	0.004***	0.002	0.002	0.002
	(3.70)	(3.70)	(3.67)	(0.99)	(0.96)	(0.94)
Earn	0.003***	0.003***	0.003***	0.005***	0.005***	0.005***
	(16.44)	(16.44)	(16.45)	(17.23)	(17.21)	(17.21)
Lev	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(-5.40)	(-5.35)	(-5.34)	(-3.83)	(-3.77)	(-3.76)
Acquisition	0.010***	0.010***	0.010***	0.036***	0.036***	0.036***
	(2.89)	(2.88)	(2.84)	(5.80)	(5.78)	(5.75)
CapRaise	0.002***	0.002***	0.002***	0.006***	0.006***	0.006***
	(2.61)	(2.58)	(2.58)	(3.13)	(3.10)	(3.10)
Intangibles	0.000	0.000	0.000	-0.013***	-0.013***	-0.013***
	(0.12)	(0.09)	(0.11)	(-3.67)	(-3.74)	(-3.73)
Capex	-0.002	-0.002	-0.002	-0.047***	-0.047***	-0.047***
	(-0.26)	(-0.28)	(-0.31)	(-4.20)	(-4.22)	(-4.24)
Observations	135,749	135,749	135,749	135,749	135,749	135,749
Fixed Effects	Year and Industry	Year and Industry	Year and Industry	Year and Industry	Year and Industry	Year and Industry
Clustering	By Firm	By Firm	By Firm	By Firm	By Firm	By Firm
Adj. R-squared	0.059	0.059	0.060	0.071	0.071	0.071
Area under ROC Curve	0.641	0.644	0.642	0.578	0.581	0.582

Notes: This table reports the results from OLS regressions examining whether amendment filings predict future filings captured by Audit Analytics. Columns 1-3 report coefficients from predicting restatements in *t*+1; columns 4-6 report coefficients from predicting restatements, revisions, or adjustments in *t*+1. T-statistics are reported in parentheses. *, **, and *** indicate statistical significance at the p-value < 0.10, 0.05, and 0.01 levels, respectively. Variable definitions are provided in Appendix D.

Table 5, continued

Panel B: Future Amendment Filings

VARIABLES	(1) *Correcting Amend$_{t+1}$*	(2) *Correcting Amend$_{t+1}$*	(3) *Correcting Amend$_{t+1}$*	(4) *Correcting Amend$_{t+1}$ or AAFiling$_{t+1}$*	(5) *Correcting Amend$_{t+1}$ or AAFiling$_{t+1}$*	(6) *Correcting Amend$_{t+1}$ or AAFiling$_{t+1}$*
Amend	0.104***			0.122***		
	(28.08)			(30.48)		
CorrectingAmend		0.117***			0.135***	
		(25.51)			(27.88)	
MajorCorrectingAmend			0.113***			0.138***
			(19.89)			(22.15)
MinorCorrectingAmend			0.120***			0.132***
			(18.75)			(19.75)
ProceduralAmend		0.097***	0.097***		0.118***	0.118***
		(15.56)	(15.56)		(16.77)	(16.77)
InsufficientInfoAmend		0.032***	0.031***		0.043***	0.043***
		(3.80)	(3.79)		(4.50)	(4.51)
MatWeak	0.137***	0.136***	0.136***	0.216***	0.216***	0.215***
	(30.53)	(30.53)	(30.59)	(40.33)	(40.35)	(40.32)
Big4	-0.023***	-0.023***	-0.023***	0.010***	0.010***	0.010***
	(-9.26)	(-9.57)	(-9.59)	(3.33)	(3.20)	(3.21)
Size	0.004***	0.003***	0.003***	0.010***	0.010***	0.010***
	(7.44)	(7.31)	(7.31)	(15.17)	(15.10)	(15.09)
BTM	-0.001	-0.001	-0.001	0.004***	0.004***	0.004***
	(-0.57)	(-0.66)	(-0.65)	(3.07)	(3.01)	(3.00)
Loss	0.010***	0.010***	0.010***	0.010***	0.010***	0.010***
	(4.47)	(4.46)	(4.47)	(3.48)	(3.45)	(3.44)
Earn	0.000	0.000	0.000	0.003***	0.003***	0.003***
	(0.78)	(0.75)	(0.75)	(4.71)	(4.71)	(4.71)
Lev	-0.000	-0.000	-0.000	-0.001	-0.001	-0.001
	(-0.29)	(-0.19)	(-0.20)	(-0.80)	(-0.70)	(-0.70)
Acquisition	0.044***	0.043***	0.043***	0.062***	0.062***	0.062***
	(6.43)	(6.41)	(6.42)	(7.74)	(7.72)	(7.71)
CapRaise	0.013***	0.013***	0.013***	0.014***	0.014***	0.014***
	(6.35)	(6.30)	(6.30)	(5.36)	(5.30)	(5.30)
Intangibles	0.002	0.001	0.001	-0.013**	-0.014**	-0.014**
	(0.34)	(0.26)	(0.26)	(-2.13)	(-2.25)	(-2.24)
Capex	-0.026*	-0.026**	-0.026**	-0.067***	-0.068***	-0.068***
	(-1.94)	(-2.01)	(-2.01)	(-4.10)	(-4.18)	(-4.18)
Observations	122,592	122,592	122,592	122,592	122,592	122,592
Fixed Effects	Year and Industry	Year and Industry	Year and Industry	Year and Industry	Year and Industry	Year and Industry
Clustering	By Firm	By Firm	By Firm	By Firm	By Firm	By Firm
Adj. R-squared	0.057	0.058	0.058	0.074	0.075	0.075
Area under ROC Curve	0.626	0.630	0.630	0.620	0.625	0.625

Notes: This table reports the results from OLS regressions examining whether amendment filings predict future amendment filings. Columns 1-3 report coefficients from predicting correcting amendments in *t*+1; columns 4-6 report coefficients from predicting correcting amendments or restatements, revisions, or adjustments in *t*+1. T-statistics are reported in parentheses. *, **, and *** indicate statistical significance at the p-value < 0.10, 0.05, and 0.01 levels, respectively. Variable definitions are provided in Appendix D.

Table 6

VARIABLES	(1) $Restate_{t+1}$	(2) $Restate_{t+1}$	(3) $AAFiling_{t+1}$	(4) $AAFiling_{t+1}$
AAFiling	0.024***		0.110***	
	(11.36)		(24.07)	
Restate		0.047***		0.107***
		(8.49)		(13.05)
ImmError		0.017***		0.111***
		(7.77)		(21.34)
MatWeak	0.097***	0.096***	0.149***	0.149***
	(30.82)	(30.61)	(36.45)	(36.30)
Big4	0.001	0.001	0.026***	0.026***
	(1.06)	(1.22)	(12.50)	(12.50)
Size	0.002***	0.002***	0.008***	0.008***
	(8.77)	(8.98)	(17.10)	(17.10)
BTM	0.003***	0.003***	0.007***	0.007***
	(5.60)	(5.58)	(7.78)	(7.78)
Loss	0.004***	0.004***	0.002	0.002
	(3.77)	(3.63)	(0.86)	(0.87)
Earn	0.002***	0.002***	0.004***	0.004***
	(16.20)	(16.19)	(16.99)	(16.99)
Lev	-0.002***	-0.002***	-0.002***	-0.002***
	(-5.36)	(-5.31)	(-3.76)	(-3.77)
Acquisition	0.011***	0.011***	0.037***	0.037***
	(3.02)	(3.04)	(5.94)	(5.94)
CapRaise	0.003***	0.003***	0.006***	0.006***
	(2.81)	(2.79)	(3.53)	(3.53)
Intangibles	0.001	0.001	-0.011***	-0.011***
	(0.36)	(0.32)	(-3.35)	(-3.34)
Capex	-0.001	-0.001	-0.043***	-0.043***
	(-0.15)	(-0.22)	(-4.09)	(-4.09)
Controls	Included	Included	Included	Included
Observations	135,749	135,749	135,749	135,749
Fixed Effects	Year and Industry	Year and Industry	Year and Industry	Year and Industry
Clustering	By Firm	By Firm	By Firm	By Firm
Adj. R-squared	0.060	0.061	0.081	0.081
Area under ROC Curve	0.639	0.640	0.593	0.592

Notes: This table reports the results from OLS regressions examining whether Audit Analytics filings predict future Audit Analytics filings. Columns 1 and 2 report coefficients from predicting restatements in *t*+1; columns 3 and 4 report coefficients from predicting restatements, revisions, or adjustments in *t*+1. Coefficients on controls are not tabulated for brevity. T-statistics are reported in parentheses. *, **, and *** indicate statistical significance at the p-value < 0.10, 0.05, and 0.01 levels, respectively. Variable definitions are provided in Appendix D.

Table 7

VARIABLES	(1) $Restate_{t+1}$	(2) $Restate_{t+1}$	(3) $Restate_{t+1}$	(4) $AAFiling_{t+1}$	(5) $AAFiling_{t+1}$	(6) $AAFiling_{t+1}$
Amend	0.009***			0.021***		
	(6.38)			(8.42)		
CorrectingAmend		0.009***			0.021***	
		(4.78)			(6.95)	
MajorCorrectingAmend			0.015***			0.022***
			(5.04)			(4.73)
MinorCorrectingAmend			0.003			0.021***
			(1.51)			(5.41)
ProceduralAmend		0.009***	0.009***		0.032***	0.032***
		(3.59)	(3.60)		(6.99)	(6.99)
InsufficientInfoAmend		-0.002	-0.002		0.000	0.000
		(-0.48)	(-0.40)		(0.04)	(0.05)
AAFiling	0.022***			0.106***		
	(10.65)			(22.89)		
Restate		0.043***	0.039***		0.096***	0.096***
		(7.58)	(6.73)		(11.41)	(11.08)
ImmaterialError		0.016***	0.016***		0.109***	0.109***
		(7.47)	(7.32)		(20.92)	(20.88)
Controls	Included	Included	Included	Included	Included	Included
Observations	135,749	135,749	135,749	135,749	135,749	135,749
Fixed Effects	Year and Industry	Year and Industry	Year and Industry	Year and Industry	Year and Industry	Year and Industry
Clustering	By Firm	By Firm	By Firm	By Firm	By Firm	By Firm
Adj. R-squared	0.061	0.061	0.061	0.081	0.081	0.081
Area under ROC Curve	0.650	0.652	0.651	0.596	0.598	0.598
F-test of equality between coefficients:						
CorrectingAmend = ProceduralAmend		F = 0.02 p = 0.8771			F = 4.33 p = 0.0374	
CorrectingAmend = ImmaterialError		F = 6.86 p = 0.0088			F = 199.22 p = 0.0000	

	F = 4.10			F = 123.01		
ProceduralAmend = ImmaterialError	p = 0.0430			p = 0.0000		
		F = 2.46			F = 2.83	
MajorCorrectingAmend = ProceduralAmend		p = 0.1164			p = 0.0924	
		F = 0.00			F = 143.80	
MajorCorrectingAmend = ImmaterialError		p = 0.9627			p = 0.0000	

Notes: This table reports the results from OLS regressions examining whether amendment and Audit Analytics filings predict future Audit Analytics filings. Columns 1-3 report coefficients from predicting restatements in *t*+1; columns 4-6 report coefficients from predicting restatements, revisions, or adjustments in *t*+1. Coefficients on controls are not tabulated for brevity. T-statistics are reported in parentheses. *, **, and *** indicate statistical significance at the p-value < 0.10, 0.05, and 0.01 levels, respectively. Variable definitions are provided in Appendix D.