Determinants and Outcomes of Goodwill Impairment Key Audit Matters

by

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Abstract

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The addition of Key Audit Matters (KAM) to standard audit reports is one of the most significant changes to the audit report in decades. However, research on the informativeness of KAMs to investors is mixed. I add to this literature by examining whether variation in how goodwill impairment KAMs (GIKAM) are determined influence their informativeness. I first develop a determinants model to predict when an audit client would receive a GIKAM and find that auditor quality (Big 4) and auditor independence (fee ratio) are negatively associated with the likelihood a client receives a GIKAM. I then use this model to create measures of unexpected GIKAMs to test the relationship between unexpected GIKAMs and market outcomes (price and volume). Using annual report date and three-day cumulative abnormal returns and abnormal trading volume, I find no relationship between unexpected GIKAMs and price or volume

reactions. In my third hypothesis, I predict and find that GIKAMs are positively associated with goodwill impairment recognition using pooled and propensity score matched samples. These findings contribute to the growing literature on the usefulness of expanded audit reports as well as audit literature in general.

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Chapter 1: Introduction

I investigate the determinants of and variation in outcomes of goodwill impairment key audit matters. The addition of auditor risk reporting is the biggest change to the audit report in a generation with the goal of increasing the informativeness of the audit report by requiring key audit matters (KAM).[1] KAMs are matters that, in the auditor's opinion, had the most effect on the auditor's overall audit strategy and allocation of resources.

KAM research is mixed. Behavioral research generally supports the efficacy of KAM reporting by providing evidence that KAMs are used by investors (Christensen, Glover, and Wolfe 2014; Köhler, Ratzinger-Sakel, and Jochen 2020); however, archival research generally finds KAMs are not informative to investors (Bedard, Gonthier-Besacier, and Schatt 2019; Gutierrez, Minutti-Meza, Tatum, and Valcheva 2018; Liao, Minutti-Meza, Zhang, and Zou 2019; Lennox Schmidt, and Thompson 2019). A potential reason for the conflict between behavioral and archival findings could be that, in practice, most KAMs are expected and only unexpected KAMs are informative. I test this assertion by focusing on one audit area, goodwill impairment KAM (GIKAM) reporting decisions, and whether GIKAM reporting decisions influence their usefulness.

[1] KAMs are used internationally, and critical audit matters (CAMs) are used in the U.S. The definition of both are substantially similar and discussed in detail in Chapter 2. Since my sample consists of KAMs, I use "KAM" for general use and either CAM or KAM when referring to specific literature.

GIKAMs are ideal to study because auditors need to assess complex and subjective fair value estimates related to goodwill to make the GIKAM decision. GIKAMs are one of the most common KAM topics in the UK.[2] Additionally, prior literature documents a number of market and firm indicators of goodwill impairment; the identification of GIKAM determinants therefore allows for the creation of GIKAM expectations.[3] These expectations can then be used to identify the GIKAMs that are expected to be more informative. Finally, goodwill impairment is associated with market (e.g. Hirschey and Richardson 2002) and financial reporting outcomes (goodwill impairment recognition) that can be used as measures of GIKAM informativeness.

First, I examine determinants of the auditor's GIKAM reporting decision. Auditors have discretion over which matters are KAMs and differences in the determination of KAM topics may impact the information content of KAMs. Prior literature documents that managers use their information advantage over auditors to opportunistically delay goodwill impairment recognition and that greater agency incentives to delay goodwill impairment increase this behavior (Beatty and Weber 2006; Ramana and Watts 2012). I expect auditors will consider these incentives when making the GIKAM decision; greater agency incentives will therefore be associated with a higher likelihood of receiving a GIKAM.

[2] Of the 65 KAM categories on Audit Analytics, 7.9% (2,029/25,674) were classified as "Impairment – Goodwill" or "Impairment – Goodwill and intangible assets" during the period 2013 through 2020. Only "Revenue and other income" and "Investment valuation – Securities and financial instruments" were more prevalent during that period with 2,829 and 1,667, respectively.

[3] This contrasts with other KAM topics which I expect to be more difficult to predict and therefore be more difficult to identify when they are unexpected. For example, revenue recognition is the most common KAM topic in the UK, but it is difficult to determine the circumstances which would cause the market to expect a revenue recognition KAM. For goodwill there are indicators which suggest the market anticipates recognition of goodwill impairment.

Building on risk assessment and audit quality literature, I expect higher quality auditors (i.e. larger audit firms and specialists) will make different GIKAM reporting decisions than lower quality auditors. On one hand, high quality auditors have been shown to limit opportunistic goodwill impairment reporting (Albersmann and Quick 2020; Greco, Ferramosca, D'Oza, and Cousholli 2017) suggesting they are better able to identify impairment risk. I expect higher quality auditor are associated with a higher likelihood of issuing a GIKAM as a result. However, higher quality auditors have also been shown to assess a lower level of risk related to specialized accounts (Taylor 2000) which suggests higher quality auditors may make more precise assessments of risk and be relatively less likely to issue a GIKAM.[4]

Finally, I expect auditor independence is associated with GIKAM reporting decisions. Prior literature documents that nonaudit fees, a proxy for auditor independence, are negatively associated with the likelihood a client will recognize goodwill impairment suggesting auditors are more willing to acquiesce to their client's preferred accounting treatment based on financial considerations (Carcello, Neal, Reid, and Shipman 2020). I expect a similar relationship to exist for GIKAM reporting where more independent auditors are more likely to issue GIKAMs.

Second, extant archival research typically treats KAMs homogenously and fails to document market reactions (e.g. Gutierrez et al. 2018).[5] However, many KAMs relate to

[4] An alternative explanation for a negative relationship between auditor quality and GIKAM likelihood is that higher quality clients tend to select higher quality auditors and goodwill impairment may be less likely among these higher quality clients.

[5] Other concurrent studies examine the market impact of CAM reporting topics in light of expectations and investor sentiments, notably Huang (2021) and Burke, Hoitash, Hoitash, and Xiao (2021). Huang (2021) finds that CAMs are informative when they reinforce investors' prior beliefs and Burke et al. (2021) find that unexpected revenue CAMs influence the market's reaction to revenue news. These studies are discussed in more detail in the following chapters.

known risks and only unexpected KAMs should be informative. I predict unexpected GIKAMs are informative of the risk of future goodwill impairment and lead to market outcomes. When a GIKAM is not expected and is included in the auditor report (positive unexpected), it suggests a greater likelihood of future goodwill impairment which I expect to be associated with a negative price reaction. When there is not a GIKAM, but one is expected (negative unexpected), it suggests a lower likelihood of goodwill impairment which I expect to be associated with a positive price reaction. In addition, I expect unexpected GIKAMs, in either direction, to be associated with increased trading.

Finally, I consider the relationship between GIKAM reporting and goodwill impairment recognition. There are two reasons to expect GIKAMs to be associated with a higher likelihood of goodwill impairment recognition. From the auditor's perspective, issuing a GIKAM can be viewed as a skeptical action that I expect to be associated with increased scrutiny of the client's goodwill balance. Managers may also change their behavior in response to a GIKAM and opt for more conservative reporting. Combined, I expect managers who receive a GIKAM are more likely to recognize goodwill impairment. However, GIKAM reporting may be associated with a lower likelihood of recognizing goodwill impairment. Moral licensing theory posits that past moral actions give people justification to act in an immoral or unethical way (Blanken, van de Ven, and Zeelenberg 2015). Applying moral licensing theory to auditor reactions to fair value disclosure, Griffin (2014) finds that auditors are less likely to require an audit adjustment when clients provide greater disclosure related to assets reported at fair value. This finding suggests that auditors may view disclosure as a substitute for audit adjustments when making decisions related to subjective account balances. In my setting, the auditor

may view issuing a GIKAM license to perform a lower quality audit and not require a client to recognize a goodwill impairment.

I examine GIKAM status using a sample of UK firms over the period 2013 to 2020. I first develop a model that estimates the likelihood of a client receiving a GIKAM based on managerial incentives to delay impairment, auditor characteristics associated with audit quality, measures of auditor independence, and control variables associated with goodwill impairment. I expect my agency proxies are positively associated with GIKAM likelihood; auditor characteristics associated with auditor quality (size and specialization) are associated with either higher or lower GIKAM likelihood; and auditor independence (fee ratio and auditor tenure) is associated with a lower likelihood of issuing a GIKAM. I find that Big 4 firms are less likely to issue a GIKAM, while industry specialization is not significantly associated with GIKAM determinations. In additional analysis I differentiate between specialist and non-specialist Big 4 auditors and find that this association is due to non-specialist Big 4 auditors being much less likely to issue a GIKAM than specialist Big 4 auditors and non-Big 4 auditors. I also find evidence that auditors who appear to be less independent (higher fee ratios) are less likely to issue a GIKAM. I find no evidence of an association between GIKAM determinations and client agency incentives. The residuals from the estimation of the determinants model also provide estimates of unexpected GIKAM.

Next, I analyze unexpected GIKAM. I regress market outcomes (annual financial report date cumulative abnormal returns and abnormal trading volume) on unexpected

GIKAM and control variables based on prior research using an in-sample test.[6] Hypothesis 2a is supported if positive and negative values of unexpected GIKAM are associated with negative and positive price reactions, respectively. Hypothesis 2b is supported if the absolute value of unexpected GIKAM is associated with trading volume. Results from these models fail to document an association between unexpected GIKAM and price or trading volume. In additional analysis, I interact my measure of unexpected GIKAM with the change in earnings before interest taxes depreciation and amortization (*EBITDA_CH*). I document a positive relationship between abnormal returns and *EBITDA_CH* when the client receives a positive unexpected GIKAM, suggesting that positive unexpected GIKAMs may improve the credibility of earnings news.

Finally, I test my third hypothesis by examining whether issuing a GIKAM is associated with the likelihood and amount of goodwill impairment recognized by the client. Using a pooled sample, I estimate goodwill impairment outcomes based on whether a firm received a GIKAM. I next create a propensity score matched (PSM) sample of firms that did and did not receive a GIKAM using a logistics determinants model that predicts the likelihood a firm would receive a GIKAM. Using this matched sample, I estimate goodwill impairment outcome (recognition of impairment and impairment amount) based on whether the client received a GIKAM and control variables associated with goodwill impairment. Results of both tests indicate that firms who receive a GIKAM are more likely to recognize goodwill impairment and recognize a greater amount of goodwill impairment than firms that do not receive a GIKAM. In

[6]"Annual financial report date" refers to the date the full annual report including KAMs is released to the public.

additional analysis, I examine whether receiving a GIKAM is associated with future goodwill impairment outcomes and document similar results. Together, results document a strong positive association between GIKAMs and both current and next period goodwill impairment recognition which is consistent with GIKAMs improving financial reporting quality.

My study makes several contributions to the literature. First, I provide evidence on the determination of KAMs as a joint function of client and auditor's characteristics. This is important because KAM determinations provide insights about the auditor's risk assessments. Results provide evidence that auditor independence and auditor quality influence risk assessment decisions and KAM reporting whereas client agency incentives do not appear to have an effect. Analyzing KAMs is an ideal way to investigate risk assessments because limitations of studying risk assessments in both archival and behavioral settings are avoided. Specifically, archival literature typically uses audit fees as a measure of risk, but auditors have economic incentives to increase audit fees which may result in the appearance of higher risk assessments for auditors who are earning fee premiums. A similar incentive does not exist for KAM reporting. With experimental studies, it is difficult to obtain subject variation in auditor type (i.e. Big 4 and non-Big4; Specialists) and to replicate situations where independence would be impaired.

Second, results of market outcomes tests provide evidence on whether unexpected GIKAMs have information content to investors. Prior literature generally documents that KAMs are not informative in the general sense but provides limited evidence on whether

unexpected KAMs are informative.[7] Results provide evidence that GIKAMs are informative to price and trading outcomes when they are not expected but results are very sensitive to model specification. These results should be of interest to investors considering using KAMs for trading as well as regulators interested in improving the informativeness of the audit report.

Finally, results of goodwill impairment outcomes tests contribute to the literature on the relationship between KAMs and financial reporting outcomes.[8] Prior literature generally examines this relationship by focusing on adoption of KAM reporting in a jurisdiction (e. g. Reid, Carcello, Li, and Neal 2019) or general characteristics of KAMs such as length and topics (e. g. Gutierrez et al. 2019). I extend this literature by documenting that GIKAM reporting decisions are positively associated with the recognition of material goodwill impairment and the amount of goodwill impairment recognized. This result is also relevant to behavioral research that examines the effect of KAM consideration on audit adjustment decisions (e.g. Ratzinger-Sakel and Theis 2019; Asbahr and Ruhnke 2019), as well as providing evidence on whether the act of issuing a KAM influences account level outcomes. These results should be of interest to regulators tasked with improving financial reporting quality as well as audit researchers.

[7] Burke, Hoitash, Hoitash, and X. Xiao (2021) find that unexpected revenue CAMs influence the market's reaction to price news, but unexpected revenue CAMs are not significant by themselves. While their study performs similar tests, I expect there to be significant differences between how goodwill impairment KAMs are determined by auditors and used by investors, relative to revenue CAMs.

[8] I use "financial reporting outcomes" when referring to the conceptual outcomes of my third hypothesis because I expect results to be generalizable to KAM topics that are not directly associated with the recognition of a gain or loss. "Financial recognition" or "loss recognition" are more appropriate terms when describing goodwill impairment recognition specifically.

I organize the rest of my dissertation as follows. Chapter 2 provides an institutional background and reviews prior literature, Chapter 3 develops hypotheses, Chapter 4 describes the research design, and Chapter 5 presents the sample selection. Chapter 6 presents my results, I perform additional analysis in Chapter 7, and Chapter 8 concludes.

Chapter 2: Institutional Background and Literature review

Regulators around the world have changed audit reports to include auditor provided disclosure of risks that most significantly impact the audit. Research on expanded auditor reports generally addresses the informativeness to investors, changes in auditor behavior and audit quality, or the potential impact of expanded reporting on the auditor's legal liability. Early research relying on experiments and archival research has progressed as data has become available in various jurisdictions.

2.1 Expanded audit reports

In 2013, the Financial Reporting Council (2013) adopted ISA (UK and Ireland) 700, which requires auditors to, among other things: "Describe those assessed risks of material misstatement that were identified by the auditor and which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team," for fiscal years ending after September 30, 2013 (FRC 2013, 6). These risks of material misstatement (RMM) were required in the UK from 2013 until the FRC adopted the international reporting standard for KAMs.

In 2015, the IAASB adopted reporting standards that require auditors to report key audit matters (KAM), among other changes, for audits of financial statement periods ending on or after December 15, 2016 (IAASB 2015). Under these standards, KAMs are defined as: "Those matters that, in the auditor's professional judgment, were of most significance in the audit of the financial statements of the current period. Key audit

matters are selected from matters communicated with those charged with governance" (IAASB 2015, 5). KAMs are determined based on higher risk areas, significant auditor judgement required, and significant transactions and auditors are required to communicate the process of determining the KAM, how the KAM was addressed, and the location of the KAM on the financial statements (IAASB 2015).

The PCAOB adopted AS3101 on June 1, 2017 which increases audit reporting requirements to include the reporting of critical audit matters, auditor tenure, a statement on independence, addressee, enhancement to basic elements of the report and standardized form (PCAOB 2017). These changes go into effect for audit reports of accelerated filers ending on or after June 30, 2019 and December 15, 2020 for all other required firms. The change is an attempt to improve the relevance of the audit report to shareholders and reduce information asymmetry between investors and management (PCAOB 2017). The most significant change in this standard is requiring critical audit matter (CAM) reporting. CAMs are defined as: "any matter arising from the audit of the financial statements that was communicated or required to be communicated to the audit committee and that relates to accounts or disclosures that are material to the financial statements and involved especially challenging, subjective, or complex auditor judgment" (PCAOB 2017, 16).

Identification of the CAM involves consideration of the risk of material misstatement, degree subjectivity and judgement required by the auditor, nature and timing of significant transactions and audit effort to address the matter, and nature of audit evidence obtained. Once identified, auditors are required to communicate, in the audit report, the considerations that led to the determination of the CAM, how the matter

was addressed, and refer to relevant financial statement accounts or disclosures (PCAOB 2017). PCAOB guidance suggests that most audits are expected to have a CAM and that while CAMs should be based on inherent risks (and should therefore not vary by auditor), CAM determination requirements are principles based and may vary based on the auditor's judgement of the specifics of the audit (PCAOB 2019).

While RMMs, KAMs, and CAMs are similar, there could be significant differences in how they are determined and their outcomes. For example, RMMs are matters that had "*the greatest effect on the audit*," KAMs are matters that were "*of most significance,"* and CAMs are "*any matter arising*." This wording suggests CAMs have the broadest definition and a relatively lower level of risk would be required for an auditor to determine a matter is a CAM compared to either RMMs or KAMs. Whereas RMMs and KAMs have more common definitions suggesting only the riskiest matters need to be reported.

While differences exist between CAMs and KAMs (RMMs), most audits in both the US and UK are performed by firms that belong to global audit firm networks that likely share methodologies across jurisdictions (Ege, Kim, and Wang 2019). Therefore, it is likely that RMM/KAM determinations made in the UK are similar to CAM determinations made in the US. I therefore expect evidence found in RMM and KAM research to be generalizable to CAMs in the US and vice versa.

2.2 Review of KAM literature

In this section, I review the literature on KAMs and expanded reporting as it relates to the impact to investors and impact on accounting, audit quality, and determinants of KAM topics.[9]

2.2.1 Impact on investors

Early research on KAMs and investors was behavioral and generally supports the informativeness of KAMs to investors. Christensen et al. (2014) test whether nonprofessional investors alter their investing decisions in response to CAM disclosure. They find that investors who receive a CAM paragraph are more likely to change their investment decision than investors who receive the standard audit report or those who receive the same information in a footnote. These findings suggest that CAMs contain information that is important to investors and the source of the information is also important.

Köhler et al. (2020) examine the relationship between goodwill impairment KAMs and investing decisions made by professional and non-professional investors by manipulating KAM wording to suggest either small or large changes in key assumptions would lead to impairment. They find that professional investors use this information to draw their attention to issues they were not aware of, but non-professional investors have difficulties processing KAM information. Consistent with this finding, Carver and Trikle (2017) find that CAMs reduce the readability of the audit report for non-professional

[9]Another significant stream of literature exists which examines the impact of expanded auditor reports on the assessments of auditor legal liability. That research is omitted because it is not directly relevant to this study.

investors and do not inform investors' valuation judgements. However, they do find CAMs lower management's credibility when earnings just meet expectation.

Using eye tracking software to measure participant attention, Sirois, Bedard, and Bera (2018) examine the informativeness of KAMs while graduate accounting student participants take the role of junior loan officer to analyze financial statements with an auditor report with: no KAM section, one KAM, or three KAMs. They find that participants pay more attention to financial statement notes when they are identified as a KAM without paying less attention to non-KAM notes. Participants who were presented audit reports with three KAMs also paid more attention to KAM notes but paid less attention to non-KAM notes. These findings suggest that KAMs focus the users' attention to specific parts of the financial statements. However, Sirois et al. (2018) do not examine whether these KAMs affect the users' final decision.

Boolaky, and Quick (2016) examine expanded auditor reports more generally by performing an experiment where 105 German bank directors are given financial statements and an auditor report and asked to evaluate the firm's financial statements, audit quality, and likelihood of extending credit. They do not find a significant association between inclusion of a KAM related to the evaluation of an environmental claim in the auditor report and participants' valuation of the financial statements, audit quality, or likelihood to extend credit. This result suggests KAMs may not be useful in debt markets, but it is possible that the specific KAM is not informative in the studied setting. Additionally, participants gave their likelihood they would extend credit not what the credit terms would be. It is possible this environmental KAM may have increased the cost of debt for the firm but not their likelihood to be approved of a loan in general.

Rapley, Robertson, and Smith (2021) examine the relationship between CAM disclosure and investment intentions of nonprofessional investors utilizing MTurk participants. They hypothesize that CAMs reduce investment intentions because CAMs negatively impact management disclosure credibility. Consistent with this expectation, they find participants have lower investment intentions when CAMs are disclosed relative to a disclosure stating no CAMs were identified. This relationship is mediated by the negative effect of CAM disclosure on the risk of material misstatement and management credibility. In addition, CAM disclosure increases perceived audit quality which suppresses the effect of CAM disclosure on investment intentions.

Porumb, Zengin-Karaibrahimoglu, Lobo, Hooghiemstra, and de Waard (2021) examine the impact of RMMs on private debt markets in the U.K. Using a difference-in-difference design to compare London Stock Exchange (LSE) Main Market RMM adopters to LSE Alternative Investment Market (AIM) nonadopters, they find a reduction in loan spread and an increase in loan length during the post period for adopting firms. Next, they find that the number of unique RMMs (i.e., those not disclosed in the audit committee report) are associated with a decrease in loan spread. Together these results suggest that expanded audit reports provide information that is useful to private debt markets.

Together, these studies suggest that KAMs are informative at times and sophisticated investors may be better equipped to analyze information contained in KAMs. However, in terms of KAM content, there does not appear to be a consensus on whether KAM topics or content influence the usefulness of KAMs to investors.

Contrary to the behavioral research evidence, later archival research does not support that investors use KAMs. Bedard et al. (2019) study the effect of justifications of assessments (JOAs), which are similar to KAMs and have been required in France since 2003. They find that neither first-time implementation nor new JOAs are associated with abnormal returns or abnormal trading volume. Additionally, they do not find an association between JOAs and audit quality proxied by audit report lag, abnormal accruals, and audit fees. These results suggest that the expanded audit report in France did not have the intended outcome of improving the informativeness of the audit report or audit quality.

Gutierrez et al. (2018) examine the effect of expanded auditor reports in the UK on capital markets, audit quality, and audit fees during the period 2011 to 2015. They do not find that expanded audit reports had a significant impact on investor reactions to the audit report, audit quality, or audit fees when compared to the period before expanded reports and to UK firms that were not required to have expanded reports. In a later study, Gutierrez, Minutti-Meza, Tatum, and Vulcheva (2021) examine the adoption of KAM reporting for UK AIM firms after July 2017. AIM firms are important to study because they generally have worse information environments than larger LSE Main Market firms which could cause auditor risk reporting to be more informative. In difference-in-difference analysis, Gutierrez et al. (2021) document an increase in abnormal trading volume for AIM firms in the post period relative to LSE Main Market firms that had already adopted expanded audit reports. However, these results are sensitive to the trading volume proxy used and they do not find a significant change in abnormal returns, audit costs, or audit quality following KAM adoption. Liao, Minutti-Meza, Zhang, and

Zou (2019) perform similar analysis for firms in Hong Kong finding that KAMs are not informative to investors and do not have a significant impact on audit quality or fees. Goh, Li, and Wang (2020) perform a difference-in-difference test of KAM adoption for firms in mainland China and find an increase in abnormal trading volume and greater earnings response coefficients after adoption, but they do not document a change in abnormal returns.

Lennox et al. (2019) examine the impact of RMMs in the UK on investors. They find that RMMs are not informative using short-window reactions but are informative using long-window tests. A potential explanation for the lack of significance in the investing setting is that many RMMs had been disclosed elsewhere. To test this assertion, Lennox et al. (2019) review the prior year financial statements to identify risks that were previously identified and reperform tests using "new RMM" as a variable of interest. Even when analyzing these RMMs they do not find they significantly influence investor behavior. However, they note that it is possible these risks could have been disclosed through other sources such as the media.

While archival studies using data from China, France, Hong Kong, and the UK generally fail to provide evidence of a relationship between KAMs and market reactions, early studies using U.S. data provide evidence that CAMs are informative in some instances. Burke et al. (2021) examine economic outcomes of CAMs using a sample of first year CAM reports in the US. In difference-in-difference analysis comparing large accelerated filers who were required to include CAMs with smaller US firms not subject to CAM requirements, they find no difference in cumulative abnormal returns around the audit report filing date.

Using a sample of first year CAM reports in the U.S., Burke et al. (2021) examine the determinants and consequences of CAM reports. They do this by developing a determinants model that predicts the likelihood a firm would receive a revenue CAM based on the firm's financial characteristics, internal control quality, restatements, and auditor characteristics. Using this model, they identify unexpected nondisclosure of revenue CAMs as firms with predictive values in the top quintile that did not have a revenue CAM.[10] This measure of unexpected revenue CAMs is then used to analyze the relationship between CAM reporting and cumulative abnormal returns. They document a positive market reaction to revenue news when the client did not receive a revenue CAM, but one was expected (negative unexpected revenue CAM). Additionally, they document a negative market reaction to revenue news when the client received a revenue CAM when not expected (positive unexpected revenue CAM). These results suggest the CAM reporting influences how the market reacts to revenue news and therefore unexpected CAMs are informative.

Using textual analysis of CAM paragraphs, Klevak, Livant, Pei, and Suslava (2020) examine the information content of CAM reports on first year adoption of CAMs in the U.S. They find length of CAM section (number of characters and word count), number of verbs listed in CAM section, number of CAMs, and number of audit procedures are negatively associated with abnormal returns centered around 10K filing as well as return volatility in the 10 days prior to and following the earnings announcement. In addition, they examine analyst forecast revisions in the 10 days following the earnings

[10] Unexpected nondisclosure of revenue CAMs is similar in concept to negative unexpected GIKAMs. However, since different methods of identification are used, I maintain the distinction.

announcement and find longer CAM sections, CAM paragraphs that contain more verbs, and reports with greater number of CAMs are associated with negative earnings revisions and they find that all measures except the number of CAMs are positively associated with analyst dispersion. Together these findings suggest that CAMs are informative and used by analysts.

Finally, Huang (2021) examines whether investors' prior beliefs influence price reaction to CAM reporting using a difference-in-difference design to isolate first year CAM reporting firms. She finds that firms with a high level of short interest experience greater negative announcement returns than firms with lower levels of short interest consistent with investors using CAMs to confirm their prior beliefs about the firm. In addition, Huang (2021) documents improved quarterly earnings response coefficients for CAM adopting firms consistent with this effect being driven by Big4 firms and clients that have more CAMs suggesting that CAMs may be viewed as an indicator of audit quality.

In summary, extant archival research does not document a general relationship between KAMs and market. As noted by Lennox et al. (2019) a reason could be that KAMs could have already been disclosed. Another explanation could be that, regardless of prior disclosure, the market anticipates KAMs based on macroeconomic, industry, or firm characteristics or inherent risks. For example, the most common KAMs in the UK are for revenue recognition which has a high level of inherent risk.[11] However, more

[11] In the years, 2013 – 2019 3,355 of 17,225 KAMs were classified as revenue recognition.

recent literature points to specific circumstances where KAMs are informative to lenders (Porumb et al. 2021) and investors (Huang 2021; Burke et al. 2020; Klevak et al. 2020).

2.2.2 Accounting and Audit quality

A second strand of KAM research examines the impact of KAMs and new reporting standards on accounting and audit quality. Gold, Heilmann, Pott, and Rematzki (2020) perform an experiment which examines the role of KAM reporting on management reporting behavior using 143 German financial statement preparers as participants. Participants receive a prior year audit report which had no KAM section, a KAM section with a goodwill impairment KAM with firm-specific information, or a KAM section with a goodwill impairment KAM with generic wording. Participants then determine the amount of goodwill impairment to record. They find that participants who receive an audit report with a KAM record a greater amount of goodwill impairment than those who received the audit report without a KAM. This suggests that knowing a matter is subject to increased auditor scrutiny will reduce managers' aggressive reporting behavior and improve accounting quality.

Other research examines whether KAMs influence auditor judgements and behavior. Reid, Nelson, and Carcello (2019) perform an experiment using audit partners and senior managers from the six largest audit firms in the UK.[12] Participants are randomly placed into three reporting regimes: an audit report without RMMs, an audit report with RMMs, or an audit report with RMMs and audit findings. In the RMM states, the RMM related to a deferred tax asset which would likely need to be impaired.

[12] Participants were identified from Deloitte, EY, KPMG, PwC, Grant Thornton, and BDO.

Participants then estimate the amount of write-down they believe management will record of the deferred tax asset and what the write-down would be in the audited financial statements with the difference in these amounts being classified as an audit adjustment. They find there is no significant difference in the amount of audit adjustment between the no RMM group and the RMM without findings group, but the RMM with findings group reported lower audit adjustments. This result suggests auditors may be willing to acquiesce to clients if they are given the opportunity to communicate their findings.

In a similar experiment, Ashbahr and Ruhnke (2019) examine the association between KAM reporting and auditor judgements and actions by performing an experiment with German Big 4 auditors. Participants are given information about a warranty liability and asked to assess the reasonableness of the estimate, likelihood an adjustment would be required, and the size of the adjustment. The KAM reporting is manipulated such that the warranty liability was already determined to be a KAM, or no KAM reporting would take place. They find no difference in reasonableness assessments but find that KAM participants were less likely to suggest an adjustment and suggested adjustment amounts were smaller.

Finally, Ratzinger-Sakel and Theis (2019) examine the effect of KAM consideration on auditor skeptical action and judgement. Experienced auditors from two German Big 4 firms are asked to evaluate the reasonableness of a client's goodwill balance and likelihood they would require an adjustment. To manipulate KAM consideration, participants are either told they would assess the likelihood goodwill would be reported as a KAM or assess the likelihood goodwill impairment would be communicated with government (KAM not considered). In this experiment, participants

who considered KAMs have higher assessments of the client's goodwill balance, suggesting less skepticism, and no significant difference in the likelihood of requiring an audit adjustment. This is consistent with KAM consideration impairing auditor judgement making them more likely to acquiesce to the client's preferred accounting treatment. Contrary to the intended effects of KAM reporting, these studies suggest that KAMs may reduce audit quality. However, the findings from these experiments are not entirely consistent with each other and differences in results could be due to differences in experimental design or setting.

Archival research on the relationship between expanded audit reports and audit quality is also mixed. Reid, Carcello, Li, and Neal (2019) use a difference-in-difference design to study the impact of expanded audit reports in the UK. Compared to similar sized US and other European firms not subject to expanded audit reports, they find that audit quality improved for affected UK firms without increasing audit fees or audit lag. These findings suggest expanded audit reports had the intended consequence. Similarly, Li, Hay, and Lau (2019) use a difference-in-difference design to examine the impact of the new audit report in New Zealand on audit quality and audit fees. They find audit quality improved and audit fees were significantly higher in the year after adoption.

Zeng, Zhang, Zhang, and Zhang (2021) use a difference-in-difference design to examine KAM reporting adoption in China and document improved audit quality using discretionary accruals, small earnings surprises, below-the-line adjustments, the likelihood of issuing a modified opinion, and audit fees as measures of audit quality. In cross sectional analysis, Zeng et al. (2021) document the number of KAMs are positively associated with each audit quality measure suggesting KAMs indicate audit quality and

auditors exert more effort to address KAM topics. In addition, these results are largely driven by non-State-Owned enterprises.

Finally, Zhang and Shailer (2020) examine the relationship between RMM reporting and auditor effort by testing if changes in RMM reporting is associated with the change in audit fees. They find that audit fees increase when a new RMM is added but increases are offset when an RMM is also dropped (e.g. adding a goodwill RMM and dropping a revenue RMM results in no audit fee change) and no change in fees when an RMM is dropped without adding another RMM. From these results, Zhang and Shailer (2020) conclude that RMMs capture auditor effort.

Other research finds conflicting evidence. Gutierrez et al. (2018) examine the effect of expanded auditor reports in the UK capital markets, audit quality, and audit fees during the period 2011 to 2015. They find that new reporting requirements are not associated with a change in audit quality or audit fees. Liao et al. (2019) examine the implementation of KAMs in Hong Kong using a difference-in-difference design to compare audit quality and trading outcomes of firms located in mainland China and Hong Kong firms prior to implementation. They do not find a significant investor reaction measured by CAR, abnormal volume, or bid ask spread or audit outcome measured by discretionary accruals or audit fees.

Similar to international studies of KAMs, early studies using U.S. data provide mixed evidence on the impact of CAMs on accounting and audit quality. In difference-in-difference test of U.S. CAM reporting firms, Burke et al. (2021) do not document a significant difference in audit fees, discretionary accruals, or the likelihood of just meeting or beating analyst forecasts in the first year of CAM reporting compared to

smaller firms who were not required to report CAMs and the year prior to CAM reporting. However, in cross sectional analysis they find the number of CAMs, CAM report length, and use of uncertain words in CAM paragraphs are negatively associated with abnormal accruals. Additionally, they find the number of CAMs and textual properties of CAMs (i.e. words in CAM paragraph, use of uncertain words, response words) are associated with audit fees. Both findings suggest that CAMs convey information about risk and audit effort.

Drake, Goldman, Lusch, and Schmidt (2021) examine the relationship between CAM reporting and earnings management at the topic level, by examining the relationship between reporting of tax related CAMs and earnings management of tax accounts as well as the wording of tax disclosures. They find that firms that receive a tax CAM are less likely to use tax accounts to meet analyst forecasts in 2019, but the same firms were more likely to adjust fourth quarter effective tax rates to manage earnings in 2018. These findings suggest that tax related CAMs limit earnings management of tax accounts.

Drake et al. (2021) and Burke et al. (2021) also examine how CAM reporting influences the content of the footnotes to the financial statements. Drake et al. (2021) find that tax CAMs are associated with increases in tax disclosure length and the use of uncertain words which is consistent with managers reacting to CAMs by providing more information. In similar analysis, Burke et al. (2021) link CAM topics to footnote disclosures and find that when a CAM references a specific footnote the length and use of uncertain words in the footnote increases when compared to the prior year. Together,

these studies suggest managers react to CAM disclosures by adding to existing footnote disclosures.

Bentley, Lambert, and Wang (2021) examine how CAM paragraphs may influence managerial operating decisions. They hypothesize that CAMs are a form of costly disclosures which managers would prefer to avoid if possible, even to the point where they may change their operating decisions to avoid receiving a specific CAM. However, CAMs may be viewed as implied auditor support of the underlying area which managers' value more when engaging in risk increasing activities. Taken together, Bentley et al. (2021) predict CAMs provide incentive for managers to avoid risk decreasing activities that would result in an additional CAM but be more likely to engage in risk-increasing activities if there is a CAM. These predictions are supported by the results of three experiments where executive MBA students and Qualtrics experienced managers are asked to make either risk increasing or risk decreasing decisions. Together these results suggest that CAMs may influence managers operating decisions in favor of increased risk.

In summary, the literature generally does not appear to support the notion that KAM reporting improves overall audit quality. However, there is some evidence that specific KAMs may influence managerial reporting decisions related to those KAMs, improving audit quality. Alternatively, auditors may be more lenient on issues which are identified as KAMs by requiring smaller audit adjustments. Finally, archival literature provides some evidence of improved audit quality, but most studies fail to document a significant change. Together, there does not appear to be a clear consensus on the link between KAM reporting and audit quality.

2.2.3 Determinants of Key Audit Matters

Another active stream of literature related to expanded auditor reports relates to the determinants of Key Audit Matters. KAM determinants are a natural place to start research because variation in KAM topic choice could provide insights on how auditors identity and assess risk as well as influence what information is contained in KAMs. Early studies in the UK focus on either the number of KAMs or group KAMs into general topics.

Pinto and Morais (2019) examine the determinants of the number of KAMs in France, the UK, and the Netherlands and find that client complexity (number of segments), audit fees, and size are positively associated with the number of KAMs received. However, they do not find evidence of an association between auditor tenure and the number of KAMs. These finding suggest that the number of KAMs may capture client risk because firms with higher audit fees had more KAM topics.

Sierra-Garcia, Gambetta, Garcia-Benau, and Orta-Perez (2019) examine the determinants of the number of KAMs as well as the number of entity-level and account-level KAMs for UK firms from 2013 to 2016. They find that audit fees are positively associated with entity-level KAMs and negatively associated with account-level KAMs. This finding indicates that entity-level KAMs may indicate audit risk more so than account-level KAMs. Additionally, they find that PWC reports the highest number of KAMs relative to the other Big 4 firms and BDO. However, these findings may not be generalizable as they do not examine the variation between Big 4 and non-Big 4 audit firms beyond an indicator variable for BDO and rely on a small sample of audits.

Rousseau and Zehms (2020) examine audit firm and partner style on KAM topic determinations in the UK. Through adding audit firm and partner fixed effects in regression models, they find that both significantly improve the explanatory power of their models with partner style adding 10 to 19 percent and firms adding 2 to 5 percent explanatory power. Additionally, they find that partner demographics (gender, educational background, experience, education cohort, etc.) did not add significant explanatory power to determinants models. Together, these results suggest that audit partners have specific styles that are not easily identifiable.[13]

Lynch, Mandell, and Rousseau (2021) examine the determinants of tax related KAMs in the U.K. documenting that tax avoidance, tax risk, and differed tax assets are associated with a higher likelihood of receiving a tax related KAM. Additionally, Lynch et al. (2021) find that clients that stop receiving a tax KAM purchase more tax services in subsequent periods. These findings suggest that KAMs are the result of the underlaying financial circumstances of the firm and auditor independence may also play a role.

Burke et al. (2021) examine CAM determinants of US firms using models that estimate whether a client receives a CAM related to: long-term assets, revenue, mergers and acquisitions, taxes, credit losses, and contingencies. In these models, Burke et al. (2021) incorporate firm characteristics such as internal control quality, whether there was a restatement, CAM related and unrelated comment letters, auditor characteristics, and

[13]While Rousseau and Zehms (2020) provide evidence that audit partner style is a meaningful determinant of KAM reporting topics and language. However, I omit audit partner fixed effects to avoid limiting my sample more than is necessary to answer my research questions. Rousseau and Zehms (2020) limit their analysis to partners who have at least five observations from two unique clients and audit firms that have at least three partners that qualify under this description. These data requirements are reasonable for their research question but are too strict for my sample given other requirements I impose.

client financial characteristics. They find determinants of CAMs vary by topics and related client financial characteristics are typically positively associated with receiving specific CAMs (e.g. firms with greater property plant and equipment balances are more likely to receive a long-term asset CAM).

Together this literature provides evidence that observable client and auditor characteristics influence the number and type of KAMs included in an audit report. However, to this point literature has typically focused on broad categories of KAMs leaving room for the study of specific KAMs, with the notable exceptions of Lynch et al. (2021) and Burke et al. (2021) who examine the determinants and outcomes of tax KAMs and revenue CAMs, respectively.

2.3 Goodwill accounting

Since 2004, goodwill accounting in the UK has been governed by IFRS 3 – Business Combinations (IASB 2020a). Goodwill is recognized as the difference between the amount paid for an acquired business less the fair value of identifiable assets and liabilities. IFRS 3 requires annual impairment testing for goodwill in accordance with IAS 36 – Impairment of Assets (IASB 2020a). Under IAS 36, goodwill is allocated to a cash generating unit and tested for impairment annually (IASB 2020b). If the carrying value of the cash generating unit exceeds the recoverable amount of the unit, then impairment needs to be recorded (IASB 2020b). This treatment is very similar to the accounting for acquisitions and goodwill impairment in the US under ASC 350.

Under US and International standards goodwill is the difference between the amount paid in an acquisition and the fair value of identifiable assets and liabilities.

Goodwill is allocated to the smallest identifiable cash generating unit and tested for impairment annually (IASB 2020a). Research related to goodwill focuses primarily on three questions: how goodwill is initiated, what influences the impairment decision, and what are the outcomes of impairment.

The goal of impairment testing is to make goodwill accounting more value relevant than goodwill amortization. The rationale behind this is that impairment testing allows managers to relay private information of future cash flows which should be informative to investors. Several studies provide evidence consistent with goodwill impairment being informative to investors in that they are associated with a negative market reaction to the announcement of goodwill impairment (Hirschey and Richardson 2002; Horton and Serafeim 2010; Knauer and Wohrmann 2016). However, this process potentially creates a conflict of interest for management for two reasons: 1) if they made the acquisition, impairment reflects poorly on their acquisition and 2) impairment reduces current earnings.

Ramanna and Watts (2012) test whether goodwill impairment is recorded consistent with the "private information" hypothesis or agency theory predictions that suggest managers delay impairment out of self-interest. They find evidence consistent with managers making impairment decisions based on agency theory incentives. Similarly, Henning, Shaw, and Stock (2004) find US and UK firms delay goodwill write-offs and time revaluations and Beatty and Weber (2006) find that firms are less likely to record goodwill impairment when impairment affects debt covenants, bonus plans, or could lead to delisting. These findings are not surprising given the negative outcomes of impairment.

Contrasting the incentive to delay impairment, auditors have incentive to pressure clients to accelerate the impairment of goodwill. Albersmann and Quick (2020) examine a sample of German firms from 2006 to 2013 and find that firms, on average, delay the impairment of goodwill but having a Big 4 auditor and high audit fees moderate this relationship while the nonaudit fee ratio and auditor tenure are associated with longer impairment delay. Goodwill impairment auditing can also lead to more extreme consequences. Ayers, Neal, Reid, and Shipman (2019) find that firms that record unexpected goodwill impairment are more likely to dismiss their auditor. This suggests that auditing goodwill may be a significant source of friction in the auditor-client relationship.

2.4 Summary of Literature

In summary, regulators expanded audit reports to include KAMs and CAMs to give investors more information about the audit process and improve the overall information environment. The addition of KAMs is generally supported by experimental research which finds that information is used by potential investors and users. On the other hand, archival research is mixed with most studies finding that KAMs are not informative to investors and not associated with changes in financial reporting quality. However, archival research currently in progress suggests that KAMs are informative in certain circumstances such as when they are unexpected or confirm investors prior beliefs.

Another strand of literature examines the determinants of KAMs. Given the principles-based nature of KAMs, how they are determined could have a big impact on their informativeness. Literature to date documents that material accounts and those

accounts that require a high degree of judgement are more likely to be determined to be a KAM. Goodwill is an area that fits this description well.

Under international accounting standards, Goodwill is capitalized as the purchase price of a company in excess of the fair value of identifiable assets. Goodwill is held at carrying value and tested for impairment annually. When management determines the fair value of goodwill is less than its carrying value, they are required to record a goodwill impairment loss. Prior literature documents that agency incentives as well as auditor characteristics are associated with the likelihood impairment is recognized. Given the incentives involved and difficult-to-verify estimates associated with fair value estimations, goodwill is among the most difficult areas to audit (e.g. Carcello et al. 2020) and one of the most common KAM topics.

Chapter 3: Hypothesis development

I develop my hypotheses in this chapter. First, I develop hypotheses related to the factors that influence the goodwill impairment KAMs (GIKAMs) reporting decision. I then examine the informativeness of GIKAMs to capital markets and as an indicator of audit quality.

I focus specifically on GIKAMs for three reasons. First, GIKAMs are among the most common KAMs issued in the UK. This is likely because goodwill is a difficult and potentially contentious area to audit where managers have incentive to delay impairment and auditors have incentive to limit opportunistic reporting. Second, GIKAMs are related to an identifiable event, recognition of goodwill impairment, whose determinants are well documented in prior literature. Using this literature as a foundation, I expect to be able to better develop GIKAM expectations than for other KAM topics and therefore identify unexpected GIKAMs which I expect to be the most informative. Finally, goodwill impairment is associated with market outcomes (e.g. Hirschey and Richardson 2002) and is a financial reporting outcome both of which can be used to measure GIKAM informativeness.

3.1 Determinants of GIKAMs

Auditing standards defining the KAM determination process are principle-based and as such KAM topic determinations are up to the auditor's discretion. I first examine the factors that influence the auditor in determining a GIKAM. This is an important

starting point because differences in the determination process may influence the informativeness of GIKAMs. For example, if auditors either issue GIKAMs for all firms with material goodwill or only when firms recognize goodwill impairment, then GIKAMs will not be informative because they will simply suggest that goodwill is material and difficult to audit or that impairment was recognized. However, variation from these extremes could have information content by signaling risk of future goodwill impairment or the auditor's professional skepticism. Prior literature on KAM topic determinations, audit quality, risk assessment, and agency theory inform my expectations for what factors influence the determination of GIKAMs.

3.1.1 Agency Conflict and GIKAMs

I begin by examining the association between managerial incentives to manipulate goodwill reporting and GIKAM determinations. Agency theory predicts that managers will manipulate accounting numbers to their advantage if given the opportunity (Jensen and Meckling 1976). Current accounting standards for goodwill impairment allow such an opportunity.

Goodwill impairment testing is a complex process in which managers use private, potentially unverifiable, information such as expected cash flows and strategic plans to inform their estimate of the fair value (FV) of goodwill. These attributes make FV estimates difficult to monitor and allows managers to opportunistically avoid recognizing impairment. Prior literature documents this behavior by showing contractual and reputational agency incentives are associated with a lower likelihood of recognizing goodwill impairment among firms that are expected to have goodwill impairment (Beaty

and Weber 2006; Masters-Stout, Costigan, and Lovata 2008; Ramana and Watts 2012; Li and Sloan 2017).[14]

While goodwill may be difficult to monitor in terms of limiting earnings management through goodwill, auditors may still be able to identify the agency incentives and increase their risk assessments accordingly. Prior literature documents that auditors consider earnings manipulation risk when making planning decisions (Bedard and Johnstone 2004). In addition, there is evidence that auditors consider agency incentives. Gotti, Han, Higgs, and Kang (2012) find that managerial ownership, a proxy for lower agency costs, is associated with lower audit fees suggesting that auditors consider agency costs in risk assessment decisions. Similarly, managerial equity compensation, an incentive to manage earnings, is associated with increased audit fees suggesting a higher assessment of risk (Kannan, Skantz, and Higgs 2014; Kim, Li, and Li 2015).[15]

Agency theory therefore suggests that managers with greater agency incentives to manipulate earnings can delay goodwill impairment because it is complex and difficult to monitor. However, there is also evidence that auditors consider manipulation risk and agency incentives when making risk assessment and planning decisions. As a result, I expect auditors to recognize agency incentives to delay or avoid goodwill impairment and are more likely to issue GIKAMs when there are greater CEO agency incentives.

[14] Ramana and Watts (2012) limit their sample to firms with material goodwill which had book to market values greater than one at the end of prior and current years. Beaty and Weber (2006) limit their sample to firms that goodwill balances greater than the difference between their market and book value of equity.

[15] Both studies find an association between changes in manager's equity ownership to return volatility (Vega compensation) and audit fees.

Hypothesis 1a: CEO agency incentives are positively associated with the likelihood of receiving a GIKAM.

3.1.2 Auditors and GIKAMs

I next examine if auditor quality is associated with the decision to determine if goodwill impairment is a KAM. Auditing standards set guidelines for determining KAM topics, but ultimately the decision to make an audit matter a KAM is up to the auditor's professional judgement as to what matters have the highest risk of material misstatement. I posit that auditors' ability to identify risks and therefore KAM topics varies by auditor type with higher quality auditors making systemically different KAM determinations than lower quality auditors. To inform my discussion of this claim I examine literature related to two auditor characteristics commonly associated with audit quality: audit firm size and specialization.

Audit firm size (DeAngelo 1981; Becker, Defond, Jiambalvo, and Subramanyam 1998; Francis, Maydew, and Sparks 1999) and specialization (Balsam, Krishnan, and Yang 2003; Reichelt and Wang 2010) are associated with higher audit quality in general as well as limiting opportunistic goodwill impairment behavior (Albersmann and Quick 2020; Greco et al. 2017; Stein 2019). Stein (2019) argues that industry specialists have more experience auditing complex estimates and examining industry trends that allow them to better identify when opportunistic assumptions are being used and therefore limit opportunistic goodwill reporting behavior. Similar arguments can be made for Big 4 firms as they are much larger and have access to more resources like in house specialists to work on valuations (e.g. Francis and Yu 2009). Extending this reasoning to GIKAM determinations, I expect both specialist and Big 4 auditors to be better equipped to

identify when opportunistic FV estimates are being used to justify goodwill balances, assess goodwill as a higher audit risk, and therefore be more likely to issue a GIKAM.

Alternatively, goodwill impairment risk may not be difficult to detect given the unverifiability of inputs and its subjective nature, but the difference in impairment outcome is due to other auditor-client factors. Lennox and Kausar (2017) find auditors default to conservatism when faced with estimation risk. In experimental settings, Taylor (2000) and Low (2004) examine how specialist auditors assess risk relative to nonspecialist auditors. Taylor (2000) finds that nonspecialists assess a higher level of risk to specialized accounts than specialists because nonspecialists have lower confidence levels related to accounts they are inexperienced with. Low (2004) expands on these results and finds that specialist auditors are better at evaluating audit risks, incorporating those risks in their audit plan, and have higher quality audit plans relative to nonspecialist auditors, whereas nonspecialists did not adequately change their audit plans to address risk.[16] These findings suggest that when an auditor evaluates the client's goodwill, higher quality auditors can make better estimations of FV than lower quality auditors who are less confident of their risk assessments and may default to conservative reporting in the face of high estimation risk. Combined, lower quality auditors make lower quality FV estimations and err on the side of conservatism which make them more likely to issue a GIKAM whereas higher quality auditors' better estimations lead them to a lower likelihood of issuing a GIKAM.

[16] Low (2004) had industry specialist and mismatched industry specialists examine an audit case and make risk assessment and audit planning decisions. Those decisions were then evaluated by industry specialist senior managers and audit partners who evaluated the quality of the audit plan.

Since arguments can be made in either direction, I state my hypothesis without direction:

Hypothesis 1b: Auditor quality is associated with the likelihood of issuing a GIKAM.

Auditor independence may also play a role in GIKAM determinations. GIKAMs may be viewed as a criticism of management and their acquisition decisions. In fact, many practitioner comment letters in the US expressed opposition to CAM reporting because it may be viewed as a qualification of the related account (e.g. Pfizer 2013). Given these concerns, managers may exert pressure on auditors to not issue a GIKAM. Prior literature provides evidence that managers can impose harsh consequences on auditors for reporting bad news. Chung, Sonu, Zang, and Choi (2019) find that managers are willing to dismiss their auditor to avoid a going concern opinion. Ayers et al. (2019) find unexpected goodwill impairment is associated with subsequent auditor turnover. In addition, there is evidence that financial incentives that may impair an auditor's independence are associated with delayed recognition of goodwill impairment (Albersmann and Quick 2020; Carcello et al. 2020) suggesting that auditors may be willing to acquiesce to their client with regards to goodwill impairment recognition to continue the engagement.

If less independent auditors are willing to cater to their client's wishes with regards to goodwill impairment recognition, it is likely that they would do the same for GIKAM reporting that likely has lower costs of omission than failing to record impairment. Given these pressures and evidence, I expect auditors who are less independent to be less likely to issue a GIKAM.

Hypothesis 1c: Auditor independence is positively associated with the likelihood a firm receives a GIKAM.

3.2 Market Outcomes

I next examine if GIKAMs have information content for investors. For GIKAMs to have information content they need to either change the overall market valuation of the firm (cause a price reaction) or individual investors' valuation of the firm (cause a volume reaction) (Beaver 1968). Despite being a primary goal of expanded audit reports, research on the informativeness of KAMs provides mixed evidence. Early behavioral research documents that investors use KAMs by changing their investing decisions (Christensen et al. 2014; Sirois et al. 2018; Köhler et al. 2020). However, archival research generally does not find evidence that KAMs are used (Gutierrez et al. 2018; Liao et al. 2019) even when KAMs relate to new topics (Bedard et al. 2019; Lennox et al. 2019). A potential reason for these findings is that most KAMs are related to known or expected risks, which are already incorporated in the firm's stock price.

While prior literature does not attest to this direct issue, research on the effects of other audit report disclosures on trading activity may be helpful in forming expectations.[17] Issuing a going concern audit report is among the most severe reporting decisions auditors can make and they have severe consequences for the client. In their synthesis of going concern literature, Carson et al. (2013) find that going concern audit opinions are associated with negative market reactions when they are not expected.

[17] Burke et al. (2021) perform a similar test in that they examine the determinants and market outcomes of revenue CAMs and CAM reporting influences how the market reacts to revenue news. While that study is similar to mine, the differences between the underlying subject matter (goodwill impairment vs. revenue) are important. For example, goodwill impairment is a somewhat rare event that only represents bad news whereas revenue is recorded every year and can represent good, bad, or neutral news.

Menon and Williams (2010) suggest this finding is attributable to auditors having access to private information, which informs their decision to issue a going concern opinion.

A similar process may occur in GIKAMs determinations. When assessing risk of goodwill impairment, the auditor assesses management's estimation of FV which includes analyzing publicly available financial information as well as private information such as management's operational plans. In this way, GIKAM status may indicate the likelihood of goodwill impairment in the future such that firms with (without) a GIKAM are more (less) likely to recognize impairment.

While GIKAMs may be predictive of future impairment, that is not enough to lead to a market reaction. Expanding my GIKAM determination framework, I expect investors use a similar process when analyzing goodwill, but with less information than auditors. When auditors issue a GIKAM for firms with financial and market indicators that suggest low impairment risk (positive unexpected GIKAM), it signals that goodwill impairment is more likely. In this way, the auditor's GIKAM reporting provides information about the auditor's FV estimate that may reveal private information that is useful to investors. I therefore expect positive unexpected GIKAMs to be associated with negative abnormal price reactions consistent with the market reaction to goodwill impairment documented by prior literature (Hirschey and Richardson 2002; Li, Shroff, Venkataraman, and Zhang 2011, Bens, Heltzer, and Segal 2011; Knauer and Wohrmann 2016).

Unexpected GIKAMs could also signal good news if the goodwill impairment is less likely. For example, when the firm's fundamentals suggest goodwill impairment risk is high, but the auditor does not issue a GIKAM (negative unexpected GIKAM) the

absence of a GIKAM signals that goodwill impairment is less likely. If negative unexpected GIKAMs relay private information about a lower likelihood of future goodwill impairment, then I expect negative unexpected GIKAMs to be associated with a positive market reaction.

Given these arguments, I state my hypothesis as follows:

Hypothesis 2a: Positive (negative) unexpected GIKAMs are associated with negative (positive) price reactions.

Changes in trading volume may also provide evidence that unexpected GIKAMs have information content. Trading volume is a sign that individual market participants changed their risk allocation in response to information (Beaver 1968). Using Beaver's framework, it is possible for events to be associated with only a volume reaction if the event changes individual's expectations but not the market's valuation of the firm. Unexpected GIKAMs may be this type of information. If unexpected GIKAMs signal information about goodwill impairment risk, then I expect investors to use that information to adjust their risk allocations and for unexpected GIKAMs to be associated with increased trading volume.

Hypothesis 2b: Unexpected GIKAMs are associated with greater abnormal trading volume.

However, it is possible that unexpected GIKAMs do not have information content that leads to price or volume reactions. Going concern audit opinions are an extreme example of changes in the audit report and may not be analogous to unexpected GIKAMs. Unexpected GIKAMs may be more like explanatory language which Czerney, Schmidt, and Thompson (2019) find is not associated with abnormal returns or abnormal

trading volume. If this assertion is correct, then it is unlikely that unexpected GIKAMs will have information content. Extant archival literature generally fails to document market reactions suggesting that unexpected GIKAMs do not have information content (Gutierrez et al. 2018; Liao et al. 2019; Bedard et al. 2019; Lennox et al. 2019).

3.3 Goodwill Impairment Outcomes

Finally, I examine the relationship between KAM reporting and financial reporting outcomes. Prior literature on the relationship between auditor risk reporting and financial reporting outcomes is mixed but generally fails to document a direct effect (e.g. Gutierrez et al. 2018). However, KAMs may be associated with financial reporting outcomes by either signaling heightened auditor skepticism or by influencing the client's reporting behavior.

Nelson (2009, 4) defines professional skepticism as "auditor judgements and decisions that reflect heightened assessment of risk that an assertion is incorrect, conditional on the information available to the auditor" and that more skeptical auditors require more audit evidence to be assured that an assertion is correct. Through KAMs, auditors provide a signal of specific accounts they believe are of higher risk and require additional testing. In other words, KAMs are a signal of increased professional skepticism related to a specific matter. Applying this reasoning to goodwill impairment, I expect auditors who issue a GIKAM are more skeptical of the client's goodwill balance which leads to increased testing and an increased likelihood of requiring the client to recognize goodwill impairment, all else equal.

Alternatively, KAMs may be associated with reporting outcomes by influencing the client's reporting behavior. If the client is aware of the auditor's KAM reporting,

either from the prior period's audit report or through discussions with the client, they may be more conservative in their reporting of accounts that are KAMs.[18] In the context of goodwill, if the client expects the auditor applies more scrutiny to goodwill than other accounts, I expect the client to be more likely to recognize impairment. This expectation is consistent with Gold et al. (2020) who experimentally find financial statement preparers are more likely to recognize goodwill impairment when they are told goodwill was a KAM in the prior year.

However, issuing a GIKAM may give auditors moral license to perform a lower quality audit. Moral licensing theory posits that past moral actions give people the justification to act in an immoral or unethical way (Blanken, van de Ven, and Zeelenberg 2015). Griffin (2014) applies moral licensing to auditor's fair value decisions and finds that auditors are less likely to require audit adjustments when supplemental fair value disclosures are present suggesting that auditors view disclosure as a substitute to adjusting accounts. Similar results have been found with expanded audit reports. Reid, Nelson, and Carcello (2019) find that participants proposed smaller audit adjustments under a reporting regime with RMMs were supplemented with findings relative to regimes with RMMs and no supplemental findings. Additionally, Asbahr and Ruhnke (2019) and Ratzinger-Sakel and Theis (2019) find auditors are less likely to require an adjustment when an account is identified as a KAM. Together, these studies and moral licensing theory suggest that auditors who issue a GIKAMs may view the GIKAM as a

[18] An extension to this reasoning is that managers may shift their reporting aggressiveness from anticipated KAM accounts to anticipated non-KAM accounts to avoid auditor scrutiny. This practice could be an explanation for the lack of evidence between KAMs and audit quality documented by prior literature (e.g. Gutierrez et al. 2018; Liao et al. 2019) and consistent with the findings of Drake et al. (2021) that show that clients with tax related CAMs are less likely to manage earnings using tax accounts.

substitute for requiring the client to recognize goodwill impairment. Therefore, I expect GIKAMs to be associated with a lower likelihood a client recognizes goodwill impairment.

Since arguments can be made in either direction, I state my third hypothesis without direction:

Hypothesis 3: GIKAM reporting is associated with goodwill impairment outcomes.

Chapter 4: Research Method

In this section, I define empirical models to test my hypotheses. First, I develop a determinants model, which predicts the likelihood a firm receives a GIKAM. I next develop models to test whether unexpected GIKAMs are associated with abnormal returns and abnormal trading. Finally, I develop two models to test whether GIKAMs are associated with goodwill impairment outcomes.

4.1 Determinants Model

The usefulness of KAM reporting is expected to be contingent on how they are determined. I develop equation (1) by combining variables of interest relevant to hypotheses 1a, 1b, and 1c, control variables from goodwill impairment literature, and variables expected to directly influence the GIKAM determination (subscripts for firm and year are omitted here and for later equations unless necessary to understand the equation).

$$\ln\left[\frac{P(GIKAM=1)}{1-P(GIKAM=1)}\right]$$

$$= F(\beta_0 + \beta_1 BONUS + \beta_2 OWNERSHIP + \beta_3 TENURE + \beta_4 BIG4 + \beta_5 INDUSTRY\_SPECIALIST + \beta_6 IMPAIRMENT\_SPECIALIST + \beta_7 FEE\_RATIO + \beta_8 AUDITOR\_TENURE + \beta_9 MKTVAL + \beta_{10} MTB + \beta_{11} MKTIMPPCT + \beta_{12} MKTIMPIND + \beta_{13} LEVERAGE + \beta_{14} RETURN + \beta_{15} STDEV + \beta_{16} LOSS + \beta_{17} ROA + \beta_{18} EBITDA\_CH + \beta_{19} ACQUISITION + \beta_{20} GOODWILL\_PROP + \beta_{21} GOODWILL\_IMP + \beta_{22} KAMS\text{-}GIKAM + INDUSTRY\_FE + YEAR\_FE + \varepsilon) \quad (1)$$

Equation (1) is a logistic regression estimating the probability a firm will receive a GIKAM in a given year. *GIKAM* is an indicator variable equal to 1 if client received a KAM labeled as either "Goodwill" or "Goodwill and intangible assets" in the current year. Industry fixed effects based on 2-digit SIC code (*INDUSTRY_FE*) are included to control for differences in impairment risk by industry. Year fixed effects (*YEAR_FE*) control for macroeconomic events that influence impairment risk as well as changes to GIKAM determinations over time.

My variables of interest for hypothesis 1a capture agency incentives to delay goodwill impairment as documented by Beaty and Weber (2006) and Ramana and Watts (2012). First, *BONUS* is an indicator variable for managers with bonus compensation in the current year. Bonus compensation based on accounting numbers gives managers incentive to delay the negative impact to income from impairment. Second, *OWNERSHIP* is the value of shares held by the CEO divided by the firm's market value. Li and Sloan (2017) find that the market does not perfectly detect delayed goodwill

impairment recognition which results in temporarily inflated stock prices. Thus, CEOs with high stock ownership have incentive to delay goodwill impairment recognition. Third, *TENURE* is the number of years the CEO has been the CEO. This measure captures reputational motives to delay impairment of goodwill related to acquisitions the CEO was responsible for. Hypothesis 1a predicts a positive relationship between the probability a client receives a GIKAM and *BONUS, OWNERSHIP,* and *TENURE*.

I capture auditor quality to test hypothesis 1b using the indicator variables *BIG4*, *INDUSTRY_SPECIALIST* and *IMPAIRMENT_SPECIALIST*. *BIG4* is equal to one if the auditor is a Big 4 firm, zero otherwise. *INDUSTRY_SPECIALIST* is equal to one if the firm collects 30% or more of the audit fees in a 2-digit SIC code industry during a given year (Ayers et al. 2019). *IMPAIRMENT_SPECIALIST* is the number of clients that record goodwill impairment divided by the total number of clients per year (Greco et al. 2017). *BIG4, INSUSTRY_SPECIALIST,* and *IMPAIRMENT_SPECIALIST* are the variables of interest for Hypothesis 1b which does not make a directional prediction for the association with GIKAM likelihood. For each variable, a positive (negative) association with GIKAM likelihood suggests that higher quality auditors are more (less) likely to issue GIKAMs.

My variables of interest for hypothesis 1c capture factors that could impair auditor independence. Carcello et al. (2020) find goodwill impairment is less likely when the auditor's independence appears to be impaired by nonaudit fees. I use their measures of auditor independence. First, *FEE_RATIO* is nonaudit fees divided by total fees paid to the auditor. This measure captures financial incentives to alter GIKAM reporting to appease the client. In addition, Albersmann and Quick (2020) find that impairment delay is more

likely for longer-tenured auditors. *AUDITOR_TENURE* is the number of years of the auditor has audited the client and captures the potential decline in independence from a long auditor-client relationship. Hypothesis 1c is supported if there is a negative relationship between the probability a client receives a GIKAM and *FEE_RATIO* and *AUDITOR_TENURE*.

I control for goodwill impairment risk by including control variables that have been identified by prior literature to be associated with goodwill impairment. Market-based controls capture the market valuation of the firm and implied valuation of goodwill. *MKTVAL* is the log of the firms' market value of common stock and controls for client size. AbuGhazeleh et al. (2012) find that market value is negatively associated with goodwill impairment amount as the market appears to provide a reliable measure of goodwill valuation. I expect *MKTVAL* to be negatively associated with *GIKAM* likelihood. Market-to-book (*MTB*) ratio controls for the market's valuation of the firm's identifiable assets. Lower *MTB* values suggest that asset impairment is more likely; I therefore expect *MTB* to be negatively associated with *GIKAM* likelihood. *MKTIMPPCT* is the percent of the firm's market value below book value of assets (1 minus *MTB* for observations with *MTB* < 1) and *MKTIMPIND* is an indicator variable equal to one for firms with *MTB* less than one. *MKTIMPPCT* and *MKTIMPIND* indicate that the market values the firm's assets less than book value which indicates a higher likelihood of *GIKAM* issuance. *LEVERAGE* is a proxy for debt covenant violation costs and is calculated as total debt divided by total assets at the end of the year. The intuition behind this measure is that firms with greater leverage are more likely to be at risk of violating a debt covenant and it would be more costly to renegotiate debt, if needed. This pressure

gives managers incentive to avoid impairment, which could influence covenant ratios. *RETURN* is the one-year buy and hold stock return and standard deviation of the firm's daily returns over the current year (*STDEV*) control for market returns. Firms with negative returns or high volatility are expected to be more likely to receive a GIKAM.

I also control for financial attributes associated with goodwill impairment. I control for profitability with *LOSS* which is an indicator variable equal to one if the firm had negative income during the year, return on assets (*ROA*) calculated as net income divided by average total assets, and *EBITDA_CH* which is the difference in earnings before interest, taxes, depreciation, and amortization between the current and prior year divided by market value of equity (AbuGhazeleh et al. 2011; Carcello et al. 2020). I expect less profitable firms have a higher likelihood of receiving a GIKAM. *ACQUISITION* is an indicator variable equal to one if the firm performed a goodwill-increasing acquisition during the year (Carcello et al. 2020). Ayers et al. (2019) find recognition of goodwill impairment is more likely in years the firm has an acquisition. I expect auditors to scrutinize goodwill more heavily in the year of the acquisition making them more likely to issue a GIKAM. *GOODWILL_PROP* is the client's goodwill balance divided by total assets. This controls for the importance of goodwill in the client's balance sheet which I expect to be positively associated with audit risk and GIKAM likelihood.

I also add control variables that I expect to influence GIKAM determinations specifically. *GOODWILL_IMP* is an indicator variable equal to one if the firm recognized goodwill impairment greater than 0.5% of total revenue (Ayers et al. 2019; Carcello et al. 2020). As discussed in section 3, I expect clients that recognize goodwill

impairment to also have a GIKAM. *KAMS-GIKAM* is the number of KAMs in the firm's audit report minus GIKAMs. This measure accounts for the possibility that KAM determinations are not made independently. Since KAMs are matters of most significance to the audit, it is possible that the existence of other high-risk areas may make GIKAMs less likely. Alternatively, for certain clients, goodwill impairment risk may be relatively low but still the most significant audit risk which would make GIKAMs more likely.

4.2 Market Outcomes Model

I develop equations (2) and (3) to examine whether unexpected GIKAMs provide information content and test hypothesis 2a and 2b, respectively. Equations (2) and (3) are based on the cross-sectional model used by Gutierrez et al. (2018) who examine the information content of KAM reporting in the UK.

$$CAR = \beta_0 + \beta_1 UNEXPECTED\_GIKAM\_P + \beta_2 UNEXPECTED\_GIKAM\_N + \beta_3 MKTVAL + \beta_4 MTB + \beta_5 ROA + \beta_6 LOSS + \beta_7 EBITDA\_CH + \beta_8 LAG + \beta_9 BETA + \beta_{10} LEVERAGE + \beta_{11} VOLATILITY + \beta_{12} BIG4 + \beta_{13} INDUSTRY\_SPECIALIST + \beta_{14} IMPAIRMENT\_SPECIALIST + \beta_{15} KAMS\text{-}GIKAM + INDUSTRY\_FE + YEAR\_FE + \varepsilon \quad (2)$$

$$ABN\_VOLUME = \beta_0 + \beta_1 ABS\_UNEXPECTED\_GIKAM + \beta_2 MKTVAL + \beta_3 MTB + \beta_4 ROA + \beta_5 LOSS + \beta_6 EBITDA\_CH + \beta_7 LAG + \beta_8 BETA + \beta_9 LEVERAGE + \beta_{10} VOLATILITY + \beta_{11} BIG4 + \beta_{12} INDUSTRY\_SPECIALIST + \beta_{13} IMPAIRMENT\_SPECIALIST + \beta_{14} KAMS\text{-}GIKAM + INDUSTRY\_FE + YEAR\_FE + \varepsilon \quad (3)$$

I include industry fixed effects (*INDUSTRY_FE*) to control for trading outcomes that vary by industry. Year fixed effects (*YEAR_FE*) are included to control for macroeconomic and market events that may influence the market's reaction to goodwill impairment over time.

I use two measures of information content: cumulative abnormal returns (*CAR*) and abnormal trading volume (*ABN_VOLUME*). *CAR* captures the directional price movement expected to be associated with the disclosure of an unexpected GIKAM. *CAR* is the three-day market adjusted cumulative abnormal return centered around the annual report filing date calculated as the firm's daily returns minus same-day returns for the LSE value-weighted portfolio (Gutierrez et al. 2018).[19] Following Gutierrez et al. (2018), *ABN_VOLUME* is calculated as the average event period volume (number of shares traded) divided by the firm's mean estimation period volume. Event-period volume is the daily volume over the three-day event window around the annual report filing date scaled by shares outstanding. The estimation period is the 40-day period form t-61 to t-21. *ABN_VOLUME* captures disagreements in how markets interpret information (Beaver 1968) and is an ideal measure of information content when power is a concern (Cready and Hurtt 2002). Due to the potentially small sample size of firms with unexpected GIKAMs, *ABN_VOLUME* is an ideal measure in this setting.

I use three measures of unexpected GIKAMs in estimating equation (2). *UNEXPECTED_GIKAM* is a continuous variable equal to the residual from equation (1).

[19] "Annual financial report date" is the date the annual report including KAMs is released to the public. In the UK, firms release "final results" which are an earnings report that include substantially all financial statement information including reference to the audit opinion, but final results do not include KAM topics. KAMs are first released with the full annual report on the annual financial report date which is typically prior to the annual general meeting.

Using the residual, I then create *UNEXPECTED_GIKAM_P* and *UNEXPECTED_GIKAM_N* which are indicator variables that identify extreme examples of positive and negative unexpected GIKAMs, respectively. *UNEXPECTED_GIKAM_P* is an indicator variable equal to one for observations in the top quartile of *UNEXPECTED_GIKAM* in each year and zero otherwise. *UNEXPECTED_GIKAM_N* is an indicator variable equal to one for observations in the bottom quartile of *UNEXPECTED_GIKAM* in each year and zero otherwise. *UNEXPECTED_GIKAM_P* can be interpreted as being a situation where a client receives a GIKAM when their financial characteristics suggest they have relatively low goodwill impairment risk. Conversely, *UNEXPECTED_GIKAM_N* is a situation where client financial characteristics suggest goodwill impairment risk is high, but the firm does not receive a GIKAM. Hypothesis 2a is supported if *UNEXPECTED_GIKAM_P* is negatively associated with *CAR* or *UNEXPECTED_GIKAM_N* is positively associated with *CAR*. Either outcome suggests unexpected GIKAMs have information content that is incorporated in price.

Since hypothesis 2b does not make a directional prediction for the relationship between unexpected GIKAMs and trading volume, the absolute value of *UNEXPECTED_GIKAM* (*ABS_UNEXPECTED_GIKAM*) is the variable of interest in equation (3) and *UNEXPECTED_GIKAM_P* and *UNEXPECTED_GIKAM_N* are not included. Hypothesis 2b is supported if the absolute value of unexpected GIKAMs is associated with *ABN_VOLUME* in either direction. If *ABS_UNEXPECTED_GIKAM* is positively associated with *ABN_VOLUME,* then it suggests GIKAMs change individual investors' expectations. If there is a negative association between

ABS_UNEXPECTED_GIKAM and *ABN_VOLUME*, then it suggests unexpected GIKAMs increase audit report complexity and reduce trading volume.

I follow Gutierrez et al. (2018) for control variables. *MKTVAL* is the natural log of the market value of equity at the end of the year and controls for firm size. Prior literature documents that larger firms have better information environments which lead to smaller reactions to new information (e.g. Atiase 1985). I expect *MKTVAL* to be negatively associated with *CAR* and *ABN_VOLUME*. *MTB* is market value divided by book value at the end of the year and controls for growth opportunities. I expect growth opportunities to be negatively associated with *CAR* and *ABN_VOLUME* (Collins and Kothari 1989).

ROA is earnings before extraordinary items divided by total assets, *LOSS* is an indicator equal to one if the firm had net income less than zero during the year, and *EBITDA_CH* is the change in earnings before interest depreciation and amortization. *ROA*, *LOSS*, and *EBITDA_CH* control for profitability which I expect to be positively associated with *CAR*. It is unclear what association there will be between profitability and *ABN_VOLUME*.

LAG is the number of days between the final results date (earnings report) and the annual financial report date. I expect the information content to decrease as *LAG* increases (Atiase, Bamber, and Tse 1989; Knechel and Payne 2001). *BETA* is the slope coefficient of regressing the firm's daily stock returns on a London Stock Exchange value-weighted portfolio over the 220-day period (-250, -21) relative to audit report date (Gutierrez et al. 2018). *BETA* captures firm risk which is expected to be positively

associated with *CAR* and *ABN_VOLUME* (Collins and Kothari 1989). I also use two other proxies for risk *LEVERAGE* and *VOLATILITY* which I expect to be positively associated with *CAR* and *ABN_VOLUME. VOLATILITY* is the standard deviation in sales scaled by total assets over the prior three years.

BIG4, *INDUSTRY_SPECIALIST*, and *IMPAIRMENT_SPECIALIST* control for perceived auditor quality. Teoh and Wong (1993) find that perceived auditor quality is associated with higher earnings response coefficients which suggests higher-quality auditors produce more credible information.[20] I expect larger price (*CAR*) and volume (*ABN_VOLUME*) reactions for higher-quality auditors. *KAMS-GIKAM* is the number of non-GIKAM KAMs are included in the audit report. Prior literature documents that KAMs direct users' attention to the related footnotes and potentially draws attention away from other areas of the financial statements (Kohler et al. 2020; Carver and Trickle 2017; Sirois et al. 2018). If the existence of other KAMs is a signal of overall audit risk, as hypothesized for GIKAMs, then I expect *KAMS-GIKAM* to be negatively associated with *CAR* and positively associated with *ABN_VOLUME*.

4.3 Goodwill Impairment Outcomes Model

If GIKAMs signal the auditor's professional skepticism or influence managerial reporting decisions, then I expect those outcomes are observable in the decision to recognize goodwill impairment and the amount of impairment recognized. I test the relationship between GIKAM reporting and goodwill impairment recognition using

[20] Teoh and Wang (1993) use Big 4 auditors as their measure of auditor quality. I add *INDUSTRY_SPECIALIST* and *IMPAIRMENT_SEPCIALIST* because both are expected to be associated with the quality and perception of credibility of GIKAM determinations.

equations (4) and (5), which I develop using variables associated with goodwill impairment:

$$\ln\left[\frac{P(GOODWILL\_IMP=1)}{1-P(GOODWILL\_IMP=1)}\right] = F(\beta_0 + \beta_1 GIKAM + \beta_2 BONUS + \beta_3 OWNERSHIP + \beta_4 TENURE + \beta_5 BIG4 + \beta_6 INDUSTRY\_SPECIALIST + \beta_7 FEE\_RATIO + \beta_8 AUDITOR\_TENURE + \beta_9 MKTVAL + \beta_{10} MTB + \beta_{11} MKTIMPPCT + \beta_{12} MKTIMPIND + \beta_{13} LEVERAGE + \beta_{14} RETURN + \beta_{15} STDEV + \beta_{16} LOSS + \beta_{17} ROA + \beta_{18} EBITDA\_CH + \beta_{19} ACQUISITION + \beta_{20} GOODWILL\_PROP + \beta_{21} KAMS\text{-}GIKAM + INDUSTRY\_FE + YEAR\_FE + \varepsilon) \quad (4)$$

Equation (4) is a logistic regression that estimates the probability a client will recognize goodwill impairment greater than 0.5% (*GOODWILL_IMP*) of total revenue during the year.[21]

$$IMPAIRMENT\_AMT = \beta_0 + \beta_1 GIKAM + \beta_2 BONUS + \beta_3 OWNERSHIP + \beta_4 TENURE + \beta_5 BIG4 + \beta_6 INDUSTRY\_SPECIALIST + \beta_7 FEE\_RATIO + \beta_8 AUDITOR\_TENURE + \beta_9 MKTVAL + \beta_{10} MTB + \beta_{11} MKTIMPPCT + \beta_{12} MKTIMPIND + \beta_{13} LEVERAGE + \beta_{14} RETURN + \beta_{15} STDEV + \beta_{16} LOSS + \beta_{17} ROA + \beta_{18} EBITDA\_CH + \beta_{19} ACQUISITION + \beta_{20} GOODWILL\_PROP + \beta_{21} KAMs\text{-}GIKAM + INDUSTRY\_FE + YEAR\_FE + \varepsilon \quad (5)$$

I include industry (*INDUSTRY_FE*) and year (*YEAR_FE*) fixed effects in both models. Industry fixed effects based on 2-digit SIC code (*INDUSRTY_FE*) are included to control

[21] Ayers et al. (2019) use this definition of material goodwill impairment with the rationale that this is a commonly used measure of materiality. While UK firms now report materiality levels as part of the audit report, I do not believe differences between this estimation and actual materiality warrant hand collection of materiality.

for differences in impairment risk by industry. Year fixed effects (*YEAR_FE*) control for macroeconomic events that influence impairment risk over time.

The dependent variable in equation (4), *GOODWILL_IMP*, captures if the client recognized goodwill impairment greater than 0.5% of total revenue in a given year, while the dependent variable in equation (5), *IMPAIRMENT_AMT*, is the amount of goodwill impairment recognized by a client in a given year divided by the client's beginning goodwill balance. The intuition behind using both variables is that goodwill impairment is similar to an audit adjustment and that the expected influence of GIKAMs may not influence the decision to recognize impairment, but rather the amount of impairment recognized.

The variable of interest in both models, *GIKAM*, is an indicator variable equal to one if the client received a KAM labeled "Goodwill" or "Goodwill and intangible assets" in the current year. Hypothesis 3 predicts a nondirectional association between GIKAM and goodwill impairment outcomes. If *GIKAM* is positively associated with *GOODWILL_IMP* or *IMPAIRMENT_AMT* it would provide evidence consistent with auditors exercising higher levels of professional skepticism when they issue a GIKAM or managers being more conservative in their goodwill impairment decision when a GIKAM is present. Either finding is consistent with GIKAMs being associated with more conservative goodwill impairment outcomes. If *GIKAM* is negatively associated with *GOODWILL_IMP* or *IMPAIRMENT_AMT* it provides evidence consistent with moral licensing theory that issuing a GIKAM is associated with a lower likelihood of recognizing goodwill impairment or recognized amounts of goodwill impairment are

smaller. Either finding is consistent with GIKAMs being associated with goodwill impairment outcomes.

The independent variables from equation (1) are included to control for the likelihood of impairment. Control variables and expected signs in equations (4) and (5) are the same as the variables used in equation (1) except for *GOODWILL_IMP*, which is the dependent variable, and *IMPAIRMENT_SPECIALIST*. *IMPAIRMENT_SPECIALIST* is calculated as the ratio of an audit firm's clients that recognize goodwill impairment in a given year divided by total number of clients in the same year. This variable is excluded from equations (4) and (5) because estimating the likelihood a firm would recognize goodwill impairment based on *IMPAIRMENT_SPECIALIST* would create a circular relationship.

This test likely suffers from functional form misspecification since the circumstances that influence the audit risk related to goodwill impairment are expected to be very similar to those that lead to recognition of goodwill impairment. To address this concern, I also employ the propensity score matching technique described by Shipman, Swanquist, and Whited (2017). I first estimate the likelihood a firm will receive a GIKAM using equation (6):

$$\ln\left[\frac{P(GIKAM=1)}{1-P(GIKAM=1)}\right]$$

$$= F(\beta_0 + \beta_1 BONUS + \beta_2 OWNERSHIP + \beta_3 TENURE + \beta_4 BIG4 + \beta_5 INDUSTRY\_SPECIALIST + \beta_6 FEE\_RATIO + \beta_7 AUDITOR\_TENURE + \beta_8 MKTVAL + \beta_9 MTB + \beta_{10} MKTIMPPCT + \beta_{11} MKTIMPIND + \beta_{12} LEVERAGE + \beta_{13} RETURN + \beta_{14} STDEV + \beta_{15} LOSS + \beta_{16} ROA + \beta_{17} EBITDA\_CH + \beta_{18} ACQUISITION + \beta_{19} GOODWILL\_PROP + \beta_{20} KAMS\text{-}GIKAM + INDUSTRY\_FE + YEAR\_FE + \varepsilon) \quad (6)$$

Equation (6) is identical to equation (1) except *GOODWILL_IMP* and *IMPAIRMENT_SPECIALIST*. *GOODWILL_IMP* is omitted because the second stage analysis tests the likelihood of recognizing goodwill impairment. *IMPAIRMENT_SPECIALIST* is omitted because it has a circular relationship with *GOODWILL_IMP*. Results are then used to create a matched sample of firms that did or did not receive a GIKAM. I then estimate equations (4) and (5) using this matched sample.

Chapter 5: Sample and Data Collection

My sample consists of UK firms traded on the London Stock Exchange during the period 2013 to 2020. I collect data from Audit Analytics – Europe, Compustat Global, BoardEx – United Kingdom, and Event Study by WRDS. KAM data is collected from the Audit Analytics – Europe Key Audit Matters file. Audit Analytics groups KAMs into 65 categories, for the purpose of this study I consider any KAM identified as "Goodwill" or "Goodwill and intangible assets" to be a GIKAM. Using this definition there are 2,029 GIKAMs out of 25,674 KAMs during the testing period 2013 to 2020.[22] The Audit Analytics – Europe file is also used to collect data on audit engagements, tenure, and nonaudit fees.

Annual financial report dates are collected from the London Stock Exchange Regulatory News Service (RNS). In the UK firms' final results (earnings report) include substantially all financial statement items and typically reference the final audit opinion that will be included in the annual report, but do not include KAMs. Annual financial reports which include KAMs are then released in the future typically prior to the firm's annual general meeting.[23] I hand collected annual financial report dates and final results

[22] There were 916 KAMs identified as "Goodwill" and 1,113 KAMs identified as "Goodwill and intangible assets."
[23] During the period 2013 to 2020 the mean and median lag between final results and annual financial report date are 23.57 and 22 days, respectively.

dates for the firms in my sample by manually searching each firm using RNS https://www.investegate.co.uk/. For 97 firm-year observations, I am not able to determine when the annual report was released, and those observations are not used in my analysis.

Financial variables and security variables are collected form Compustat – Global. Goodwill impairment data is collected from Bloomberg. CEO compensation and tenure information are collected from BoardEx – United Kingdom.

< Insert Table 1 Here >

Table 1 presents the reconciliation of observations in each test in this study. I start with the intersection of Compustat and Audit Analytics for firms traded on the London Stock Exchange that had at least one KAM for 2013 through 2020. I remove 733 observations from financial and utility firms because they have different accounting rules and likely differ in their goodwill impairment risk and recording. Next, I remove 218 observations of firms with less than 1 million GBP in total assets, negative *MTB*, and negative total revenue. I then remove firms with missing control variables (867) and 306 observations with missing CEO data (*TENURE, BONUS_D,* or *OWNERSHIP*). Finally, the determinants model is a logistic regression that is unsolvable if any variable predicts *GIKAM* perfectly. Therefore, I remove 123 observations related to industries that perfectly predict the presence or absence of a GIKAM to arrive at a sample of 3,312 firm-year observations.

Panel B presents the reconciliation of the sample size for market outcomes analysis. Beginning with the full sample for the determinants model, I subtract 1,233 observations with missing data related to trading outcomes (*CAR, ABN_VOLUME,* and

BETA), and 97 observations where I was unable to identify when the audit report became available to the public. These restrictions result in a final sample for my outcomes models of 1,982 firm-year observations.

Panel C presents the reconciliation of the sample for goodwill impairment outcomes analysis. This sample begins with my final sample from Panel A less 200 observations related to industries that perfectly predict *GOODWILL_IMP*. This yields a final sample for the logit model of 3,112. In the propensity score tests, the sample consists of 797 paired observations yielding a sample of 1,594 observations in the *IMPAIRMENT_AMT* sample. Additional industry restrictions in the propensity score matched logit model reduce the sample to 1,429 observations.

Chapter 6: Results

In this chapter I present the results of testing each hypothesis. I begin by presenting the results of my determinants model to test H1a, H1b, and H1c. Results of the determinants model are then used to create unexpected GIKAM measures which form the variables of interest in analyses of price and volume reactions to GIKAM announcements (H2a and H2b). Finally, I analyze the impact of GIKAM reporting on goodwill impairment recognition (H3).

6.1 Determinants model

6.1.1 Descriptive statistics

Table 2 presents descriptive statistics for the determinants model during the testing period. To limit the impact of extreme values, all continuous variables are winsorized at the 1st and 99th percentiles. During the sample period 37.2% of audits received a GIKAM and 7.7% of firms recognized material goodwill impairment. Together these stats suggest that GIKAMs are much more prevalent than goodwill impairment recognition. Also of note, the average audit had 3.22 KAMs which is similar to prior literature in this area.

ROA has a mean and median value of -0.02 and 0.034, respectively, indicating that on average, firms have negative *ROA* and the sample is slightly skewed. When analyzing *ROA* by year, I find negative mean values in years following adoption of

KAMs by smaller LSE Alternative Investment Market (AIM) firms and positive values in early years when only LSE Main Market firms are included in the analysis. Similarly, *LOSS* has a mean value of 0.341 indicating that 34.1% of firm-year observations had losses in my sample. *EBITDA_CH* has a mean value of 0.00 and these values are similar to those reported by Gutierrez et al. (2018) when considering the differences in the respective samples.

The mean value of *BIG4* indicates that 66.1% of audits are performed by Big 4 firms in my sample. This is much lower than the percentage of Big 4 audits described by Gutierrez et al. (2018) – 93.6% for early adopting LSE Main Market firms, but higher than for LSE-AIM firms 32.5%. Since my sample includes both groups, a mean value of 66.1% appears to be reasonable. Likewise, *INDUSTRY_SPECIALIST* has a mean value of 31.4% indicating that roughly a third of firms are audited by a specialist. Finally, *IMPAIRMENT_SPECIALIST* has a mean value of 0.041 which indicates, on average, 4% of auditors' clients recognize material goodwill impairment every year.

I control for size using *MKTVAL* which is the log of market value of common stock in millions. The mean value of 5.464 indicates the average firm in the sample has a market cap of 579 million GBP. This amount is between the log-adjusted values of the LSE Main Market firms and LSE-AIM firms presented by Gutierrez et al. (2018). Other control variables are similar to those reported by prior literature, considering sample restrictions that are imposed by the data.

< Insert Table 2 Here >

6.1.2 Results

Results of estimating equation (1) are presented in Table 3.[24] Hypothesis 1a predicts a positive association between CEO characteristics and the likelihood a firm receives a GIKAM. Results show that none of the CEO characteristics measures, *BONUS_D, OWNERSHIP,* and *TENURE* are statistically significant at the 10% level or greater which suggests auditors do not consider these measures when making their GIKAM determinations.

< Insert Table 3 Here >

Hypothesis 1b predicts that auditor quality is associated with GIKAM determinations but does not predict a specific direction. Results for this set of variables are mixed. The estimated coefficient for *BIG4* (-.447) is negative and statistically significant at the 1% level suggesting that Big4 auditors are less likely to issue a GIKAM than non-Big4 auditors. Using mean values of control variables to estimate GIKAM probability, the coefficient suggests that Big 4 auditors are 9.9% less likely to issue a GIKAM than non-Big 4 auditors. There are two potential explanations for this finding. First, Big 4 auditors are higher quality and therefore make more precise risk assessments than non-Big 4 auditors which would lead them to not issue a GIKAM when lower quality auditors may default to conservatism and issue a GIKAM. Alternatively, Lawrence, Minutti-Meza, and Zhang (2011) documents differences in the clienteles of Big 4 vs non-Big 4 auditors with Big 4 auditors usually auditing larger and more

[24] To partially replicate prior literature, I first estimate equation (1) to estimate *GOODWILL_IMP*. Results from this test are in line with prior literature as evidenced by a negative coefficient on *TENURE*, which is significant at the 10% level and *IMPAIRMENT_SPECIALIST*, which is positively significant at the 1% level. In addition, control variables are either significant in the expected direction or are insignificant.

profitable companies. If this is the case, then Big 4 auditors could be less likely to issue a GIKAM because their clients' goodwill is less risky.

I also examine the relationship between auditor quality and GIKAM determinations with two proxies for specialization. First, *INDUSTRY_SPECIALIST* captures expertise gained by specializing in an industry. Results of equation (1) show that *INDUSTRY_SPECIALIST* is positively associated with GIKAM determinations, but not statistically significant at traditional levels. Second, *IMPAIRMENT_SPECIALIST*, captures auditors who are more familiar with auditing clients who are at risk of impairment. The intuition is that these auditors will make different risk determinations than auditors who have less experience with similar clients. However, results presented in column (2) do not provide evidence that impairment specialists are either more or less likely to issue a GIKAM than non-impairment specialists. Taken together the results provide some evidence that higher quality auditors are less likely to issue GIKAMs.

Hypothesis 1c predicts auditor independence is positively associated with GIKAM determinations. I use two proxies for auditor independence: *FEE_RATIO* and *AUDITOR_TENURE* and find that the *FEE_RATIO* is negatively associated with the likelihood that a client will receive a GIKAM and is significant at the 10% level. The coefficient for *FEE_RATIO* is -0.429 which suggests that a one standard deviation increase of a client's *FEE_RATIO* is associated with a 1.7% decrease in the likelihood the client will receive a GIKAM. This relationship is consistent with clients influencing their auditor's KAM reporting. Results do not show a significant association between *AUDITOR_TENURE* and GIKAM determinations. Together, these results present some evidence that auditor independence is associated with GIKAM reporting.

Control variables are either significant in the predicted direction or insignificant. *MKTVAL* captures client size and is positively associated with the likelihood a firm receives a GIKAM. On average, a one standard deviation increase in *MKTVAL* from the mean is associated with a 7.3% increase in the likelihood of receiving a GIKAM. This result indicates that larger firms are more likely to receive a GIKAM. Other significant variables include *MTB*, *MKTIMPPCT*, *LEVERAGE*, *ROA* and *ACQUISITION* which suggests auditors consider these attributes when assessing goodwill impairment risk. Increasing the value of each variable from the mean by one standard deviation is associated with the following changes in GIKAM likelihood: *MTB* 7.4% decrease, *MKTIMPPCT* 4.1% increase, *LEVERAGE* 6.1% increase, and *ROA* 5.2% decrease.

ACQUISITION, *GOODWILL_PROP,* and *GOODWILL_IMP* are all positive and statistically significant at the 1% level. This model estimates that firms that had an acquisition and recognized material goodwill impairment during the year are 9.3% and 26.5% more likely to receive a GIKAM, respectively. *GOODWILL_PROP* is also positive and statistically significant indicating that an increase of one standard deviation of goodwill divided by total assets is associated with an 18.3% increase in GIKAM likelihood. Taken together, the results of these control variables suggest that expected market indicators of goodwill impairment and the prominence of goodwill to the client's balance sheet are important indicators for determining whether a firm receives a GIKAM.

Finally, I include the variable *KAMS-GIKAM* to analyze whether the determination of KAM topics is made independently. KAMs are defined as the topics that are of the "most significance" (IAASB 2015) to the audit and therefore it is possible that the auditor's GIKAM decision may be influenced by the number of non-goodwill related

risks. Consistent with this assertion, results show that non-GIKAM KAMs are negatively associated with GIKAM likelihood. This result is consistent with the notion that KAMs signal the riskiest audit areas, not any area that meets a certain threshold of risk. The estimated coefficient for *KAMS-GIKAM* (-0.255) indicates moving from the median value of 3 non-GIKAM KAMs to 4 non-GIKAM KAMs reduces the likelihood of receiving a GIKAM by 5.2%. An implication of this is that GIKAMs may not be comparable across firms which would reduce their informativeness in general.

6.2 Market outcomes model

I next examine the informativeness of GIKAMs to the market by analyzing price and trading volume reactions to the announcements of GIKAMs and unexpected GIKAMs.

6.2.1 Descriptive statistics

Descriptive statistics for market outcomes tests are presented in Table 4. The variables of interest for Hypothesis 2a are *CAR* and *CAR 1-DAY* which have mean values of 0.001 and 0.003, respectively. These amounts indicate that on average firms have positive abnormal returns of 0.1% and 0.3% during the three-day period around the annual report date and on the annual report date, respectively. The variables of interest for Hypothesis 2b are *ABN_VOLUME* and *ABN_VOLUME_1_DAY* which have mean values of 1.586 and 1.708, respectively. For *ABN_VOLUME,* this indicates that there is

158.6% more trading volume per day during the three-day period around the annual report date than during the 40-day estimation period ending 20 days prior.[25]

UNEXPECTED_GIKAM is the residual from equation (1) such that positive values suggest a GIKAM was issued when not expected and negative values represent an absence of a GIKAM. *UNEXPECTED_GIKAM_P* and *UNEXPECTED_GIKAM_N* are indicator variables equal to one for the first and fourth quartiles of *UNEXPECTED_GIKAM*, respectively. *UNEXPECTED_GIKAM_P* and *UNEXPECTED_GIKAM_N* have mean values of 0.323 and 0.290, respectively. These values deviate from a mean of 25% because of differences in the sample size between the determinants and market outcomes model. *ABS_UNEXPECTED_GIKAM* is the absolute value of *UNEPXECTED_GIKAM* and is the variable of interest for Hypothesis 2a. The mean and median value of *ABS_UNEXPECTED_GIKAM* are 0.888 and 0.742 which suggests values are slightly skewed.

Control variables used in the market outcomes models are largely the same as those used in the determinants model. Differences include *LAG, BETA,* and *VOLATILITY. LAG* is the number of days between the release of the client's financial information (final results) and the release of the audit report. The mean and mediant of *LAG* are 23.58 and 22 days, respectively. These values are a few days less than the *LAG* reported by Gutierrez et al. (2018). This difference is likely due my decision to exclude observation where it was unclear the date of the audit report issuance.[26] *BETA* has mean

[25] The three-day period surrounding the final results date was excluded from the 40-day volume estimation window when it occurred during the window t-61 – t-21.
[26] Gutierrez et al. (2018) use the date of the client's annual general meeting when other information is not available. Using this date complicates price and volume analysis because the annual general meeting likely introduces information that is not related to the audit report.

and median values of 0.638 and 0.618 which indicate that, on average, firms in the sample are less risky than the market and a 1% change in the market would be associated with a 0.638% change in the average company's stock price. This average possibly deviates from 1 because the data restrictions imposed on the sample make the sample skew to larger less-risky firms. Finally, *VOLATILITY* is the three-year standard deviation in sales (t – t-2) and has mean and median values of 0.114 and 0.069. These values are lower than same variable reported by Gutierrez et al. (2018) which is likely due to sample and time differences.

<Insert Table 4 Here>

6.2.2 Results

Table 5 presents the results of estimating equation (2) using *UNEXPECTED_GIKAM_P* and *UNEXPECTED_GIKAM_N* as proxies for unexpected GIKAMs content. Columns 1-3 present the results of estimating annual report date abnormal returns (*CAR 1-DAY*) based on unexpected GIKAMs and control variables. Neither *UNEXPECTED_GIKAM_P* nor *UNEXPECTED_GIKAM_N* are significant in the expected direction. However, *UNEXPECTED_GIKAM_P* is positive and significant at the 10% level indicating positive announcement day returns when a firm received a GIKAM when one was not expected. This finding is contrary to the expectations discussed in Hypothesis 2a which predicts a positive unexpected GIKAM would be associated with increased goodwill impairment risk and negative market returns.

Columns 4-6 present the results of estimating three-day cumulative abnormal returns around the audit report release date based on unexpected GIKAMs and control

variables. Across each specification, neither measure of unexpected GIKAM was statistically significant.

Control variables in the models have either the expected sign or are statistically insignificant. Given the delay between final results which include substantially all financial statement items, it is not surprising that many of the control variables such as *LOSS* and *EBITDA_CH* are not statistically significant. However, results of each model indicate that firms audited by an *INDUSTRY_SPECIALIST* enjoy a 0.2% announcement day and 0.4% three-day cumulative abnormal return. Finally, *KAMs-GIKAM* is the number of non-GIKAM KAMs a firm receives and is a proxy for overall risk. *KAMs-GIKAM* has a negative coefficient indicating that each additional non-GIKAM KAM that a client receives is associated with abnormal announcement day return of 0.1%. However, this result is only significant at the 10% level and is not associated with three-day cumulative returns.

<Insert Table 5 Here>

Table 6 presents results of estimating trading volume reactions based on GIKAM reporting outcome and control variables shown in equation (3). The dependent variables in Columns 1 and 2 are *ABN_VOLUMNE* which is the three-day abnormal trading volume centered around the annual financial report date and *ABN_VOLUME_1_DAY* which is abnormal trading volume on the annual financial report date. The variable of interest in this model is *ABS_UNEXPECTED_GIKAM* which is a continuous variable equal to the absolute value of the residual of equation (1). In both specifications, *ABS_UNEXPECTED_GIKAM* is positive but not statistically significant indicating it is not associated with abnormal trading volume.

Control variables in this model are generally significant in the predicted direction or are not significant. *MKTVAL* captures the size of the firm and as expected, is negatively associated with abnormal trading. The coefficient in Column 2 suggests that a one percentage point increase in the size of the firm is associated with 13.8% less abnormal trading volume on the day the audit report is released, on average. Similarly, *LAG* is negatively associated with abnormal trading volume suggesting that each additional day between the final results date and the release of the audit report decreases trading volume by 3.3% of estimation period trading volume. Finally, *INDUSTRY_SPECIALIST* is positive and significant indicating that firms that have an industry specialist auditor have 32.7% more trading volume on the audit report announcement date than during the estimation period. This is consistent with higher quality auditors having more informative audit reports. *BETA* is the exception in that it has a negative coefficient that is highly significant in both specifications. *BETA* is the slope coefficient of regressing firm stock returns on an LSE weighted average return and it is used as a measure of firm risk. The negative coefficient here suggests that riskier firms less abnormal trading around the audit report release date. Which is consistent with information being already incorporated in the price. Finally, similar to prior literature that does not document a relationship between number of KAMs and trading volume (e.g. Bedard et al. 2019; Gutierrez et al. 2018), *KAMS-GIKAM* is not statistically significant.

<Insert Table 6 Here>

Together, the results of Tables 5 and 6 suggest that unexpected GIKAMs, as measured, are not informative to price or trading volume. I perform further tests to

examine whether changing identification of these variables influences this conclusion in the additional analysis section.

6.3 Goodwill Impairment Outcomes

In this section I present results of tests to determine whether GIKAMs are associated with goodwill impairment recognition outcomes. Analyzing the relationship between GIKAM determinations and goodwill impairment recognition is complicated by the fact that I expect goodwill impairment risk to be the primary driver of both outcomes. I address this issue in several ways. First, I examine the relationship using a multiple regression model that controls for known drivers of goodwill impairment. Second, I create a propensity score matched sample of firms based on their likelihood to receive a GIKAM to isolate the impact of GIKAM reporting on goodwill impairment recognition.

6.3.1 Descriptive statistics

Table 7 presents descriptive statistics of my main analysis sample and a propensity score matched sample. Panel A presents descriptive statistics of my pooled analysis including a t-test to compare the sample means of firms with and without a GIKAM. These results show that firms that receive a GIKAM have significant differences (p-values less than 0.1) for the following variables: *ACQUISITION, BIG4, BONUS, GOODWILL_IMP, GOODWILL_PROP, INDUSTRY_SPECIALIST, KAMS, KAMS-GIKAM, LEVERAGE, LOSS, MKTIMPPCT, MKTVAL, MTB, OWNERSHIP, RETURN, ROA,* and *STDEV*. These differences suggest that GIKAM firms are substantially different than firms that did not receive a GIKAM.

Also of note, differences in means between GIKAM and non-GIKAM firms are generally consistent with predicted directions described in hypothesis 1. Notable

exceptions include *BIG4, LOSS, MKTIMPPCT, ROA,* and *STDEV* which have differences in means that are contrary to expectations. *BIG4* which is negatively associated with GIKAM likelihood, but 72.4% of GIKAM firms are audited by a Big 4 firm compared to 62.4% of firms audited by a non-Big 4 firm. This difference could be due to a size difference between Big 4 and non-Big 4 clients with larger clients being more likely to be audited by a Big 4 firm and being more likely to receive a GIKAM. Additionally, comparing means does not consider industry effects on GIKAM determinations which are likely important.

To mitigate the differences between these firms and to better control for impairment risk, I perform propensity-score matching (PSM). Propensity score matching is performed by first estimating the likelihood a firm would receive a GIKAM using equation (6). Results of this estimation are reported in Panel B. Signs and coefficients are generally consistent with GIKAM determinants analysis. A notable exception include *INDUSTRY_SPECIALIST* which is statistically significant in this specification. Using the results of this model I create a matched sample of GIKAM and non-GIKAM observations using a 1% caliper without replacement. This procedure yields a sample of 1,594 observations with 797 GIKAM and 797 non-GIKAM observations.

The descriptive statistics for the matched sample is presented in Panel C. Following the matching procedure only *GOODWILL_IMP* and *KAMS* have statistically different means between the GIKAM and non-GIKAM group. *GOODWILL_IMP* is the variable of interest, so it was not subject to the matching procedure. *KAMS* is significantly different between the samples because *KAMS-GIKAM* was used in the matching procedure and is not statistically different between the samples. Also of note,

INDUSTRY_SPECIALIST has equal values for both groups because after matching the groups had the same number of industry specialists.

<Insert Table 7 Here>

6.3.2 Results

Table 8 presents results for hypothesis 3 testing. Columns 1 and 2 present the results of estimating equations (4) and (5) using a pooled sample to estimate the likelihood of material goodwill impairment recognition and the amount of impairment recognized based on GIKAM reporting and control variables. Consistent with expectations *GIKAM* has a positive coefficient and is statistically significant at the 1% level in both specifications. The coefficients indicate that firms that receive a GIKAM are 4.4% more likely to recognize material goodwill impairment and recognize increased impairment equal to 2.2% of the firm's beginning goodwill balance, on average.

Column 3 presents the results of estimating equation (4) using the PSM sample. *GIKAM* is positive and statistically significant at the 1% level and indicates GIKAM firms are 5.01% more likely to recognize material goodwill impairment. Also of note, the sample size for this estimation does not equal the full PSM sample because of industries that predict failure (*GOODWILL_IMP* = 0) perfectly and are therefore unsolvable in a logit model. This appears to be reasonable given that *GOODWILL_IMP* has mean values of 12% and 5.6% for the *GIKAM* = 1 and *GIKAM* = 0 samples, respectively. Column 4 presents the results of estimating equation (5) using the PSM model. *GIKAM* is positive and statistically significant at the 1% level and indicates that GIKAM firms recognize increased goodwill impairment equal to 2.1% of their beginning goodwill balance, on

average compared to non-GIKAM firms. Control variables in this are consistent with expected signs or are insignificant.

KAMS-GIKAM is insignificant in the two logit models but negative and statistically significant in the goodwill impairment amount models. This finding suggests that receiving an additional non-GIKAM KAM is associated with recognizing 0.4% and 0.8% of beginning goodwill less goodwill impairment. This is consistent with audit risks influencing goodwill impairment outcomes.

Together these results suggest that GIKAMs are positively associated with goodwill impairment outcomes in the forms of recognition of goodwill impairment and the amount of impairment recognized even when matching samples on other determinants of goodwill impairment. Based on these results, I conclude that GIKAMs are informative about goodwill impairment risk.

Chapter 7 Additional analysis

In this chapter, I perform additional analysis to explore of my previous results. I begin with analyzing the relationship between GIKAMs and future goodwill impairment. Next, I consider additional GIKAM determinants. Finally, I examine alternative price and volume outcomes.

7.1 GIKAM Timing and Goodwill Impairment Outcomes

Results of hypothesis 3 suggest that firms that receive a GIKAM are more likely to recognize material goodwill impairment in the current year and recognize a greater amount of goodwill impairment even when matching on the likelihood a firm would receive a GIKAM. These results suggest that GIKAMs provide information about goodwill impairment outcomes. However, these findings may not be useful in practice because news of goodwill impairment recognition is typically released before the audit report. While this arrangement may reduce the usefulness of GIKAMs in the current year, it is possible GIKAMs are associated with future goodwill impairment outcomes.

I test this assertion in two ways. First, I estimate equations (4) and (5) while replacing the dependent variables with an indicator variable equal to one if the client recognized goodwill impairment in the following year (*GOODWILL_IMP_LEAD*) and the amount of goodwill impairment recognized in the following year

(*IMPAIRMENT_AMT_LEAD*), respectively and adding *GIKAM_LAG* which is equal to one if the client received a GIKAM in the prior year. The goal of this test is to determine whether current period GIKAM reporting and financial statement variables are predictive of future goodwill impairment.[27] If GIKAMs are positively associated with future goodwill impairment it would suggest that GIKAMs are informative about future goodwill impairment risk.

Second, I estimate equations (4) and (5) adding *GIKAM_LAG*, which is equal to one if the client received a GIKAM in the prior year, as the variable of interest. The difference between models is that using a lead dependent variable has the effect of making all control variables lagged whereas in the later models only *GIKAM_LAG* is a lag variable and control variables relate to the current period. Results of these estimations are presented in Table 9.

<Insert Table 9 Here >

Column (1) presents the results of estimating equation (4) which is a logistic regression with *GOODWILL_IMP_LEAD* as the dependent variable. The variables of interest in this specification are *GIKAM* and *GIKAM_LAG*. Results indicate that *GIKAM* has a positive coefficient and is statistically significant at the 1% level. The coefficient suggests that when a firm receives a GIKAM in the prior year, they are 3% more likely to recognize material goodwill impairment than a firm that did not receive a GIKAM in the prior year. *GIKAM_LAG* is not significant in this specification. Column (3) presents the

[27] Since the variable of dependent variable relates to the next year, all independent variables have the effect of being lagged and *GIKAM_LAG* captures GIKAM reporting two years prior to the goodwill impairment outcomes.

results of estimating equation (4) using *GIKAM_LAG* as the variable of interest. *GIKAM_LAG* has a positive and significant coefficient that relates to a 1.46% greater likelihood of recognizing material goodwill impairment. In the same specification, *GIKAM* is also positive and statistically significant and is associated with a 3.26% greater likelihood a firm will recognize goodwill impairment in the current year.

Columns (2) and (4) present the results of estimating *IMPAIRMENT_AMT_LEAD* and *IMPAIRMENT_AMT* using prior period GIKAMs as variables of interest. In both models, *GIKAM* is positive and statistically significant and is associated with the client recognizing increased goodwill impairment equal to 2.1% and 1.8% of beginning goodwill, respectively. *GIKAM_LAG* is not statistically significant in either specification.

Control variables in each specification are generally significant and in the predicted direction or insignificant. *BIG4* and *INDUSTRY_SPECIALIST* are statistically significant and positive, indicating that higher quality auditors are more likely to require their client to recognize goodwill impairment. Since columns (1) and (2) use lead variables, some control variables such as *EBITDA_CH* are not significant, but *EBITDA_CH* is significant for current year in columns (3) and (4). In contrast, other variables that do not vary from year to year such as *MTB* and *LEVERAGE* are significant in the lead and current period specifications.

Taken together, these results suggest that prior period GIKAM reporting is associated with goodwill impairment recognition. However, when both current and prior period GIKAM reporting is considered, current GIKAM reporting is both statistically and economically more significant than prior period GIKAM reporting.

7.2 Determinants Additional Analysis

Hypothesis 1b predicts that auditor quality is associated with GIKAM determinations but, because of competing arguments, I do not make a directional prediction. On one hand, issuing a GIKAM may be an indication of higher audit quality because goodwill impairment risk is difficult to identify. On the other hand, relatively less experienced auditors may default to issuing a high level of audit risk and be more likely to issue a GIKAM. Results of estimating equation (1) yielded results suggesting Big 4 firms were less likely to issue a GIKAM and industry specialists where not significantly associated with GIKAM determinations. However, *INDUSTRY_SPECIALIST* had a positive coefficient and a z-score of 1.639 which is on the cusp of significance and warrants additional examination. I further examine the relationship between auditor quality and GIKAM determinations by adding an interaction variable (*BIG4_SPEC*) equal to *BIG4* x *INDUSTRY_SPECIALIST* to equation (1). Results of estimating equation (1) and including *BIG4_SPEC* are presented in Table 10. With this specification, *BIG4* is negative and statistically significant and neither *INDUSTRY_SPECIALIST* nor *BIG4_SPEC* are statistically significant. This test indicates that Big 4 firms are less likely to issue a GIKAM and industry specialists are neither more nor less likely to issue a GIKAM.

< Insert table 10 here >

However, I calculate *INDUSTRY_SPECIALIST* as an indicator variable equal to one if an audit firm collects more than 30% of the audit fees in a 2-digit SIC code in a year. Using this definition of industry specialist, it is more likely to identify larger audit firms as industry specialists than small audit firms. In my sample only 2.39% of audits

are audited by industry specialists that are not in the Big 4. The effect of this is that *BIG4_SPEC* is almost identical to *INDUSTRY_SPECIALIST.* To examine the relationship more accurately between industry specialization and GIKAM determinations I alter equation (1) to remove *BIG4* and *INDUSTRY_SPECIALIST* and add *BIG4_SPEC* and *BIG4_NONSPEC*, which is an indicator variable equal to one for Big 4 firms that are not industry specialists. Results of estimating equation (1) with these changes are presented in column (2) of table 10. Results show that *BIG4_NONSPEC* is negative and statistically significant at the 5% level and *BIG4_SPEC* is not statistically significant. These results indicate that the negative value for *BIG4* is primarily driven by non-industry specialists who are less likely to issue a GIKAM than non-Big 4 firms.

From these results, it is unclear whether higher quality auditors are more likely to issue a GIKAM because both industry specialists and Big 4 firms are expected to provide higher quality audits than auditors that possess neither characteristic. However, the results indicate that non-industry specialist Big 4 auditors are significantly less likely to issue GIKAMs than non-Big 4 auditors and Big 4 industry specialists.

I next examine whether the determinants of GIKAMs vary between Big 4 and non-Big 4 auditors. In hypothesis 1a, I predicted that managers may attempt to influence the auditor's GIKAM reporting decision when the manager has financial incentive to do so. Additionally, in hypothesis 1c I predicted that auditor independence is negatively associated with the likelihood a firm receives a GIKAM. It is possible that in both circumstances non-Big 4 auditors may be more likely to alter their GIKAM reporting decision (i.e. not issue a GIKAM) because the consequences of potentially losing a client is more severe than for Big 4 firms. I examine this assertion by estimating equation (1)

while altering it to exclude the indicator variable *BIG4* on split samples of non-Big 4 observations and Big 4 observations. Results are presented in table 11.

< Insert table 11 here >

Column (1) presents the results of estimating equation (1) using the Big 4 only sample. Using this sample, none of the variables of interest for hypothesis 1a are statistically significant. Auditor quality variables *INDUSTRY_SPECIALIST* and *IMPAIRMENT_SPECIALIST* are the variables of interest for hypothesis 2a. The two-tailed P-value for *INDUSTRY_SPECIALIST* is 0.16 which is not statistically significant at conventional levels. However, the value is positive and could potentially be significant with a larger sample size or different variable construction decisions. *IMPAIRMENT_SPECIALIST* is positive and statistically significant at the 1% level indicating that Big 4 firms that have more clients that recognize goodwill impairment are more likely to issue a GIKAM than firms that have fewer goodwill impairment clients. This finding is likely the result of underlying client risk of goodwill impairment as *IMPAIRMENT_SPECIALIST* is not statistically significant in any other specification of this model.

Column (2) of Table 11 presents the results of estimating equation (1) using only non-Big 4 observations. The variables of interest for hypothesis 1a are *BONUS*, *OWNERSHIP*, and *TENURE* which capture agency incentives for managers to avoid goodwill impairment recognition. In column (2), both *BONUS* and *OWNERSHIP* are negative and significant at the 5% level while *TENURE* is not statistically significant. Together these results suggest that managers with agency incentives to avoid GIKAMs are less likely to receive a GIKAM than managers without these incentives. Also, the

manager's tenure does not appear to be associated with GIKAM likelihood. Variables of interest for hypothesis 1b and 1c are not significantly associated with GIKAM likelihood. This result suggests these factors are not significant determinants for non-Big 4 firms. However, it is important to consider that *INDUSTRY_SPECIALIST* as constructed is not very relevant for the non-Big 4 sample because the mean value of this variable is 3% in this sample.

Control variables in each sample generally follow their predicted direction and are similar in both specifications. A notable exception is *ROA* which is negative and statistically significant in the Big 4 sample and not significant in the non-Big 4 sample. Additionally, neither *LOSS* nor *EBITDA_CH* are statistically significant in the non-Big 4 sample. Together these results suggest that profitability is not a significant determinant when non-Big 4 firms are making GIKAM determinations.

7.3 Price Reaction Analysis and Earnings News

I next examine if earnings news influences the price reaction to unexpected GIKAMs. Teoh and Wong (1993) document a positive association between perceived audit quality and earnings response coefficients using Big N as an indication of perceived audit quality. While Big N status is known at the time of earnings, other indicators of audit quality are not known when earnings news is released and could be associated with price reactions when audit quality becomes known. Unexpected GIKAM reporting may be one such indicator of audit quality. If positive unexpected GIKAMs are viewed as signals of higher audit quality, then they may give credibility to positive earnings news which I expect to be associated with positive abnormal returns. Conversely, if a firm releases positive earnings news that is then followed with a signal of poor audit quality

(negative unexpected GIKAM), I would expect the signal of poor audit quality to be associated with a negative price reaction.

To test these predictions, I create interaction variables for *EBITDA_CH*UNEXPECTED_GIKAM_P* and *EBITDA_CH*UNEXPECTED_GIKAM_N* and include them in estimations of Equation (2). I expect a positive coefficient for *EBITDA_CH*UNEXPECTED_GIKAM_P* which would indicate that the market reacts positively to a positive unexpected GIKAM when earnings before interest taxes depreciation and amortization increased compared to the prior year. I also expect a negative coefficient for *EBITDA_CH*UNEXPECTED_GIKAM_N* which would indicate a negative market reaction when there is an unexpected GIKAM following positive earnings news.

<Insert Table 12 here>

Results of this test are presented in Table 12. The variables of interest are *EBITDA_CH*UNEXPECTED_GIKAM_P* and *EBITDA_CH*UNEXPECTED_GIKAM_N*. Column (1) presents the results of including both variables of interest in one estimation. The positive and significant coefficient of 0.026 on *EBITDA_CH*UNEXPECTED_GIKAM_P* indicates that, on average, firms that have a positive earnings news, experience a 2.6% greater abnormal price reaction to a positive unexpected GIKAM than firms without a positive unexpected GIKAM. This relationship is similar in column (2) when negative unexpected GIKAMs are removed from the estimation. Estimations including negative unexpected GIKAMs are not significantly associated with abnormal price reactions in any of the specifications indicating that the absence of an expected GIKAM is not incorporated into price.

Likewise, when using 3-day CAR as the dependent variable, none of the variables of interest appear to be associated with abnormal returns.

Control variables utilized in this test are in the expected direction or are not significant. Notably, *INDUSTRY_SPECIALIST* is significant and positive in each model specification indicating that the market reacts positively to audit reports of industry specialists. Also, the number of non-GIKAM KAMs is negatively associated with abnormal announcement day returns which may indicate the market associates non-GIKAM KAMs with firm risk and trades accordingly. In untabulated analysis, I examine whether the number of KAMs is associated with a similar abnormal return as positive unexpected GIKAMs. To do this, I created an interaction term between *EBITDA_CH* and an indicator variable equal to one for firms with more than 3 KAMs (median for the sample period). Including this variable in equation (2) did not yield evidence that the market weights earnings news differently based on the number of KAMs in an audit report.

Together, these results suggest that positive unexpected GIKAMs may add credibility to prior earnings news and are associated with positive market reactions. Additionally, results suggest that unexpected GIKAMs are informative in a way that the number of KAMs are not.

7.4 Volume Reaction Analysis Alternative Calculation

As noted by Gutierrez et al. (2018), abnormal trading volume is skewed which may influence the significance of results. To address this, I log transform both the annual financial report date abnormal trading volume and three-day abnormal trading volume

centered around the annual financial report date and use the resulting variables as dependent variables in estimating equation (3).

< Insert table 13 here >

Table 13 presents the results of estimating equation (3) using the log of announcement day abnormal trading volume and the log of the three-day abnormal trading volume as dependent variables. As predicted in Hypothesis 2b, *ABS_UNEXPECTED_GIKAM* is positively associated with both announcement-day and three-day log transformed abnormal trading volume indicating that unexpected GIKAMs are associated with increased trading volume. However, the economic significance of this finding is very small. A one standard deviation increase in *ABS_UNEXPECTED_GIKAM* is associated with a 0.04 percentage point increase in three-day abnormal trading volume.

To further analyze the relationship between unexpected GIKAMs and abnormal trading volume, I next estimate abnormal trading volume using positive and negative unexpected GIKAMs as my variables of interest. The goal of this analysis is to determine whether direction of the unexpected GIKAM matters in determining its associated trading volume. Results of this analysis are presented in Table 14. *UNEXPECTED_GIKAM_P* is positive and significantly associated with the logarithm of three-day abnormal trading volume, but not significantly associated with the announcement day specifications of trading volume or three-day abnormal trading volume. Across all specifications, *UNEXPECTED_GIKAM_N* is not significantly associated with any of the measures of abnormal trading volume.

< Insert Table 14 here >

Together, these results suggest that unexpected GIKAMs are associated with increased trading volume and the reaction is driven by positive unexpected GIKAMs. This result is consistent with positive GIKAMs being more salient to investors than the absence of a GIKAM. However, it is important to note that *UNEXPECTED_GIKAM_P* is only significantly associated with the logarithm of three-day abnormal trading volume at the 10% level and not significantly associated with the other variables used to capture abnormal trading volume. Combined with the results of the continuous variable *ABS_UNEXPECTED_GIKAM*, I conclude that only some GIKAMs are informative.

7.5 Unexpected GIKAM Sensitivity Analysis

The price reaction analysis predicts that unexpected GIKAMs will have the largest price reaction because they convey the most information. To test this assertion, I create two indicator variables *UNEXPECTED_GIKAM_P* and *UNEXPECTED_GIKAM_N* which are equal to one if an audit has an *UNEXPECTED_GIKAM* value in the highest or lowest quartile, respectively. However, it is likely that these cutoff points for assigning GIKAMs are not the most optimal. To test whether unexpected GIKAMs are informative using different cutoff points, I examine broader and narrower cutoff points for identifying unexpected GIKAMs. To do this I create unexpected GIKAM variables using the highest and lowest tercile (*UGIKAM_P_3* and *UGIKAM_N_3*) and quintile (*UGIKAM_P_5* and *UGIKAM_N_5*) of *UNEXPECTED_GIKAM*. I then estimate equation (2) using these as variables of interest.

I expect as unexpected GIKAMs to be more informative than expected GIKAMs. In this test I expect the variables that identify the highest and lowest quintiles of *UNEXPECTED_GIKAM* (*UGIKAM_P_5* and *UGIKAM_N_5*) to be more informative

because they identify relatively more unexpected GIKAMs than unexpected GIKAMs identified by terciles and quartiles. Results of these estimations are presented in Table 15. Likewise, I expect unexpected GIKAM variables identified using terciles (*UGIKAM_P_3* and *UGIKAM_N_3*) to be less informative than GIKAMs identified using quartiles and quintiles.

<Insert Table 15 here >

Panel A presents the results of estimating equation (2) using tercile indicator variables for unexpected GIKAMs (*UGIKAM_P_3* and *UGIKAM_N_3*). Likewise, Panel B presents the results of estimating equation (2) using quintile indicators to identify unexpected GIKAMs (*UGIKAM_P_5* and *UGIKAM_N_5*). Similar to the main results, neither positive nor negative unexpected GIKAMs are associated with abnormal returns on the audit report release date or the three-day period around the audit report release date using either terciles or quintiles to identify unexpected GIKAMs. Interestingly, while insignificant, the direction of the signs is opposite of the predicted direction indicating that positive GIKAMs may be associated with price increases. However, these results are not statistically significant.

In untabulated results, I analyze the price reaction to positive and negative GIKAMs using septiles and deciles for identification. Neither positive nor negative unexpected GIKAMs are significantly associated with audit release date or three-day cumulative audit report release date abnormal returns.

Chapter 8 Conclusion

The expansion of audit reports to include key audit matters, among other information, is one of the biggest changes to the audit report, but the usefulness of this information is still unknown. In this paper, I examine the determinants and outcomes of KAMs related to goodwill impairment which is itself an economically significant event. I document that auditor quality is negatively associated with the likelihood an auditor issues a GIKAM with Big4 auditors being less likely to issue a GIKAM. Further, additional analysis into this question shows that this result is driven by non-specialist Big 4 auditors who are less likely to issue a GIKAM than specialists Big 4 auditors and non-Big 4 auditors. Auditor independence also appears to play a role in KAM reporting with seemingly less independent auditors being less likely to issue a GIKAM. Finally, I provide evidence of a negative relationship between the likelihood a firm receives a GIKAM and the number of non-GIKAM KAMs the firm receives which suggests that GIKAM determinations are not independent of other KAM determinations.

Using the results of my determinants model, I next examine the informativeness of GIKAMs to financial markets. Prior literature provides mixed evidence on the informativeness of KAMs to financial markets. I add to this literature by examining if unexpected GIKAMs are informative. In my main tests, I do not find an association between unexpected GIKAMs and abnormal price or volume reactions on the annual financial report date or the three-day period centered around the annual financial report

date. However, in additional analysis I find that firms who receive a positive unexpected GIKAM have a positive price reaction to earnings news (EBITDA change) and that unexpected GIKAMs are positively associated with the natural log of abnormal trading volume during the three-day window centered on the audit report release date. Together, these results suggest unexpected GIKAMs are informative in certain specific circumstances.

Finally, I examine the relationship between GIKAMs and goodwill impairment recognition. Using multiple specifications, I find a strong association between GIKAMs and goodwill impairment recognition even when using a propensity score matched sample that limits observable variation in client characteristics. In additional analysis, I find that prior period GIKAMs are also predictive of goodwill impairment outcomes. Together, these results suggest that GIKAMs contain information about goodwill impairment risk in the current and next period and are therefore informative.

These findings contribute to the auditing literature in a number of ways. First, results of determinants analysis provide insight into how auditors assess risk related to accounting estimates and determine whether something is a KAM topic. Second, results of market tests add to a growing literature that suggests that, while KAMs may not be informative in general settings, KAMs are informative is specific instances based on market expectations (Burke et al. 2021; Huang 2021). Finally, results also contribute to the literature on the impact of KAM reporting and audit outcomes by showing that KAM reporting topic choice is related to how that topic is reported in financial statements.

These findings are subject to several limitations that should be considered. First, the determinants analysis uses variables that are expected to be associated with GIKAM

determinations, but it is likely observable and unobservable factors that influence GIKAMs are omitted from my analysis. For example, prior literature documents the effect of audit office (e.g. Francis and Yu 2009) and partner-level factors (e.g. Rousseau and Zehms 2020) on audit outcomes.

Second, GIKAM outcomes tests rely on the results of my determinants model. Any deviation in the determinants model from optimum would result in the possibility of misidentifying unexpected GIKAMs. In a similar manner, I examine unexpected GIKAMs as the highest and lowest tercile, quartile, quintile, septile, and decile, but it is possible that each of these deviates from the theoretical optimum identification strategy for unexpected GIKAMs.

Third, this study relies on data from UK audits during the period 2013 to 2020. This setting may limit the generalizability of my findings for several reasons. First, this period relates to the first adoption and reporting of first RMMs then KAMs. It is possible that these new audit reporting features were not totally utilized by investors during this period. Second, while the UK is an economically significant audit market, it is much smaller than the US or European Union which reduces the sample size available to study. Third, my sample period includes the period impacted by the global COVID-19 pandemic which likely increased business risk and therefore the likelihood that firms would need to recognize goodwill impairment.

Appendix A: Variable Definitions		
ABN_VOLUME	The average 3-day event period volume divided by mean 40-day estimation period volume (-61, -21).	Compustat – Global
ABN_VOLUME_1_DAY	Announcement day trading volume divided by mean 40-day estimation period volume (-61, -21).	Compustat – Global
ABS_UNEXPECTED_GIKAM	The absolute value of *UNEXPECTED_GIKAM*.	
ACQUISITION	Indicator variable equal to one if the company performed an acquisition that increased goodwill during the year, zero otherwise.	Compustat - Global
AUDITOR_TENURE	Number of years the audit firm has audited a client.	Audit Analytics – Europe
BETA	The slope coefficient of regressing firm daily stock returns on a London Stock Exchange value-weighted portfolio over the 220-day period (-250, -21).	Compustat – Global
BIG4	Indicator variable equal to one for companies audited by a Big 4 audit firm.	Audit analytics
BONUS	Indicator variable equal to one if the client's CEO received bonus compensation during the year, zero otherwise.	BoardEx – United Kingdom
CAR	Market adjusted cumulative abnormal returns of three-day event period centered on the audit report date.	Event Study by WRDS
CFO	Cash flows from operations	Compustat – Global
EBITDA_CH	Change in a company's earnings before interest taxes depreciation and amortization from prior period divided by market value of common stock.	Compustat – Global

FEE_RATIO	Nonaudit fees divided by total fees paid to the auditor in a given year.	Audit Analytics – Europe
GIKAM	Indicator variable equal to one if the firm received a "Goodwill" or "Goodwill and intangible assets" KAM in a given year, zero otherwise.	Audit Analytics – Europe
GIKAM_LAG	Indicator variable equal to one if the firm received a GIKAM in the prior year.	
GOODWILL_IMP	Indicator variable equal to one if the firm recognized goodwill impairment greater than 0.5% of total revenue.	Bloomberg & Compustat - Global
GOODWILL_IMP_LEAD	The value of *GOODWILL_IMP* in the period t+1.	
GOODWILL_PROP	Goodwill balance divided by total assets.	Compustat – Global
IMPAIRMENT_AMT	Amount of goodwill impairment recognized during the year divided by beginning goodwill balance.	Bloomberg & Compustat – Global
IMPAIRMENT_AMT_LEAD	The value of *IMPAIRMENT_AMT* in the period t+1	
IMPAIRMENT_SPECIALIST	The number of audit clients that recognize goodwill impairment in a given year divided by total clients (Greco et al. 2017).	Audit Analytics – Europe
INDUSTRY_SPECIALIST	Indicator variable equal to one if the auditor collects 30% or more of the audit fees in a 2-digit SIC code during a given year, zero otherwise.	Audit Analytics – Europe
KAMS	Total number of KAMs in the firm's audit report.	Audit Analytics - Europe
KAMS-GIKAM	Total number of KAMs in the firm's audit report minus GIKAMs.	Audit Analytics – Europe
LAG	The number of days between the client's final results and the release of the audit report.	London Stock Exchange Regulatory News Service.

LEVERAGE	Total short- and long-term interest-bearing debt divided by pre-impairment book value of equity.	Compustat – Global
LOSS	Indicator variable equal to one if the company suffered a loss (before extraordinary items) during the year, zero otherwise.	Compustat – Global
MKTIMPIND	Indicator variable equal to one for firms with a market value of common stock less than net book value of assets (total assets minus total liabilities).	Compustat – Global
MKTIMPPCT	Percent of the firm's market value common stock below net book value of assets (total assets minus total liabilities).	Compustat – Global
MKTVAL	The log of the client's market value of common stock at the end of the year.	Compustat – Global
MTB	Market value of common stock divided by net book value of assets (total assets minus total liabilities).	Compustat – Global
OWNERSHIP	Value of shares held by CEO divided by market value of common stock at the end of the year.	BoardEx – United Kingdom
RETURN	Firm's one-year buy and hold stock return.	Compustat – Global
ROA	Net income divided by average total assets.	Compustat – Global
SIZE	Natural logarithm of total assets.	Compustat – Global
STDEV	Standard deviation of a company's daily stock returns over the current year.	Compustat – Global
TENURE	The number of years the CEO has been in their position.	BoardEx – United Kingdom
UNEXPECTED_GIKAM	The residual from the GIKAM determinants model (equation (1)).	
UNEXPECTED_GIKAM_N	Indicator variable equal to one for observations in the first quartile of UNEXPECTED_GIKAM, zero otherwise.	

UNEXPECTED_GIKAM_P	Indicator variable equal to one for observations in the fourth quartile of UNEXPECTED_GIKAM, zero otherwise.	
VOLATILITY	The standard deviation of sales divided by total assets for the three-year period from t-2 to t (Reid et al. 2019).	Compustat - Global

Table 1: Sample Construction

Panel A: Determinants model sample	Firm-year Observations
Initial sample (Compustat Global UK firms / Audit Analytics) over the years 2013- 2020	5,559
Less:	
Financial and utility firms	(733)
Obs. with total assets < 1 million, negative MTB, negative revenue	(218)
Missing control variables	(867)
Missing CEO data	(306)
Industries that predict *GIKAM* perfectly	(123)
Final sample determinants model	3,312
Panel B: Market outcomes Sample	
Final sample determinants model	3,312
Less:	
Missing *CAR*, *ABN_VOLUME*, and *BETA*	(1,233)
Missing audit report date	(97)
Final market outcomes sample	1982
Panel C: Goodwill impairment outcomes sample	
Final sample determinants model	3,312
Less:	
Industries that predict *GOODWILL_IMP* perfectly	(200)
Final market outcomes sample	3112

Table 2: Descriptive Statistics for Variables in Determinants Model

VARIABLES	N	Mean	Sd	Q1	Med	Q3
ACQUISITION	3,312	0.428	0.495	0.000	0.000	1.000
AUDITOR_TENURE	3,312	7.222	5.621	2.000	6.000	12.000
BIG4	3,312	0.661	0.473	0.000	1.000	1.000
BONUS	3,312	0.576	0.494	0.000	1.000	1.000
EBITDA_CH	3,312	0.000	0.174	-0.015	0.006	0.024
FEE_RATIO	3,312	0.207	0.188	0.062	0.158	0.308
GIKAM	3,312	0.372	0.483	0.000	0.000	1.000
GOODWILL_IMP	3,312	0.077	0.267	0.000	0.000	0.000
GOODWILL_PROP	3,312	0.163	0.175	0.003	0.102	0.275
IMPAIRMENT_SPECIALIST	3,312	0.041	0.024	0.030	0.038	0.056
INDUSTRY_SPECIALIST	3,312	0.314	0.464	0.000	0.000	1.000
KAMS	3,312	3.220	1.489	2.000	3.000	4.000
KAMS-GIKAM	3,312	2.848	1.424	2.000	3.000	4.000
LEVERAGE	3,312	0.702	1.312	0.033	0.292	0.752
LOSS	3,312	0.341	0.474	0.000	0.000	1.000
MKTIMPIND	3,312	0.209	0.407	0.000	0.000	0.000
MKTIMPPCT	3,312	0.078	0.188	0.000	0.000	0.000
MKTVAL	3,312	5.464	2.353	3.713	5.572	7.170
MTB	3,312	3.533	4.718	1.153	2.137	4.011
OWNERSHIP	3,312	0.042	0.109	0.000	0.003	0.020
RETURN	3,312	0.170	0.752	-0.214	0.035	0.318
ROA	3,312	-0.020	0.217	-0.041	0.034	0.079
STDEV	3,312	0.028	0.019	0.016	0.022	0.033
TENURE	3,312	5.418	5.430	1.500	3.600	7.650

Table 2 presents descriptive statistics for variables included in the analysis of the determinants of GIKAMs. All variables are defined in Appendix A. Q1 and Q3 represent the 25th percentile and 75th percentile, respectively.

Table 3: GIKAM Determinants Analysis

VARIABLES	Hypothesis	Predicted Sign	(1) *GIKAM*
BONUS	1a	+	-0.084
			(-0.702)
OWNERSHIP	1a	+	-0.552
			(-0.876)
TENURE	1a	+	-0.003
			(-0.247)
BIG4	1b	?	-0.447**
			(-2.004)
INDUSTRY_SPECIALIST	1b	?	0.249
			(1.639)
IMPAIRMENT_SPECIALIST	1b	?	1.518
			(0.650)
FEE_RATIO	1c	-	-0.429*
			(-1.351)
AUDITOR_TENURE	1c	-	0.014
			(1.072)
MKTVAL		?	0.135**
			(2.303)
MTB		-	-0.078***
			(-3.364)
MKTIMPPCT		+	0.963**
			(1.701)
MKTIMPIND		+	0.132
			(0.535)
LEVERAGE		+	0.204***
			(3.724)
RETURN		-	0.011
			(0.128)
STDEV		+	-5.828
			(-1.444)
LOSS		+	-0.036
			(-0.215)
ROA		-	-1.168***
			(-3.062)
EBITDA_CH		-	0.182
			(0.680)

ACQUISITION	+	0.424***
		(3.412)
GOODWILL_PROP	+	4.379***
		(8.469)
GOODWILL_IMP	+	1.111***
		(5.157)
KAMS-GIKAM	?	-0.255***
		(-5.208)
Constant		-0.770
		(-0.694)
Observations		3,312
Pseudo R-squared		0.265
Industry Fixed-Effects		YES
Year Fixed-Effects		YES

Table 3 presents results of the estimation of the logistic regression of equation (1). All variables are defined in Appendix A. Sample period is 2013 to 2020. Robust z-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1. One-tailed significance used when directional prediction is made.

Table 4: Descriptive Statistics for Variables in Market Outcomes Models

VARIABLES	N	Mean	Sd	Q1	Med	Q3
ABN_VOLUME	1,982	1.586	1.925	0.638	1.029	1.699
ABN_VOLUME_1_DAY	1,982	1.708	2.780	0.479	0.921	1.667
ABS_UNEXPECTED_GIKAM	1,982	0.888	0.629	0.458	0.742	1.126
BETA	1,982	0.638	0.457	0.296	0.618	0.938
BIG4	1,982	0.762	0.426	1.000	1.000	1.000
CAR	1,982	0.001	0.032	-0.011	-0.000	0.011
CAR 1-DAY	1,982	0.003	0.048	-0.018	0.000	0.020
EBITDA_CH	1,982	-0.003	0.135	-0.010	0.006	0.021
GIKAM	1,982	0.491	0.500	0.000	0.000	1.000
IMPAIRMENT_SPECIALIST	1,982	0.044	0.022	0.031	0.042	0.057
INDUSTRY_SPECIALIST	1,982	0.381	0.486	0.000	0.000	1.000
KAMS-GIKAM	1,982	2.924	1.409	2.000	3.000	4.000
LAG	1,982	23.577	16.273	14.000	22.000	32.000
LEVERAGE	1,982	0.721	1.228	0.109	0.385	0.800
LOSS	1,982	0.240	0.427	0.000	0.000	0.000
MKTVAL	1,982	6.095	2.151	4.479	6.145	7.531
MTB	1,982	3.606	4.470	1.314	2.344	4.153
ROA	1,982	0.021	0.157	0.002	0.045	0.086
UNEXPECTED_GIKAM	1,982	0.071	1.086	-0.656	-0.139	0.830
UNEXPECTED_GIKAM_N	1,982	0.290	0.454	0.000	0.000	1.000
UNEXPECTED_GIKAM_P	1,982	0.323	0.468	0.000	0.000	1.000
VOLATILITY	1,982	0.114	0.140	0.037	0.069	0.131

Table 4 presents descriptive statistics for variables included in price and volume analysis. All variables are defined in Appendix A. Q1 and Q3 represent the 25th percentile and 75th percentile, respectively.

Table 5: Price Reaction Analysis

VARIABLES	Hypothesis	Predicted sign	(1) *CAR 1-DAY*	(2) *CAR 1-DAY*	(3) *CAR 1-DAY*	(4) *CAR*	(5) *CAR*	(6) *CAR*
UNEXPECTED_GIKAM_P	H2a	-	0.003	0.003*		0.001	0.002	
			(1.361)	(1.650)		(0.430)	(0.730)	
UNEXPECTED_GIKAM_N	H2a	+	-0.000		-0.001	-0.001		-0.002
			(-0.059)		(-0.902)	(-0.408)		(-0.784)
MKTVAL		-	-0.001	-0.001	-0.001	-0.002**	-0.002**	-0.002**
			(-0.883)	(-0.884)	(-0.857)	(-2.278)	(-2.291)	(-2.272)
MTB		-	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
			(-0.890)	(-0.887)	(-0.984)	(-0.351)	(-0.315)	(-0.385)
ROA		+	0.018**	0.018**	0.018**	0.025**	0.025**	0.025**
			(2.175)	(2.175)	(2.146)	(2.181)	(2.185)	(2.162)
LOSS		-	-0.001	-0.001	-0.001	-0.003	-0.003	-0.003
			(-0.414)	(-0.413)	(-0.448)	(-0.681)	(-0.671)	(-0.693)
EBITDA_CH		+	0.007	0.007	0.007	0.005	0.005	0.005
			(0.796)	(0.797)	(0.781)	(0.363)	(0.367)	(0.357)
LAG		-	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
			(-0.101)	(-0.098)	(-0.155)	(-1.202)	(-1.183)	(-1.220)
BETA		+	-0.002	-0.002	-0.002	-0.001	-0.001	-0.002
			(-0.887)	(-0.886)	(-0.915)	(-0.393)	(-0.388)	(-0.401)
LEVERAGE		+	0.001	0.001	0.001	-0.000	-0.000	-0.000
			(0.814)	(0.808)	(0.915)	(-0.207)	(-0.248)	(-0.177)
VOLATILITY		+	0.003	0.003	0.003	-0.008	-0.008	-0.008
			(0.548)	(0.548)	(0.537)	(-0.794)	(-0.797)	(-0.795)

BIG4	+	-0.001	-0.001	-0.001	0.003	0.003	0.003
		(-0.207)	(-0.208)	(-0.211)	(0.699)	(0.686)	(0.698)
INDUSTRY_SPECIALIST	+	0.002**	0.002**	0.003**	0.004**	0.004**	0.004**
		(1.712)	(1.711)	(1.799)	(1.678)	(1.675)	(1.707)
IMPAIRMENT_SPECIALIST	+	0.053	0.053	0.050	0.018	0.020	0.017
		(0.762)	(0.763)	(0.723)	(0.189)	(0.203)	(0.174)
KAMS-GIKAM	-	-0.001*	-0.001*	-0.001*	0.000	0.000	0.000
		(-1.407)	(-1.406)	(-1.432)	(0.335)	(0.343)	(0.326)
Constant		-0.005	-0.005	-0.003	0.012	0.011	0.013
		(-0.515)	(-0.533)	(-0.282)	(1.019)	(0.952)	(1.109)
Observations		1,982	1,982	1,982	1,982	1,982	1,982
R-squared		0.044	0.044	0.043	0.049	0.049	0.049
Industry Fixed-Effects		YES	YES	YES	YES	YES	YES
Year Fixed-Effects		YES	YES	YES	YES	YES	YES

Table 5 presents results of estimating equation (2). All variables are defined in Appendix A. The sample period is 2013 to 2020. Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<01. One-tailed significance used when directional prediction is made.

Table 6: Volume Reaction Analysis

VARIABLES	Hypothesis	Predicted sign	(1) *ABN_VOLUME*	(2) *ABN_VOLUME 1-DAY*
ABS_UNEXPECTED_GIKAM	H2b	+	0.056	0.114
			(0.789)	(1.055)
MKTVAL		-	-0.093***	-0.138***
			(-2.575)	(-2.562)
MTB		-	-0.009	-0.010
			(-0.769)	(-0.713)
ROA		?	0.705**	0.636
			(2.107)	(1.502)
LOSS		?	-0.087	-0.236
			(-0.504)	(-0.948)
EBITDA_CH		?	-0.327	-0.459
			(-0.951)	(-1.107)
LAG		-	-0.021***	-0.033***
			(-6.088)	(-6.171)
BETA		+	-0.339***	-0.372**
			(-2.827)	(-2.344)
LEVERAGE		+	0.001	-0.018
			(0.027)	(-0.363)
VOLATILITY		+	0.208	0.633
			(0.531)	(1.150)
BIG4		+	-0.016	-0.227

		(-0.087)	(-0.780)
INDUSTRY_SPECIALIST	+	0.132	0.327**
		(1.237)	(2.112)
IMPAIRMENT_SPECIALIST	+	-1.933	-2.343
		(-0.826)	(-0.651)
KAMS-GIKAM	+	-0.017	-0.038
		(-0.465)	(-0.704)
Constant		2.750***	3.668***
		(4.793)	(4.672)
Observations		1,982	1,982
R-squared		0.081	0.095
Industry Fixed-Effects		YES	YES
Year Fixed-Effects		YES	YES

Table 6 presents results of estimating equation (3). All variables are defined in Appendix A. Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1. One tailed significance used when directional prediction is made.

Table 7: Descriptive statistics goodwill impairment outcomes model

Panel A: Comparison of mean value of variables of firms with a GIKAM and without a GIKAM

	GIKAM = 1 (n=1,231)					GIKAM = 0 (n=2,081)					
VARIABLES	Mean	Sd	Q1	Med	Q3	Mean	Sd	Q1	Med	Q3	t-test
ACQUISITION	0.601	0.490	0.000	1.000	1.000	0.325	0.469	0.000	0.000	1.000	<0.0000
AUDITOR_TENURE	7.383	5.669	2.000	6.000	12.000	7.126	5.592	2.000	6.000	12.000	0.2050
BIG4	0.724	0.447	0.000	1.000	1.000	0.624	0.484	0.000	1.000	1.000	<0.0000
BONUS	0.621	0.485	0.000	1.000	1.000	0.549	0.498	0.000	1.000	1.000	<0.0000
EBITDA_CH	-0.002	0.151	-0.014	0.005	0.022	0.001	0.187	-0.016	0.006	0.025	0.5524
FEE_RATIO	0.211	0.185	0.070	0.167	0.317	0.204	0.189	0.056	0.157	0.300	0.2994
GOODWILL_IMP	0.148	0.355	0.000	0.000	0.000	0.036	0.185	0.000	0.000	0.000	<0.0000
GOODWILL_PROP	0.260	0.169	0.116	0.237	0.386	0.105	0.151	0.000	0.024	0.168	<0.0000
INDUSTRY_SPECIALIST	0.409	0.492	0.000	0.000	1.000	0.258	0.438	0.000	0.000	1.000	<0.0000
KAMS	3.788	1.430	3.000	4.000	5.000	2.884	1.420	2.000	3.000	4.000	<0.0000
KAMS-GIKAM	2.788	1.430	2.000	3.000	4.000	2.884	1.420	2.000	3.000	4.000	0.0615
LEVERAGE	0.769	1.363	0.133	0.397	0.802	0.662	1.280	0.005	0.206	0.694	0.0241
LOSS	0.297	0.457	0.000	0.000	1.000	0.367	0.482	0.000	0.000	1.000	<0.0000
MKTIMPIND	0.199	0.399	0.000	0.000	0.000	0.215	0.411	0.000	0.000	0.000	0.2807
MKTIMPPCT	0.069	0.166	0.000	0.000	0.000	0.084	0.200	0.000	0.000	0.000	0.0254
MKTVAL	5.857	2.273	4.130	6.014	7.470	5.231	2.370	3.424	5.246	6.963	<0.0000
MTB	3.103	3.927	1.162	2.032	3.754	3.787	5.112	1.147	2.184	4.246	0.0001
OWNERSHIP	0.032	0.088	0.000	0.002	0.011	0.048	0.120	0.000	0.003	0.028	<0.0000
RETURN	0.112	0.617	-0.214	0.023	0.272	0.205	0.819	-0.214	0.039	0.358	0.0006
ROA	-0.006	0.169	-0.016	0.034	0.066	-0.029	0.241	-0.053	0.034	0.089	0.0031
STDEV	0.025	2.273	0.015	0.020	0.028	0.030	0.020	0.017	0.023	0.037	0.0000
TENURE	5.252	5.066	1.500	3.800	7.600	5.516	5.633	1.500	3.500	7.700	0.1749

Panel B: Logistic Regression to Estimate Propensity Score

VARIABLES	Predicted sign	(1) *GIKAM*
BONUS	+	-0.108
		(-0.917)
OWNERSHIP	+	-0.564
		(-0.900)
TENURE	+	-0.004
		(-0.290)
BIG4	*?*	-0.395*
		(-1.777)
INDUSTRY_SPECIALIST	*?*	0.274*
		(1.798)
FEE_RATIO	-	-0.442
		(-1.401)
AUDITOR_TENURE	-	0.013
		(1.048)
MKTVAL	*?*	0.151**
		(2.573)
MTB	-	-0.085***
		(-3.558)
MKTIMPPCT	+	0.895
		(1.610)
MKTIMPIND	+	0.180
		(0.728)
LEVERAGE	+	0.230***

		(4.279)
RETURN	-	0.001
		(0.011)
STDEV	+	-5.068
		(-1.239)
LOSS	+	0.139
		(0.867)
ROA	-	-1.094***
		(-2.894)
EBITDA_CH	-	0.087
		(0.342)
ACQUISITION	+	0.465***
		(3.757)
GOODWILL_PROP	+	4.373***
		(8.578)
KAMS-GIKAM	*?*	-0.262***
		(-5.494)
Constant		-0.826
		(-0.752)
Observations		3,312
Pseudo R-squared		0.256
Industry FE		YES
Year FE		YES

Panel C: Comparison of GIKAM firms with matched sample

	GIKAM = 1 (n=797)					GIKAM = 0 (n=797)					
VARIABLES	Mean	Sd	Q1	Med	Q3	Mean	Sd	Q1	Med	Q3	**t-test**
ACQUISITION	0.522	0.500	0.000	1.000	1.000	0.529	0.499	0.000	1.000	1.000	0.7636
AUDITOR_TENURE	7.471	5.668	2.000	7.000	13.000	7.265	5.561	2.000	6.000	12.000	0.4645
BIG4	0.715	0.452	0.000	1.000	1.000	0.688	0.464	0.000	1.000	1.000	0.2288
BONUS	0.605	0.489	0.000	1.000	1.000	0.615	0.487	0.000	1.000	1.000	0.6815
EBITDA_CH	-0.003	0.154	-0.013	0.006	0.023	-0.000	0.156	-0.010	0.006	0.022	0.6845
FEE_RATIO	0.203	0.180	0.067	0.154	0.305	0.203	0.185	0.063	0.153	0.300	0.9529
GOODWILL_IMP	0.120	0.326	0.000	0.000	0.000	0.056	0.231	0.000	0.000	0.000	<0.0000
GOODWILL_PROP	0.212	0.151	0.089	0.182	0.312	0.205	0.177	0.042	0.185	0.322	0.4030
INDUSTRY_SPECIALIST	0.361	0.481	0.000	0.000	1.000	0.361	0.481	0.000	0.000	1.000	1.0000
KAMS	3.822	1.468	3.000	4.000	5.000	2.831	1.307	2.000	3.000	4.000	<0.0000
KAMS-GIKAM	2.822	1.468	2.000	3.000	4.000	2.831	1.307	2.000	3.000	4.000	0.8996
LEVERAGE	0.783	1.463	0.111	0.359	0.777	0.800	1.404	0.054	0.365	0.867	0.8129
LOSS	0.301	0.459	0.000	0.000	1.000	0.305	0.461	0.000	0.000	1.000	0.8702
MKTIMPIND	0.173	0.379	0.000	0.000	0.000	0.178	0.383	0.000	0.000	0.000	0.5561
MKTIMPPCT	0.060	0.155	0.000	0.000	0.000	0.062	0.169	0.000	0.000	0.000	0.7925
MKTVAL	5.706	2.208	4.024	5.886	7.218	5.639	2.325	3.969	5.687	7.238	0.7308
MTB	3.380	4.539	1.233	2.141	3.866	3.258	3.295	1.313	2.383	3.953	0.6399
OWNERSHIP	0.035	0.091	0.000	0.002	0.013	0.037	0.104	0.000	0.003	0.017	0.7570
RETURN	0.132	0.672	-0.218	0.028	0.288	0.123	0.578	-0.180	0.031	0.293	0.7650
ROA	-0.007	0.167	-0.019	0.034	0.067	-0.008	0.203	-0.024	0.042	0.083	0.8750
STDEV	0.025	0.016	0.016	0.021	0.030	0.026	0.016	0.016	0.021	0.030	0.9132
TENURE	5.314	5.113	1.400	3.700	7.800	5.564	5.865	1.600	3.400	7.200	0.3658

Table 7 presents descriptive statistics and mean comparisons for firms included in the main analysis in Panel A. Panel B presents the results of estimating equation (1) without *GOODWILL_IMP* and *IMPAIRMENT_SPECIALIST*. Robust z-statistics in parentheses

***p<0.01, **p<0.05, *p<0.1. One-tailed significance used when directional prediction is made. Panel C presents descriptive statistics for the propensity score matched sample. All variables are defined in Appendix A. Values in the t-test columns of Panel A and B represent p-values of a t-test comparing means of firms with and without a GIKAM. Q1 and Q3 in Panel A and B represent the 25^{th} percentile and 75^{th} percentile, respectively.

Table 8: Goodwill impairment outcomes analysis

VARIABLES	Hypothesis	Predicted sign	(1) *GOODWILL_IMP*	(2) *IMPAIRMENT_AMT*	(3) *GOODWILL_IMP*	(4) *IMPAIRMENT_AMT*
GIKAM	H3	+	1.173***	0.022***	1.061***	0.021***
			(5.587)	(4.099)	(4.346)	(3.532)
BONUS		-	-0.225	-0.013***	-0.034	-0.013*
			(-1.125)	(-2.623)	(-0.120)	(-1.709)
OWNERSHIP		-	-1.269	-0.001	-2.671	-0.022
			(-0.994)	(-0.050)	(-1.282)	(-0.746)
TENURE		-	-0.019	0.000	-0.023	0.000
			(-0.826)	(0.639)	(-0.859)	(0.158)
BIG4		+	0.405	0.017***	0.302	0.010
			(1.395)	(2.664)	(0.839)	(0.982)
INDUSTRY_SPECIALIST		+	0.320	-0.000	0.578**	0.012*
			(1.625)	(-0.040)	(2.102)	(1.676)
FEE_RATIO		-	-0.498	0.003	-0.666	-0.000
			(-1.045)	(0.290)	(-0.981)	(-0.021)
AUDITOR_TENURE		-	-0.005	-0.000	0.004	0.000
			(-0.334)	(-0.175)	(0.225)	(0.505)
MKTVAL		?	0.195***	0.004***	0.101	0.004
			(2.913)	(2.709)	(1.047)	(1.600)
MTB		-	-0.093***	-0.002***	-0.065*	-0.003**
			(-3.022)	(-3.316)	(-1.725)	(-2.271)
MKTIMPPCT		+	-0.464	-0.006	0.221	-0.047
			(-0.598)	(-0.195)	(0.166)	(-0.884)
MKTIMPIND		+	0.328	0.022	0.029	0.026

		(1.027)	(1.576)	(0.058)	(1.116)
LEVERAGE	+	0.259***	0.007***	0.201**	0.013**
		(3.984)	(2.748)	(2.268)	(2.584)
RETURN	-	-0.195	-0.004	-0.163	-0.002
		(-1.291)	(-1.507)	(-0.962)	(-0.385)
STDEV	+	6.636	0.175	16.275**	0.701
		(1.257)	(0.913)	(2.094)	(1.458)
LOSS	+	2.085***	0.049***	2.100***	0.064***
		(8.966)	(7.054)	(6.848)	(5.713)
ROA	-	0.188	-0.001	0.779	0.036
		(0.347)	(-0.072)	(1.082)	(1.502)
EBITDA_CH	-	-0.312	-0.047***	-0.534	-0.043
		(-0.755)	(-2.605)	(-0.886)	(-1.612)
ACQUISITION	+	0.623***	0.014***	0.695***	0.017**
		(3.164)	(2.696)	(2.616)	(2.224)
GOODWILL_PROP	+	0.086	-0.087***	-0.467	-0.103***
		(0.131)	(-4.879)	(-0.523)	(-3.901)
KAMS-GIKAM	?	-0.071	-0.004**	-0.104	-0.008***
		(-1.042)	(-2.551)	(-1.190)	(-2.786)
Constant		-3.270***	0.000	-2.688**	-0.019
		(-4.684)	(0.020)	(-2.324)	(-0.651)
Observations		3,112	3,312	1,429	1,594
Pseudo R-squared		0.283		0.250	
R-squared			0.111		0.164
Industry FE		YES	YES	YES	YES

Year FE	YES	YES	YES	YES
PSMATCH	NO	NO	YES	YES

Table 8 presents the results of estimating equation (4) and equation (5) using pooled and propensity score matched samples. All variables are defined in Appendix A. Robust z- and t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1. One-tailed significance used when directional prediction is made.

Table 9: GIKAM timing and goodwill impairment outcomes

VARIABLES	Predicted sign	(1) *GOODWILL_IMP_LEAD*	(2) *IMPAIRMENT_AMT_LEAD*	(3) *GOODWILL_IMP*	(4) *IMPAIRMENT_AMT*
GIKAM	+	0.835***	0.021**	0.893***	0.018**
		(2.986)	(2.352)	(3.185)	(2.222)
GIKAM_LAG	+	0.006	0.001	0.429**	0.010
		(0.023)	(0.090)	(1.660)	(1.207)
BONUS_D	-	-0.175	-0.003	-0.239	-0.011**
		(-0.772)	(-0.420)	(-1.116)	(-1.949)
OWNERSHIP	-	-1.768	0.017	-1.290	0.006
		(-0.940)	(0.549)	(-0.884)	(0.297)
TENURE	-	0.006	0.001	-0.014	0.001
		(0.315)	(1.540)	(-0.557)	(1.041)
BIG4	+	0.830**	0.026***	0.419*	0.014**
		(2.232)	(2.725)	(1.375)	(2.137)
INDUSTRY_SPECIALIST	+	0.382**	0.002	0.404**	0.003
		(1.821)	(0.295)	(1.823)	(0.615)
FEE_RATIO	-	-0.188	0.014	-0.495	0.008
		(-0.344)	(0.905)	(-0.951)	(0.560)
AUDITOR_TENURE	-	-0.012	0.000	-0.014	-0.000
		(-0.717)	(0.241)	(-0.864)	(-0.789)
MKTVAL	*?*	0.040	-0.000	0.148**	0.003*
		(0.506)	(-0.076)	(2.179)	(1.852)
MTB	-	-0.166***	-0.002***	-0.084***	-0.002***

		(-3.153)	(-2.950)	(-2.946)	(-3.291)
LEVERAGE	+	0.329***	0.006**	0.290***	0.009***
		(3.838)	(2.320)	(4.392)	(2.867)
RETURN	-	-0.273*	-0.004	-0.053	-0.002
		(-1.393)	(-1.112)	(-0.365)	(-0.681)
LOSS	+	0.487**	0.023**	2.144***	0.053***
		(1.840)	(2.124)	(8.658)	(6.794)
ROA	-	1.347	0.028**	0.744	0.010
		(1.631)	(1.975)	(1.358)	(0.818)
EBITDA_CH	-	-0.056	0.011	-0.630*	-0.044***
		(-0.074)	(0.501)	(-1.310)	(-2.435)
ACQUISITION	+	0.196	-0.000	0.507**	0.010**
		(0.905)	(-0.013)	(2.399)	(1.920)
GOODWILL_PROP	+	1.641***	-0.028	0.374	-0.076***
		(2.610)	(-1.478)	(0.532)	(-4.238)
KAMS-GIKAM	*?*	-0.095	-0.002	-0.061	-0.004**
		(-1.228)	(-1.048)	(-0.813)	(-2.353)
Constant		-2.217***	-0.034	-3.826***	-0.040**
		(-3.128)	(-1.505)	(-5.330)	(-2.157)
Observations		1,789	1,924	2,506	2,674
Pseudo R-squared		0.204		0.285	
R-squared			0.064		0.117
Industry Fixed-Effects		YES	YES	YES	YES
Year Fixed-Effects		YES	YES	YES	YES

Table 9 presents the results of estimating equation (4) and (5) using *GOODWILL_IMP_LEAD* and *IMPAIRMENT_AMT_LEAD* as variables of interest in columns 1 and 2. Columns 3 and 4 present the results of estimating equations (4) and (5) with the inclusion of *GIKAM_LAG* as the variable of interest. Robust z- and t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1. One-tailed significance used when directional prediction is made.

Table 10: Determinants additional analysis

VARIABLES	Predicted sign	(1) *GIKAM*	(2) *GIKAM*
BONUS	-	-0.085	-0.084
		(-0.714)	(-0.706)
OWNERSHIP	-	-0.566	-0.557
		(-0.899)	(-0.885)
TENURE	-	-0.003	-0.003
		(-0.209)	(-0.231)
BIG4	?	-0.480**	
		(-2.092)	
INDUSTRY_SPECIALIST	?	-0.351	
		(-0.432)	
BIG4_SPEC	?	0.626	-0.190
		(0.753)	(-0.795)
BIG4_NONSPEC	?		-0.465**
			(-2.066)
IMPAIRMENT_SPECIALIST	?	1.552	1.529
		(0.664)	(0.655)
FEE_RATIO	-	-0.412	-0.421
		(-1.295)	(-1.325)
AUDITOR_TENURE	-	0.013	0.014
		(1.042)	(1.061)
MKTVAL	?	0.137**	0.135**
		(2.331)	(2.314)
MTB	-	-0.078***	-0.078***
		(-3.368)	(-3.366)
MKTIMPPCT	+	0.985*	0.969*
		(1.735)	(1.713)
MKTIMPIND	+	0.125	0.129
		(0.505)	(0.522)
LEVERAGE	+	0.203***	0.203***
		(3.710)	(3.711)
RETURN	-	0.009	0.010
		(0.112)	(0.118)
STDEV	+	-6.026	-5.910
		(-1.493)	(-1.465)
LOSS	+	-0.031	-0.034
		(-0.186)	(-0.206)

ROA	-	-1.159***	-1.164***
		(-3.038)	(-3.053)
EBITDA_CH	-	0.174	0.179
		(0.647)	(0.669)
ACQUISITION	+	0.423***	0.424***
		(3.405)	(3.408)
GOODWILL_PROP	+	4.369***	4.375***
		(8.443)	(8.459)
GOODWILL_IMP	+	1.108***	1.109***
		(5.135)	(5.143)
KAMS-GIKAM	?	-0.255***	-0.255***
		(-5.201)	(-5.206)
Constant		-0.764	-0.766
		(-0.691)	(-0.692)
Observations		3,312	3,312
Pseudo R-squared		0.266	0.266
Industry FE		YES	YES
Year FE		YES	YES

Table 10 presents the results of estimating equation (1) including the indicator variable *BIG4xINDUSTRY_SPECIALIST* (*BIG4_SPEC*) in column (1) and an indicator variable for non-industry specialist Big 4 auditors (*BIG4_NONSPEC*) in column (2). All other variables are defined in Appendix A. Robust z-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1. One-tailed significance given when directional prediction is made.

Table 11: Determinants Big 4 vs Non-Big 4

VARIABLES	Predicted sign	(1) *GIKAM*	(2) *GIKAM*
BONUS	+	0.141	-0.504**
		(0.993)	(-2.062)
OWNERSHIP	+	-0.258	-1.524*
		(-0.237)	(-1.778)
TENURE	+	-0.001	-0.012
		(-0.062)	(-0.571)
INDUSTRY_SPECIALIST	?	0.218	-0.739
		(1.401)	(-0.755)
IMPAIRMENT_SPECIALIST	?	12.729***	-1.048
		(2.930)	(-0.414)
FEE_RATIO	-	-0.226	-0.715
		(-0.599)	(-1.017)
AUDITOR_TENURE	-	0.006	0.023
		(0.378)	(1.058)
MKTVAL	?	0.220***	0.094
		(2.921)	(0.849)
MTB	-	-0.082***	-0.047*
		(-2.601)	(-1.854)
MKTIMPPCT	+	1.349*	1.110
		(1.704)	(1.082)
MKTIMPIND	+	0.298	0.023
		(0.975)	(0.047)
LEVERAGE	+	0.207***	0.188**
		(2.883)	(2.163)
RETURN	-	-0.107	0.081
		(-0.798)	(0.703)
STDEV	+	0.021	-5.769
		(0.003)	(-0.997)
LOSS	+	-0.381*	0.149
		(-1.796)	(0.511)
ROA	-	-3.165***	-0.014
		(-4.316)	(-0.025)
EBITDA_CH	-	0.428	-0.014
		(0.999)	(-0.034)
ACQUISITION	+	0.414***	0.606**
		(2.855)	(2.183)

GOODWILL_PROP	+	3.366***	6.086***
		(5.342)	(6.457)
GOODWILL_IMP_MAT	+	1.036***	1.144***
		(4.144)	(2.584)
KAMS-GIKAM	?	-0.269***	-0.307***
		(-4.560)	(-3.010)
Constant		-2.164*	-2.641*
		(-1.934)	(-1.957)
Observations		2,179	1,090
Pseudo R-squared		0.264	0.368
Industry Fixed-Effects		YES	YES
Year Fixed-Effects		YES	YES

Table 11 presents the results of estimating equation (1) with Big 4 only and non-Big 4 samples in columns (1) and (2), respectively. All variables are defined in Appendix A. Robust z-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1. One-tailed significance given when directional prediction is made.

Table 12: Price Reaction Analysis with Earnings Interaction

VARIABLES	Predicted sign	(1) *CAR 1-DAY*	(2) *CAR 1-DAY*	(3) *CAR 1-DAY*	(4) *CAR*	(5) *CAR*	(6) *CAR*
UNEXPECTED_GIKAM_P	-	0.003	0.003		0.001	0.002	
		(1.416)	(1.704)		(0.412)	(0.704)	
*EBITDA_CH*UNEXPECTED_GIKAM_P*	+	0.026**	0.021*		-0.012	-0.019	
		(1.713)	(1.429)		(-0.379)	(-0.662)	
UNEXPECTED_GIKAM_N	+	-0.000		-0.001	-0.001		-0.002
		(-0.023)		(-0.888)	(-0.383)		(-0.745)
*EBITDA_CH*UNEXPECTED_GIKAM_N*	-	0.016		0.007	0.022		0.026
		(0.653)		(0.311)	(0.667)		(0.837)
MKTVAL	-	-0.001	-0.001	-0.001	-0.002**	-0.002**	-0.002**
		(-1.018)	(-0.982)	(-0.859)	(-2.307)	(-2.287)	(-2.289)
MTB	-	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
		(-0.839)	(-0.839)	(-0.989)	(-0.376)	(-0.342)	(-0.395)
ROA	+	0.018**	0.018**	0.018**	0.025**	0.025**	0.025**
		(2.145)	(2.159)	(2.142)	(2.174)	(2.186)	(2.152)
LOSS	-	-0.001	-0.001	-0.001	-0.003	-0.003	-0.003
		(-0.319)	(-0.349)	(-0.442)	(-0.688)	(-0.711)	(-0.679)
EBITDA_CH	+	-0.004	0.002	0.005	0.003	0.010	-0.002
		(-0.357)	(0.149)	(0.624)	(0.158)	(0.685)	(-0.103)
LAG	-	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
		(-0.119)	(-0.116)	(-0.152)	(-1.192)	(-1.171)	(-1.218)
BETA	+	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
		(-0.807)	(-0.781)	(-0.938)	(-0.467)	(-0.447)	(-0.444)

LEVERAGE	+	0.001	0.001	0.001	-0.000	-0.000	-0.000
		(0.730)	(0.712)	(0.933)	(-0.152)	(-0.199)	(-0.149)
VOLATILITY	+	0.003	0.003	0.004	-0.007	-0.008	-0.007
		(0.530)	(0.489)	(0.559)	(-0.739)	(-0.776)	(-0.746)
BIG4	+	-0.000	-0.000	-0.001	0.003	0.003	0.003
		(-0.146)	(-0.156)	(-0.213)	(0.677)	(0.655)	(0.693)
INDUSTRY_SPECIALIST	+	0.003**	0.003**	0.003**	0.004**	0.004**	0.004**
		(1.748)	(1.755)	(1.791)	(1.656)	(1.658)	(1.694)
IMPAIRMENT_SPECIALIST	+	0.054	0.053	0.050	0.019	0.019	0.019
		(0.783)	(0.767)	(0.731)	(0.203)	(0.201)	(0.192)
KAMS-GIKAM	-	-0.001*	-0.001*	-0.001*	0.000	0.000	0.000
		(-1.400)	(-1.355)	(-1.461)	(0.258)	(0.302)	(0.265)
Constant		-0.005	-0.005	-0.003	0.012	0.011	0.013
		(-0.507)	(-0.532)	(-0.279)	(1.019)	(0.950)	(1.108)
Observations		1,982	1,982	1,982	1,982	1,982	1,982
R-squared		0.046	0.045	0.043	0.050	0.049	0.050
Industry Fixed-Effects		YES	YES	YES	YES	YES	YES
Year Fixed-Effects		YES	YES	YES	YES	YES	YES

Table 12 presents results of estimating equation (2) with the addition of an interaction term for *EBITDA_CH*UNEXPECTED_GIKAM_P* and *EBITDA_CH*UNEXPECTED_GIKAM_N.* All variables are defined in Appendix A. Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1. One-tailed significance used when directional prediction is made.

Table 13: Volume Reaction Additional Analysis

VARIABLES	Predicted Sign	(1) LOG(*ABN_VOLUME*)	(2) LOG(*ABN_VOLUME_1_DAY*)
ABS_UNEXPECTED_GIKAM	+	0.071**	0.073*
		(1.993)	(1.588)
MKTVAL	-	0.035*	0.073***
		(1.758)	(3.049)
MTB	-	-0.007	-0.004
		(-1.102)	(-0.588)
ROA	*?*	0.164	0.031
		(0.855)	(0.149)
LOSS	*?*	-0.103	-0.185*
		(-1.173)	(-1.760)
EBITDA_CH	*?*	-0.209	-0.370*
		(-1.101)	(-1.766)
LAG	-	-0.013***	-0.018***
		(-6.843)	(-7.372)
BETA	+	0.048	0.186**
		(0.748)	(2.456)
LEVERAGE	+	0.003	0.019
		(0.147)	(0.833)
VOLATILITY	+	0.112	0.201
		(0.580)	(0.805)
BIG4	+	-0.061	-0.187
		(-0.621)	(-1.610)

INDUSTRY_SPECIALIST	+	0.056	0.135**
		(1.038)	(2.191)
IMPAIRMENT_SPECIALIST	+	0.147	0.611
		(0.118)	(0.395)
KAMS-GIKAM	+	-0.020	-0.037
		(-0.963)	(-1.571)
Constant		-0.075	-0.185
		(-0.169)	(-0.364)
Observations		1,982	1,982
R-squared		0.080	0.118
Industry FE		YES	YES
Year FE		YES	YES

Table 13 presents results of estimating equation (3). All variables are defined in Appendix A. Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1. One tailed significance used when directional prediction is made.

Table 14: Trading Volume Analysis Directional GIKAMs

VARIABLES	Predicted Sign	(1) LOG(*ABN_VOLUME*)	(2) LOG(*ABN_VOLUME_ 1_DAY*)	(3) *ABN_VOLUME*	(4) *ABN_VOLUME_ 1_DAY*
UNEXPECTED_GIKAM_P	+	0.089*	0.040	0.140	0.160
		(1.478)	(0.548)	(1.164)	(0.913)
UNEXPECTED_GIKAM_N	+	-0.003	-0.019	-0.060	-0.157
		(-0.043)	(-0.240)	(-0.512)	(-0.963)
MKTVAL	-	0.035*	0.073***	-0.092**	-0.135**
		(1.755)	(3.034)	(-2.532)	(-2.495)
MTB	-	-0.007	-0.005	-0.009	-0.012
		(-1.173)	(-0.687)	(-0.836)	(-0.855)
ROA	?	0.169	0.032	0.723**	0.661
		(0.886)	(0.152)	(2.181)	(1.568)
LOSS	?	-0.102	-0.185*	-0.085	-0.236
		(-1.149)	(-1.750)	(-0.495)	(-0.950)
EBITDA_CH	?	-0.218	-0.382*	-0.331	-0.476
		(-1.144)	(-1.814)	(-0.964)	(-1.142)
LAG	-	-0.013***	-0.018***	-0.021***	-0.033***
		(-6.877)	(-7.385)	(-6.092)	(-6.198)
BETA	+	0.045	0.181***	-0.341***	-0.378**
		(0.694)	(2.404)	(-2.868)	(-2.417)
LEVERAGE	+	0.005	0.022	0.004	-0.009
		(0.239)	(0.964)	(0.102)	(-0.186)
VOLATILITY	+	0.110	0.198	0.211	0.636
		(0.573)	(0.795)	(0.540)	(1.163)

BIG4	+	-0.053	-0.180	-0.003	-0.203
		(-0.536)	(-1.554)	(-0.017)	(-0.704)
INDUSTRY_SPECIALIST	+	0.054	0.136**	0.125	0.320**
		(1.004)	(2.186)	(1.171)	(2.056)
IMPAIRMENT_SPECIALIST	+	0.081	0.497	-1.994	-2.578
		(0.065)	(0.321)	(-0.863)	(-0.725)
KAMS-GIKAM	+	-0.019	-0.037	-0.016	-0.038
		(-0.929)	(-1.558)	(-0.454)	(-0.702)
Constant		-0.038	-0.110	2.764***	3.789***
		(-0.090)	(-0.220)	(4.955)	(5.038)
Observations		1,982	1,982	1,982	1,982
R-squared		0.079	0.117	0.082	0.096
Industry Fixed-Effects		YES	YES	YES	YES
Year Fixed-Effects		YES	YES	YES	YES

Table 14 presents results of estimating equation (3). All variables are defined in Appendix A. Robust t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1. One tailed significance used when directional predication is made.

Table 15: Unexpected GIKAM Sensitivity Analysis

Panel A: Unexpected GIKAM terciles

VARIABLES	Predicted sign	(1) 1-*DAY CAR*	(2) 1-*DAY CAR*	(3) 1-*DAY CAR*	(4) *3-DAY CAR*	(5) *3-DAY CAR*	(6) *3-DAY CAR*
UGIKAM_P_3	-	0.002	0.002		0.003	0.003	
		(0.857)	(1.613)		(0.889)	(1.468)	
UGIKAM_N_3	+	-0.001		-0.002	-0.001		-0.003
		(-0.392)		(-1.441)	(-0.283)		(-1.345)
MKTVAL	-	-0.001	-0.001	-0.001	-0.002**	-0.002**	-0.002**
		(-0.956)	(-0.974)	(-0.892)	(-2.338)	(-2.347)	(-2.294)
MTB	-	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
		(-0.831)	(-0.783)	(-1.004)	(-0.238)	(-0.197)	(-0.413)
ROA	+	0.019**	0.019**	0.018**	0.026**	0.026**	0.025**
		(2.207)	(2.210)	(2.170)	(2.229)	(2.231)	(2.187)
LOSS	-	-0.001	-0.001	-0.001	-0.003	-0.003	-0.003
		(-0.454)	(-0.441)	(-0.473)	(-0.699)	(-0.689)	(-0.720)
EBITDA_CH	+	0.007	0.007	0.007	0.005	0.005	0.005
		(0.791)	(0.803)	(0.768)	(0.372)	(0.379)	(0.346)
LAG	-	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
		(-0.102)	(-0.092)	(-0.128)	(-1.175)	(-1.168)	(-1.198)
BETA	+	-0.002	-0.002	-0.002	-0.001	-0.001	-0.001
		(-0.896)	(-0.897)	(-0.899)	(-0.387)	(-0.387)	(-0.390)
LEVERAGE	+	0.001	0.001	0.001	-0.000	-0.000	-0.000

		(0.787)	(0.744)	(0.929)	(-0.274)	(-0.315)	(-0.156)
VOLATILITY	+	0.003	0.003	0.003	-0.008	-0.008	-0.008
		(0.536)	(0.541)	(0.525)	(-0.797)	(-0.795)	(-0.806)
BIG4	+	-0.000	-0.000	-0.001	0.003	0.003	0.003
		(-0.126)	(-0.117)	(-0.189)	(0.789)	(0.798)	(0.724)
INDUSTRY_SPECIALIST	+	0.002*	0.002*	0.003*	0.004	0.004	0.004*
		(1.672)	(1.660)	(1.748)	(1.598)	(1.593)	(1.666)
IMPAIRMENT_SPECIALIST	+	0.048	0.048	0.049	0.014	0.014	0.016
		(0.702)	(0.702)	(0.717)	(0.147)	(0.148)	(0.165)
KAMS-GIKAM	-	-0.001	-0.001	-0.001	0.000	0.000	0.000
		(-1.295)	(-1.268)	(-1.420)	(0.460)	(0.486)	(0.333)
Constant		-0.004	-0.005	-0.002	0.011	0.010	0.013
		(-0.414)	(-0.508)	(-0.243)	(0.943)	(0.896)	(1.184)
Observations		1,982	1,982	1,982	1,982	1,982	1,982
R-squared		0.044	0.044	0.044	0.050	0.050	0.049
Industry Fixed-Effects		YES	YES	YES	YES	YES	YES
Year Fixed-Effects		YES	YES	YES	YES	YES	YES

Panel B: Unexpected GIKAM quintiles

VARIABLES	Predicted sign	(7) 1-*DAY CAR*	(8) 1-*DAY CAR*	(9) 1-*DAY CAR*	(10) *3-DAY CAR*	(11) *3-DAY CAR*	(12) *3-DAY CAR*
UGIKAM_P_5	-	0.000	0.001		0.001	0.002	
		(0.236)	(0.557)		(0.220)	(0.607)	
UGIKAM_N_5	+	-0.002		-0.002	-0.004		-0.004
		(-1.071)		(-1.183)	(-1.425)		(-1.562)
MKTVAL	-	-0.000	-0.000	-0.000	-0.002**	-0.002**	-0.002**
		(-0.792)	(-0.839)	(-0.810)	(-2.253)	(-2.270)	(-2.262)
MTB	-	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
		(-0.985)	(-0.914)	(-1.012)	(-0.364)	(-0.329)	(-0.377)
ROA	+	0.018**	0.018**	0.018**	0.025**	0.025**	0.025**
		(2.169)	(2.163)	(2.153)	(2.172)	(2.176)	(2.160)
LOSS	-	-0.001	-0.001	-0.001	-0.003	-0.003	-0.003
		(-0.429)	(-0.430)	(-0.432)	(-0.679)	(-0.679)	(-0.680)
EBITDA_CH	+	0.007	0.007	0.007	0.005	0.005	0.005
		(0.786)	(0.805)	(0.767)	(0.360)	(0.369)	(0.351)
LAG	-	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
		(-0.133)	(-0.094)	(-0.164)	(-1.201)	(-1.181)	(-1.215)
BETA	+	-0.002	-0.002	-0.002	-0.002	-0.001	-0.002
		(-0.901)	(-0.893)	(-0.914)	(-0.394)	(-0.391)	(-0.399)
LEVERAGE	+	0.001	0.001	0.001	-0.000	-0.000	-0.000
		(0.875)	(0.810)	(0.913)	(-0.216)	(-0.248)	(-0.201)
VOLATILITY	+	0.003	0.004	0.003	-0.008	-0.008	-0.008

		(0.558)	(0.576)	(0.526)	(-0.792)	(-0.784)	(-0.803)
BIG4	+	-0.001	-0.001	-0.001	0.003	0.003	0.003
		(-0.225)	(-0.247)	(-0.214)	(0.682)	(0.667)	(0.686)
INDUSTRY_SPECIALIST	+	0.003*	0.003*	0.003*	0.004*	0.004*	0.004*
		(1.812)	(1.807)	(1.830)	(1.719)	(1.717)	(1.727)
IMPAIRMENT_SPECIALIST	+	0.050	0.052	0.050	0.018	0.019	0.017
		(0.732)	(0.749)	(0.721)	(0.185)	(0.195)	(0.180)
KAMS-GIKAM	-	-0.001	-0.001	-0.001	0.000	0.000	0.000
		(-1.464)	(-1.459)	(-1.445)	(0.314)	(0.316)	(0.324)
Constant		-0.004	-0.005	-0.002	0.012	0.011	0.013
		(-0.393)	(-0.520)	(-0.248)	(1.047)	(0.961)	(1.109)
Observations		1,982	1,982	1,982	1,982	1,982	1,982
R-squared		0.044	0.044	0.044	0.049	0.049	0.049
Industry Fixed-Effects		YES	YES	YES	YES	YES	YES
Year Fixed-Effects		YES	YES	YES	YES	YES	YES

Table 15 presents the results of estimating equation (2) replacing *UNEXPECTED_GIKAM_P* and *UNEXPECTED_GIKAM_N* with indicator variables based on the highest and lowest tercile (*U_GIKAM_P_3* and *U_GIKAM_N_3*) and quintile (*U_GIKAM_P_5* and *U_GIKAM_N_5*) in Panels A and B, respectively. All other variables are defined in Appendix A. The sample period is 2013 to 2020. Robust t-statistics in parentheses *** p<0.01, **p<0.05, *p<0.1. One-tailed significance used when direction prediction is made.

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