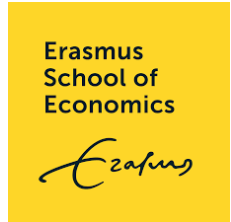


ERASMUS UNIVERSITY ROTTERDAM
ERASMUS SCHOOL OF ECONOMICS
MASTER'S IN ACCOUNTING, AUDITING AND CONTROL
Specialisation in Accounting and Auditing



**The Effects of Critical Audit Matters on
Managerial Reporting Aggressiveness:
Goodwill-related Critical Audit Matters and Goodwill Impairment**

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**The Effects of Critical Audit Matters
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Abstract: This paper examines the effectiveness of critical audit matters (CAM) on the aggressiveness level of the reporting behaviour and decision of management, specifically focused on the goodwill impairment disclosure. The critical audit matters have been implemented in order to make the auditor's report more informational and relevant for the users of financial statements, however the effectiveness of this CAM has yet to be further researched. Using 598 U.S. firms for 2020-2021 after the implementation of CAM disclosure regulation, the regression result shows that the disclosure of goodwill impairment-related CAM has a positive and significant association with subsequent material goodwill impairment recognition. Thus, this thesis finds that as the auditors disclose the companies' questionable goodwill impairment with CAMs in the audit report, the managers would be more likely to recognise goodwill impairments more honestly in the subsequent period. The results indicate that the CAMs have positive effects on the managements' financial reporting choices.

Keywords: Critical audit matter disclosures, Managerial reporting aggressiveness, Goodwill impairment

1. Introduction

In 2017, a new audit reporting standard called Critical Audit Matters (CAMs) was introduced by the U.S. regulatory board, Public Company Accounting Oversight Board (PCAOB). This CAMs are, according to PCAOB (2019), the matters arising from the auditing process of financial statements that “relate(s) to accounts or disclosures that are material to the financial statements; and involved especially challenging, subjective, or complex audit judgment”. The CAMs allowed the auditors to disclose the managerial accounting estimates and aggressive reporting practices, suggesting the financial reporting quality could be potentially improved with the CAMs (PCAOB, 2017). Nevertheless, as the CAMs have been implemented recently in 2019, the number of research done about the CAMs is still limited. Thus, this paper will explore whether the initial disclosure of goodwill-related CAMs would be associated with less aggressive managerial reporting behaviours on the goodwill impairments.

This research topic is important as the CAMs are relatively new, so there have not been broadly researched before, especially on the managerial reporting behaviours. The CAMs were only implemented to the large-accelerated filers from June 2019, and from December 2020 for the rest of the listed firms (PCAOB, 2019). Besides, the previous and concurrent literatures have mixed opinions regarding the introduction of CAMs on the quality of the financial reporting. For instance, some studies show that the CAMs have positively and significantly improve the financial reporting quality (e.g. Reid, Carcello, Li, Neal, & Francis, 2019; Gold, Heilmann, Pott, & Rematzki, 2020; Drake, Goldman, Lusch, & Schmidt, 2021), whereas others discover no effects on the financial reporting quality (e.g. Liao, Minutti-Meza, Zhang, Zou, 2019; Burke, Hoitash, Hoitash, & Xiao, 2021). Therefore, this paper focuses on the CAM disclosure related to goodwill impairment and directly identifying effects on the managerial reporting decisions.

This paper looks at the potential association between the goodwill impairment-related CAMs and the managerial reporting decisions on the disclosure of their goodwill impairments on the concurrent financial statement. The goodwill impairment is specifically focused on this paper, as up to 24% of the CAMs were issues regarding the impairments of goodwill and intangibles in 2020 (Hollie, 2020), taking majority of the CAMs alongside with Revenue recognition (see Figure 2, pg.). The number of goodwill impairment-related CAMs has notably increased in 2021, which may have been due to the economic uncertainties caused by COVID-19 (KPMG, 2020; Hollie & Yu, 2020). In addition, it is possible to specifically associate the goodwill impairment-related

CAM disclosures and the changes of goodwill impairment recognised by the managers in the goodwill-related financial statement accounts. This allows for a visible and clear detection of potential effects of CAM disclosure on managerial reporting decisions. As the goodwill impairment is highly dependent on the managerial discretion (Glaum, Landsman, & Wyrwa, 2018), the goodwill impairment-related condition would allow for a better understanding of the effects of CAM on the managerial reporting decisions.

Based on the stakeholder agency framework, the CAM disclosures should reduce the information asymmetry between the managers, external auditors and the users of the financial statements (Velte & Issa, 2019). Theoretically, the managers would be more willing to report their impairments and other CAM-related items, as they are aware that their aggressive reporting practices could be highlighted as CAMs in the financial statements, attracting the attention of the investors and the users of the financial statements (Fuller, Joe, & Luippold, 2021). Additionally, the managers may view the CAM disclosures as costly, due to reasons such as potential negative reactions from the investors, disclosing proprietary information, or additional audit costs (Bentley, Lambert, & Wang, 2021). Therefore, the managers would more likely report their CAM-related items truthfully. On the other hand, CAM disclosures could widen the auditors' expectation gap and increase the auditors' legal liability, as the investors and jurors may perceive the auditors to be providing more assurance in the audit (Bentley et al., 2021). Due to this increased auditors' legal liability, it may lead to the managers having more confidence in continuing to report their numbers aggressively. Considering these opposing views, I expect to find that the goodwill impairment-related CAMs would positively affect the managers to report their goodwill impairment values in the subsequent financial statements. Furthermore, this paper examines the concurrent effects of the goodwill-related CAM disclosures on the goodwill impairment reporting.

The sample includes U.S. based firms from fiscal year of 2020 and 2021, which is the period after the implementation of CAM disclosure regulation. The sample retained only the firms that have market-to-book ratios materially less than one in order to distinguish the companies that have overstated book values and higher likelihood of potential goodwill impairment, as derived from Carcello, Neal, Reid and Shipman (2020). Thus, a sample of 598 firm-year observations with a market-to-book ratio less than one for two consecutive years is used in the analysis.

To investigate whether the managers would recognise more material goodwill impairment, I test for the association between the goodwill impairment CAM disclosure and the likelihood of

material goodwill impairment by using a logistic regression model, including the control variables that are derived from the previous literature papers. The positive and significant coefficient of CAM from the logistic regression results shows that this paper's hypothesis is supported, that the disclosure of goodwill impairment-related CAM would influence the managers to recognise more material goodwill impairment in the following period.

This paper makes several contributions. Firstly, this paper helps PCAOB to understand the benefits, costs and unexpected consequences of implementing the new audit report regulation in the U.S., by directly testing the effects of CAM using empirical research design. The previous papers did not use empirical research design often when testing for the effects of CAM disclosures. Instead, most of the previous papers have used qualitative methods, such as interviews and surveys to study the effects of CAM disclosure on managerial behaviour (Bentley et al., 2021; Fuller et al., 2021; Gold et al., 2020), as it was easier to manipulate the CAM setting to observe the change in managers' behaviours. Therefore, this paper is one of the few papers to study the effects of CAM disclosure empirically. These empirical results can help the regulators to understand if the CAM disclosures have improved the managerial reporting behaviour, based on the actual data collected from the real-life market.

Secondly, this paper contributes to the managerial disclosure behaviour literature, which is relatively new as the effects of CAM disclosure on the managerial behaviour have not been studied comprehensively. The prior and concurrent literatures have mixed opinions on the effectiveness of CAM disclosures on managerial reporting behaviour and general financial reporting quality. Some papers suggest that the CAM disclosure would improve the managerial reporting behaviour (Drake et al., 2021; Gold et al., 2020; Fuller et al., 2021), whereas others find that CAMs would only be effective under circumstances, such as strong audit committee (Kang, 2019). Thus, this paper contributes to the ongoing discussion of the potential effects of CAM disclosure on managerial reporting behaviour.

Lastly, most of the prior papers focus on all topics of CAM disclosures, or general implementation of CAM. Therefore, it is more difficult to directly infer a potential association between CAM disclosures and managerial reporting behaviour. Drake et al (2021)'s paper is an exception, as they empirically examine the effects of tax-related CAM disclosure on tax-related earnings management. By narrowing to a specific CAM topic setting, they have a tighter environment to directly examine the association between CAM disclosure and financial reporting.

Similar to their paper, this thesis focuses on the goodwill impairment setting, with goodwill impairment-related CAM effects on goodwill impairment recognition. This will add high value to the literature on the direct effects of CAM disclosures, especially in goodwill impairment setting.

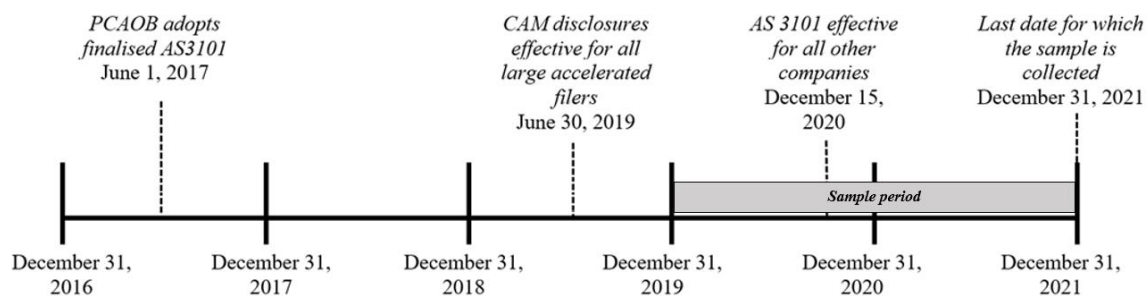
2. Literature Review and Hypothesis Development

2.1. Introduction of Critical Audit Matters Disclosure

The auditors’ report is the primary communicative means with the entity’s stakeholders, which includes a short report describing the company’s financial statements, as well as the responsibilities of management and the auditor (IAASB, 2012). However, the stakeholders have been demanding improvements in the traditional audit reporting to provide sufficient and useful information with more transparency. This discrepancy between what the users believe is necessary, useful and informative, and what is provided to them through the audit reports and financial statements, is referred to as the “information gap” (IAASB, 2012). The information gap was repeatedly emphasised and stressed by several researchers and academics, who were also calling for appropriate responses and potential reforms in the auditor’s report (Gold & Heilmann, 2019). Recognising this problem, the regulatory boards such as International Auditing and Assurance Standards Board (ISAAB) and the Public Company Accounting Oversight Board (PCAOB) implemented several initiatives, including the disclosure of critical audit matters (hereafter, CAMs), (or Key Audit Matters/KAMs in the European jurisdiction), in the independent auditor’s report.

PCAOB has introduced an expanded audit reporting standard, AS 3101, on June 30 2017 (PCAOB, 2017). This new standard includes the communication of CAMs, which would take effect from June 30, 2019 for large accelerated filers, and from December 15, 2020 for all the other firms. For a better illustration of the CAM implementation (under AS 3101), Figure 1 presents a timeline with the effective dates announced by PCAOB.

Figure 1. Timeline of CAM disclosure regulation implementation



PCAOB (2017) defines CAMs as follows:

Communication of critical audit matters - Matters arising from the audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements; and (2) involve especially challenging, subjective, or complex auditor judgment. (p. 1)

In other words, the auditors would have to communicate the considerations they had when identifying the CAMs, and the difficulties and issues that were addressed in the audit processes. As can be seen from the examples of goodwill impairment-related CAM disclosure in Appendix II, the auditors have to include the brief description of the matter, why they have chosen it to be a CAM and what they have done to resolve the difficulties during the audit process.

The PCAOB (2017) suggests that the expanded audit report would decrease the information asymmetry between the investors, external auditors and the management, as the CAMs would provide meaningful and relevant information to the investors. Although this is the intended objective of the expanded audit reporting standard, prior literature and research indicate otherwise. For instance, Files and Gencer (2020), as well as Burke et al. (2021) have shown that the CAM disclosures in the first year did not significantly affect the price or volume reactions. Furthermore, Carver and Trinkle (2017) have found that the CAM disclosures would negatively affect the readability of audit reports and result in no significant impact on the informational content for the investors. At the same time, Christensen, Glover, and Wolfe (2014) found that the CAM disclosures would negatively influence the investors' decisions, while Kachelmeier, Rimkus, Schmidt and Valentine (2020) found that investors lose their confidence in the parts in the financial statements that are highlighted as CAMs. Therefore, the expected increase in information relevance and content from disclosing CAMs is questionable and still much debatable.

2.2. Improved Managerial Reporting Behaviour

The PCAOB regulators have proposed that the CAM disclosures could indirectly improve the quality of public disclosures. In the report, the PCAOB stated that CAM disclosures could “lead management to improve the quality of their disclosures because they know that investors and auditor will be scrutinizing more closely the matters identified as critical audit matters” (PCAOB, 2017, p. 81).

The prior research of CAM disclosures on managerial reporting is relatively scarce, compared to the other consequences such as investors' reactions or auditors' liability (Gold & Heilmann,

2019). A summary of the prior literature regarding CAM disclosures on managerial reporting behaviour is presented in Table 1.

Table 1. Literature review of CAM disclosures

Year	Authors	Sample and research design	Dependent variable	Independent variable	Key findings
2021	Bentley, Lambert, Wang	Experimental design; 140 corporate managers	Manager's operating decisions	CAM disclosure	CAM disclosure reduces managers' risk-decreasing activities (such as hedging) more than risk-increasing activities (such as speculations).
2021	Drake, Goldman, Lusch, Schmidt	Empirical design; Large accelerated filers in the U.S. with 2019 fiscal year after June 30, 2019; 1,604 observations	Tax earnings management (Tax expense)	Tax-related CAM disclosure	Managers are aware of the increased scrutiny of tax-related Cam disclosure and reduce in tax earnings management.
2021	Fuller, Joe, Luippold	Experimental design; 145 public company financial executives	Manager's reporting disclosure behaviour	CAM disclosure; mediated by Audit Committee strength	Managers would disclose more risk underlying complex estimates when the CAM disclosure includes details about the risk of estimates, combined with more effective audit committee strength
2020	Gold, Heilmann, Pott, Rematzki	Experimental design; 104 financial statement preparers	Manager's reporting behaviour	KAM disclosure	Managers with KAMs-included audit report more conservatively compared to managers with audit reports without KAMs.
2019	Kang	Experimental design; 78 audit committee members in public company	Audit committee's behaviour	CAM disclosure	Audit committee members would ask more challenging questions to the managers about their accounting estimates with the CAM disclosure
2018	Reid, Carcello, Li, Neal	Archival design; Firms with a premium listing of equity shares in the U.K.; 1,088, 888, 884, 1,304, and 1,292 firm-year observations (for each dependent variable)	Financial reporting quality (Abnormal accruals, Meet or beat, Earnings response coefficient), Audit fee, Audit delay	Auditor reporting changes (including CAM disclosure)	Financial reporting quality has improved, with significant reductions in abnormal accruals and the propensity to just meet or beat the analysts' forecasts with the recent changes in auditor reporting. The auditor reporting change did not have any significant impact in audit fees or audit delay.

Out of the prior literature, Drake et al. (2021)'s paper is one of the few to specifically focus on the direct effect of a particular CAM presence on the management's reporting behaviour. They examine the effects of tax-related CAMs on tax earnings management. By using difference-in-difference design to compare the companies that have or have not received a tax-related CAM, between prior year and first year of CAM implementation, Drake et al. (2021) find that the management would adjust the tax reporting accordingly and reduce their tax-related earnings management in the presence of tax-related CAM, compared to the companies without tax-related CAM. From their paper, it is apparent that the management would have higher tendency to report less aggressively with the disclosure of CAM in the tax setting. Nevertheless, more studies should be done in different areas of the CAM topics to further understand and analyse the effects of CAM disclosures on the managerial reporting aggressiveness.

Although the prior literature lacks direct testing of CAM disclosure on the level of managerial reporting aggressiveness, their prior findings could still be used as good explanations to why the managerial reporting behaviour would be improved.

First, the increase of disclosure costs could encourage the managers to report less aggressively. Bentley et al. (2021) have examined the effect of CAM disclosures on the management's real operating decisions and have found that the managers would reduce the risk-decreasing operating activities more than the risk-increasing operating activities with the CAM disclosure. Their study shows how the management would view the CAM disclosure, as the management would take account of the disclosure costs and the "implied auditor support" benefit that arise from the disclosure of CAM. Their result shows that the management would decrease manager's risk-decreasing activities, which involves higher disclosure costs, but increase the managers' risk-increasing activities, which has higher implied auditor support that offsets the disclosure costs. Therefore, their results support that the managers would try their best to avoid disclosure costs, leading to the managers reporting their numbers more honestly with less aggressive accounting practices in the first place to avoid receiving CAM.

To further support this, several prior papers highlight the specific disclosure costs related to CAM. For instance, a CAM disclosure could pressure the managers to disclose more sensitive and private information, such as sensitivity analysis, as the management would need to justify their choice of subjective accounting estimates (Fuller et al., 2021). However, the management would

need to face the risk of disclosing private or proprietary information to the competitors, which may potentially damage the firm's competitive position in the market (Healy & Palepu, 2001).

Another example is given by Kang (2019), who finds that when a CAM disclosure is present, the audit committee would ask more challenging questions to the management about the accounting estimates. Thus, with the CAM disclosure, the management would have to face higher criticism from the audit committee and successfully convince the audit committee why they have decided on the specific subjective estimates. This stressful situation could motivate the managers to report less aggressively in the first place to avoid CAM disclosure.

Similarly, the management may face potential increase in audit costs with the presence of CAM disclosures (Bentley et al., 2021). As the auditors face higher auditor liability perceived from jurors in the presence of CAM disclosures (Gimbar, Hanse, & Ozlanski, 2016; Backof, Bowlin, & Goodson, 2019), they would extend their audit work and focus on identifying and analysing the significant CAMs. The auditors may increase the audit fees by expanding their planned audit procedures with additional procedures in a wider audit scope (Messier, Glover, & Prawitt, 2016). Thus, the managers, who would want to avoid being charged with higher audit costs (or any other disclosure costs), would change their reporting behaviours with more realistic estimations which would improve the quality of pre-audited numbers.

Besides, the management could use less aggressive accounting practices due to the increased bargaining power that the auditors would have. The investors would generally perceive auditor-provided information to be more credible and reliable than the management disclosures (Elliott, Fanning, & Peecher, 2020). As the CAM disclosures would allow auditors to highlight the significant matters in the audit report, it could further attract higher scrutiny and attention from the regulators and financial statement users (Burke et al., 2021). From this, the auditors could gain higher bargaining power as the auditors could "threaten" the management to disclose CAMs to attract the public attention, which the management would wish to avoid. Reid et al. (2019)'s paper further supports this, as they have examined the effectiveness of the recent auditor reporting changes in the U.K. (which included the disclosure of CAM) on financial reporting quality and audit costs. They suggest that the threat of the additional disclosure could give the auditors more bargaining power over the management, thus leading the management to adopt and accept more disclosures. Their findings show that the management would reduce their opportunistic behaviour of subjective estimates, as they would be more fearful of the auditors' comments about it. Thus,

the management could be more willing to take less aggressive accounting practices in order to avoid any kind of unwanted attentions and scrutiny from the auditors, and ultimately from the public.

In summary, the CAM disclosure could improve the management reporting aggressiveness due to: (i) potential increase of disclosure costs; and (ii) increased bargaining power of the auditors. The paper by Drake et al. (2021) is one of the few papers to show this empirically, in a tax-related setting. Meanwhile, several academics argue that the CAM could lead to unanticipated outcomes that may lead to the management to persist using the aggressive accounting practices. This is discussed in the next section.

2.3. Unexpected Consequences of CAMs

Although CAM disclosure could improve the managerial reporting on one side, it could also lead to unanticipated result of widening the auditors' expectation gap. With implementation of the CAM disclosures, investors and public would hold higher expectations from the auditors to provide greater assurance without the explicit statement of the auditors taking on higher liability for the risks of the company's financial reports (Backof et al., 2019; Gimbar et al., 2016). With higher auditors' liability assumed, the investors and financial statement users may only focus on the emphasised CAM disclosures and presume that the other economic or underlying activities not stated in the CAMs to be unimportant and less concerning. Thus, the investors may conclude the auditors' silence as the auditors being comfortable or supportive of the rest of the firms' economic activities. This tendency of the investors is supported by the pragmatic theory of language in the field of philosophy and linguistics, which suggests that the recipients of the messages would often presume unsaid matters to be less concerning and less relevant than what has been said (Bloomfield, 2012; Ephratt, 2011). In other words, CAM disclosures may lead to implications that there are no other economic risks with the firms' other underlying activities besides the matters highlighted as CAMs, that is supported by the auditors' silence. Bentley et al. (2021) call this effect as "implied auditor support" and suggest that managers would value this more than the disclosure costs.

Similarly, Tan and Yeo (2021) suggest that based on the moral licensing theory, managers could be motivated to continue reporting their numbers aggressively. According to the moral licensing theory, once the individuals are aware of the "license" that allows them to act in a less moral way, they would likely engage in less moral behaviour (Miller & Effron, 2010). Kouchaki (2011) has found that the virtuous actions from others that one identifies with, could lead to one

using the moral license to justify their immoral behaviours. Applying to this CAM disclosure situation, the auditors would be seen as “more virtuous” in public’s perception, as the public would hold higher assurance from the auditors. With the managers aware of this, they would be induced to behave with moral license and engage in more biased or aggressive accounting reporting. The managers would feel this because the investors and users of financial statements have been “forewarned about the estimates’ potential inaccuracy” (Griffin, 2014, pg. 1173) with the CAM disclosures, so managers would not feel the need to change their aggressive reporting behaviour. To further support this, Kachelmeier et al. (2020) have found that CAM disclosures provide forewarning effects to the financial statement users regarding the measurement uncertainties. Tan and Yeo (2021) have also found that this moral license is strengthened in a close auditor-client relationship.

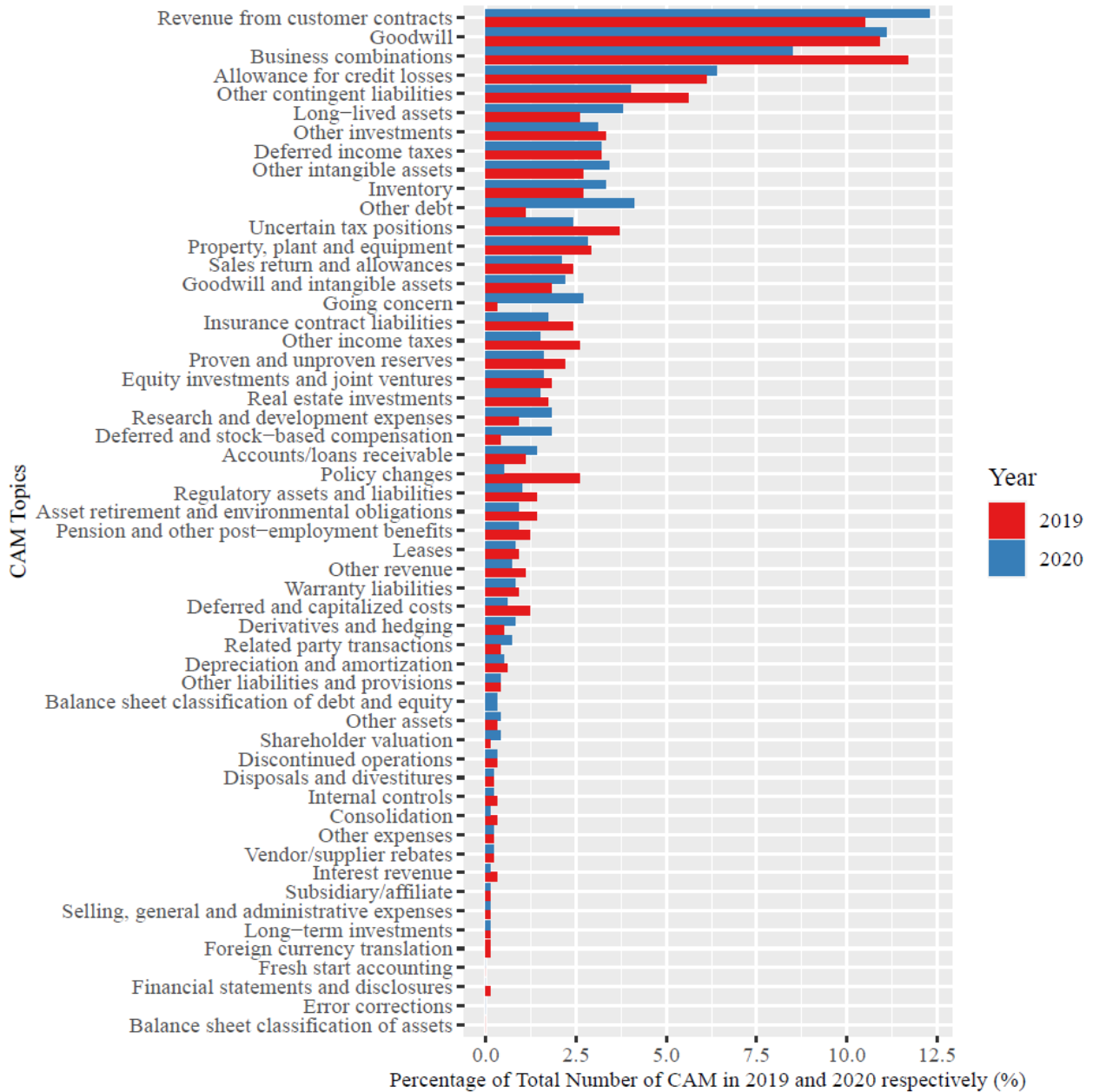
Although there has not been any paper to test the effect of this implied auditor support and moral license theory directly due to the complexity of measurement of the variables, it is important to acknowledge that the CAM disclosures could have negative consequences. Once the managers are well aware of the effects of CAMs, they could misuse and exploit them for their own personal gains.

2.4. Critical Audit Matters and Goodwill Impairment

Prior literature has mainly used experimental settings to examine the effect of CAM implementation on the management’s reporting behaviour.

As seen from Table 1, majority of the papers, except Reid et al. (2019) and Drake et al. (2021), have used experimental settings to test for the effects of CAM disclosures. This is because the experimental approach allows the researchers to understand the managements’ decision processes better, and to test if the CAM implementation has directly influenced the managements’ decision making (Gold et al., 2020). Additionally, prior studies (except for Drake et al.’s (2021)) have not focused on a specific CAM topic, but instead looked at the implementation of the CAM regulation and the effects after the introduction of the general CAMs. The empirical papers also only used the standard measurement of financial reporting quality, such as abnormal accruals and earnings management. For instance, Reid et al. (2019) examined the financial reporting quality after the CAM disclosures with the standard measurements, but they did not test for accounts or transactions that are related to the specific CAMs. By focusing on one specific account that is related to CAM, this paper tests the direct association between the CAM disclosures and the managers’ financial

Figure 2. CAM Distribution Graph



Notes: This figure presents the distribution of CAM topics for 2019 and 2020 respectively. The percentage of total number of CAM is calculated by the number of a specific CAM divided by the total number of all CAMs disclosed in a year. The top blue bar represents 2020, as the bottom red bar represents 2019.

reporting choices more clearly, compared to using general measurement of financial reporting. This is similar to the Drake et al. (2021)’s research design, where they have focused on income tax reporting and tax-related CAM disclosures.

The goodwill impairment is specifically focused on this paper, as it is one of the most common CAM disclosed by the auditors. Since the mandatory CAM disclosures in 2019, the most heavily disclosed CAMs were issues related to goodwill or intangible impairments and revenue recognition (Hollie, 2020). This is also reflected in Figure 2 (pg. 12), where the most disclosed CAM topics in both year 2019 and 2020 are Revenue from customer contracts, Goodwill, and Business combinations. Goodwill impairment has been one of the popular CAMs to be disclosed, as it involves high managerial discretion in financial reporting. The managers could opportunistically misuse their discretion to accelerate or delay the goodwill impairments for their own incentives (Glaum et al., 2018; Beatty & Weber, 2006). Thus, goodwill impairment condition will allow for a powerful setting to examine the CAM disclosure effect on the managerial reporting behaviour.

As discussed previously, the disclosure of goodwill impairment-related CAMs would raise the attention and scrutiny of the public on auditors and management. Once the auditors identify goodwill impairment-related CAMs, they would carry out additional procedures to test the managerial discretions on goodwill impairment decisions. Managers would be aware of the CAMs, as the auditors are obligated to communicate the CAMs with the audit committee before publishing the financial statements (Kang, 2019). Therefore, the managers would be expected to write-off higher goodwill impairment values in the subsequent financial statements in order to mitigate the negative reactions from the capital market, as well as to avoid receiving another CAM in the following period. On the other hand, managers could choose to not write-off their goodwill impairments and continue to use aggressive accounting methods to value the goodwill, as they could use the explanations of the auditors in CAM to validate and further support their discretionary goodwill impairment estimates.

Therefore, I expect that goodwill impairment-related CAMs would lead to less aggressive managerial reporting on goodwill impairment, which is hypothesised as follows:

Hypothesis: *Goodwill impairment-related critical audit matter disclosure would lead to the manager recognising more material goodwill impairments in the following year.*

3. Sample Selection and Research Design

3.1. Research Methodology

To test the effect of initial goodwill impairment-related CAM disclosures on the higher likelihood of on subsequent goodwill impairment recognition, we estimate the following logistic regression model:

$$IMP_{it} = \beta_0 + \beta_1(CAM_GW_{it-1}) + \beta_X CONTROLS_{it} + IND_FE + YEAR_FE + \varepsilon_{it} \quad (1)$$

where i denotes companies and t denotes year. The independent variable CAM_GW is an indicator variable that is one for firms that have received goodwill impairment-related CAM in the audit report in the prior year-end ($t-1$) audit report, and zero otherwise. Next, following the methodology of Carcello et al. (2020), $IMPAIR$ is one if the company records a goodwill impairment greater than 0.5 percentage of revenue in the current year (t), and zero otherwise. As described in the previous section, this paper is to examine whether the disclosures of goodwill impairment-related CAMs would reduce the managerial reporting aggressiveness; in other words, whether the managers would be more likely to recognise more goodwill impairment after the CAM disclosure by the auditors. Thus, I predict that the β_1 would be positive and statistically significant, as the goodwill impairment CAM companies would be more likely to report higher goodwill impairment in the subsequent period compared to non-goodwill impairment CAM companies.

The control variables included in the regression model are derived from prior literatures. All the variables are defined in the appendix. As Carcello et al. (2020) have stated, nonaudit fees is found to have a significant and negative association with the goodwill impairment. Thus, Fee_Ratio is included to control for the ratio of nonaudit fees to total audit fees paid by the client. Additionally, going concern and small market value have also been found to increase the likelihood of the company recording the impairment, as the management would feel more comfortable reporting higher impairment after receiving going concern opinion (Carcello et al., 2020; Beatty & Weber, 2006). Thus, GC and MTB are included as controls. Firms that are audited by Big 4 auditors are found to have recorded a material impairment more frequently (Ayres, Neal, Reid, & Shipman, 2019), thus $BIG4$ is also included as a control for impairment. Additionally, firms with higher goodwill in the asset composition would have higher possibility of impairing the goodwill, thus GW is added as a control variable. On the other hand, control variables for the economic performance of the firm are also added, such as change in return on assets (ΔROA) and in sales

($\Delta SALES$), and leverage (LEV) that are negatively associated with goodwill impairment (Zang, 2008). Variables that are used to proxy the complexity of firm's accounting are also included, such as firm size ($SIZE$) and number of business segments ($NSEG$) (Chychyla, Leone, & Minutti-Meza, 2019). Furthermore, the industry fixed effects (IND_FE) and year fixed effects ($YEAR_FE$) are included, with the industry fixed effects classified by using the Fama-French 48 industries classification.

3.2. Sample Selection

As shown in the timeline of Figure 1, the sample is selected between fiscal year of 2020 and 2021. The data set from 2022 was incomplete as only the first quarter data was available on Compustat at this period of writing, thus the sample was limited to the fiscal year of 2021.

Table 1 describes the sample selection of the firms that received the goodwill impairment-related CAMs in their financial statements. First, all the companies that have been listed on Compustat in the sample period of fiscal year 2020 to 2021 have been selected, with complete goodwill, goodwill impairment and revenue data. The list of firms that have received goodwill impairment-related CAM in fiscal year 2019 and 2020 have been selected from Audit Analytics. As the research design is to test for the recognition of goodwill impairment after the CAM disclosure in the previous year, the goodwill impairment dataset of the fiscal year (t) from Compustat is merged with the CAM dataset from Audit Analytics in the previous year ($t-1$). In other words, goodwill impairment dataset from 2020 is merged with CAM dataset from 2019, and likewise for goodwill impairment dataset of 2021 with 2020 CAM dataset. As the mandatory disclosure of CAM was applied to the large-accelerated filers first in June 2019, followed by all the non-accelerated filers in December 2020 (as shown in Figure 1), the sample may be biased as the non-accelerated filers did not have to disclose CAM and recognise material goodwill impairment. Therefore, as there is a risk of the sample being biased towards not recognising material goodwill impairment due to different time of CAM implementation, only the large-accelerated filers are included in the sample data of 2020 (with the CAM disclosure in 2019).

Then, the observations without the complete data of the control variables are eliminated from the sample. For the sample data of 2021 (with the CAM disclosure in 2020), all the filers are included. Then, similar to the conditions set by Carcello et al. (2020), the sample is then limited to the companies that have a market-to-book ratio of less than one for the previous and current year consecutively. This is to ensure that the market has indicated that impairment is already expected,

Table 2. Sample Selection

Panel A: Sample Selection for companies with goodwill impairment-related CAMs		
Firms with goodwill-impairment and revenue data on Compustat from fiscal year 2020 and 2021		12,482
Less: Non-large accelerated filers in 2019-2020		(4,353)
Less: Those with missing values for control variables		(3,472)
Less: Those without a market-to-book ratio materially less than one in previous year		(3,717)
Less: Those without a market-to-book ratio materially less than one in current year		(342)
Number of firms with goodwill impairment-related CAMs with conditions		598
Panel B: Yearly and CAM-disclosed Distribution in Sample		
Year and CAM disclosure	2020	2021
Received goodwill impairment-related CAM in 2019	28	62
No goodwill impairment-related CAM in 2019	148	360
Yearly total	176	422
Total		598

Notes: Panel A outlines the selection process for the primary sample. Panel B shows the number of companies that received goodwill impairment-related CAM in the previous year for each year.

as the book value of the net assets of the company could be overstated. The final sample consists of 598 firm-year observations.

4. Empirical Results

4.1. Descriptive Statistics

Panel A of Table 3 shows the descriptive statistics for the full sample of 598 firm-year observations. A material goodwill impairment (*IMP*) is recorded in approximately 8% of the total observations, while 15.7% of the total observations received goodwill impairment-related CAM (*CAM_GW*) in the previous year. 71.4% of the total observations have been audited by one of the Big 4 auditors (*BIG4*), and 5.5% of the total observations have received going concern in their audit report (*GC*). On average, the firms receive one to two CAMs per year (*NCAM*).

In Panel B of Table 3, the sample firms are separated based on whether the firm has received goodwill impairment-related CAM in the previous year ($CAM_GW = 1$) or not ($CAM_GW = 0$). In line with my expectation, a higher percentage of the firms that received CAM in the previous year (18.9%) have recorded material goodwill impairment (*IMP*) in their financial statement, compared to the firms that did not receive goodwill impairment CAM in the previous year (6.1%). This difference is significant at the $p < 0.01$ level. As compared to a firm without previous goodwill impairment CAM, the firm with goodwill impairment CAM has a significantly higher likelihood

Table 3. Descriptive Statistics

Panel A: Descriptive Statistics (N=598)					
Variable	Mean	SD	p(25)	Median	p(75)
<i>IMP</i>	0.080	0.283	0	0	0
<i>CAM_GW</i>	0.151	0.309	0	0	0
<i>BIG4</i>	0.714	0.452	0	1	1
<i>FEE_RATIO</i>	0.122	0.122	0.01895	0.087	0.189
<i>GC</i>	0.055	0.229	0	0	0
<i>GW</i>	0.051	0.097	0	0	0.054
<i>LEV</i>	1.010	2.144	0.560	0.841	1.041
<i>MTB</i>	-22.552	305.85	-1.096	0.487	0.781
<i>NCAM</i>	1.416	0.715	1	1	2
<i>NSEG</i>	2.375	1.781	1	1	4
<i>REST</i>	0.047	0.211	0	0	0
<i>ROA</i>	3.119	60.304	-1.182	-0.359	0.334
<i>SALES</i>	0.409	3.669	-0.127	0.009	0.170
<i>SIZE</i>	7.214	2.620	5.614	7.375	8.689

Panel B: Comparative Descriptive Statistics				
Variable	<i>CAM_GW</i> = 0	<i>CAM_GW</i> = 1	Difference	t-stat
	(N=508)	(N=90)		
<i>IMP</i>	Mean 0.061	Mean 0.189	-0.128	-2.985***
<i>BIG4</i>	0.703	0.778	-0.075	-1.546
<i>FEE_RATIO</i>	0.121	0.126	-0.005	-0.371
<i>GC</i>	0.061	0.022	0.039	2.053*
<i>GW</i>	0.042	0.098	-0.055	-4.118***
<i>LEV</i>	1.047	0.800	0.247	2.286**
<i>MTB</i>	-25.968	-2.088	-23.879	-1.565
<i>NCAM</i>	1.336	1.700	-0.334	-3.746***
<i>NSEG</i>	2.258	3.033	-0.775	-3.746***
<i>REST</i>	0.049	0.033	0.016	0.745
<i>ROA</i>	3.963	-1.646	5.609	1.854*
<i>SALES</i>	0.463	0.105	0.358	1.849*
<i>SIZE</i>	7.019	8.315	-1.296	-4.475***

Notes: Panel A presents descriptive statistics of the full sample. Panel B presents comparative descriptive statistics for two subsamples of interest: *CAM* = 0 (companies that did not receive goodwill impairment-related *CAM* in the previous year) and *CAM* = 1 (companies that received goodwill impairment-related *CAM* in the previous year). The last column presents unpaired t-test between the two subsamples. All variables are explained in the Appendix. *, ** and *** indicate significance at 0.10, 0.05 and 0.01 levels, respectively (based on two-tailed tests).

of having a Big 4 auditors (*BIG4*), lower likelihood of receiving going concern opinion (*GC*), higher leverage (*LEV*), higher number of *CAM*s received (*NCAM*), higher number of business segments (*NSEG*), and bigger firm size (*SIZE*).

Table 4. Frequency Table of Goodwill Impairment CAM and Material Goodwill Impairment

		Goodwill Impairment CAM Disclosed		Total
		Yes	No	
Material Goodwill Impairment	Yes	17	73	90
	No	31	477	508
Total		48	550	598

Notes: This table presents the frequency distribution of the goodwill impairment CAM and subsequent reporting of material goodwill impairment.

Table 4 shows the distribution of frequency of the main variables in the logistic regression model, which are goodwill impairment-related CAM and subsequent reporting of material goodwill impairment. Out of the 8% of the full sample (N=48) that has received goodwill impairment-related CAM, 35% of them (N=17) have reported subsequent material goodwill impairment. Meanwhile, 13% of the firms without goodwill impairment-related CAMs (N=73) reported material goodwill impairment.

4.2. Main Results and Analysis

Table 5 presents the results of the logistic regression model (1). The positive and significant coefficient of *CAM* shows that the companies with goodwill impairment-related CAM in the previous year would have significantly higher propensity to recognise material goodwill impairment in the current year, compared to the companies without any goodwill impairment-related CAM. The odds of recognising subsequent material goodwill impairment for companies with goodwill impairment-related CAMs are 3.49 greater than the companies without goodwill impairment-related CAMs. Based on this result, there is sufficient evidence to support the paper's hypothesis that the goodwill impairment-related CAMs would encourage the manager to recognise material goodwill impairment in the subsequent period.

Table 6 shows a matrix of predicted and actual goodwill impairment values, with the regression model (1) predicting the likelihood of material goodwill impairment. Panel A shows the performance of the regression model, with the number of material goodwill impairment observations correctly or incorrectly predicted. Panel B shows the metrics used to evaluate the matrix. The accuracy of the regression model is 70%, which shows that the regression model will correctly identify material or non-material goodwill impairment 70% of the times. Out of the 550 observations with no material goodwill impairment, 8 are predicted incorrectly with material goodwill impairment, which is shown in Panel B with 99% specificity. On the other hand, 29 out of 48 material goodwill impairment observations are predicted incorrectly with no material

Table 5. Impairment Regression Analysis

Dependent Variable IMP = 1		
Variable	Coefficient	(z-stat)
<i>(Intercept)</i>	1.113	(0.501)
CAM_GW	1.233**	(2.465)
<i>BIG4</i>	-0.867	(-1.467)
<i>FEE_RATIO</i>	-0.961	(-0.540)
<i>GC</i>	1.093	(1.267)
<i>GW</i>	2.094	(0.870)
<i>LEV</i>	-0.411	(-0.889)
<i>MTB</i>	0.071	(1.138)
<i>NCAM</i>	0.480*	(1.891)
<i>NSEG</i>	-0.124	(-1.040)
<i>REST</i>	1.108	(1.614)
<i>ROA</i>	-0.034*	(-1.876)
<i>SALES</i>	-1.821***	(-3.158)
<i>SIZE</i>	0.083	(0.735)
Fixed effects	Industry & Year	
N	598	
Pseudo R ²	0.466	
Area under ROC curve	0.916	

Notes: This table presents the results of the estimations of logistic regression model (1). All variables are defined in the Appendix. Industry- and year-specific fixed effects are not reported for brevity. *, ** and *** indicate significance at 0.10, 0.05 and 0.01 levels, respectively (based on two-tailed tests). Bold text indicates variables of interest.

goodwill impairment, which is shown with 40% sensitivity in Panel B. To sum it up, the metrics show that the logistic regression model (1) is good in predicting firms without material goodwill impairment, compared to predicting presence of material goodwill impairment.

4.3. Robustness Tests

4.3.1. Sample without market-to-book ratio condition

As previously mentioned, the main sample have eliminated observations with market-to-book (MTB) value more than one in two consecutive years, in order to retain the firms that would have higher likelihood of goodwill impairment. This condition, however, could influence the likelihood of reporting material goodwill impairment, as companies with book value in excess of market capitalisation (in other words, MTB ratio of less than one) could indicate impaired carrying value of the goodwill. Therefore, this MTB ratio condition could increase the likelihood managers reporting material goodwill impairment, influencing the effects of goodwill impairment-related CAM disclosure. In order to mitigate this potential influence, I have collected the sample that have

Table 6. Accuracy Results of the Logistic Regression Model

Panel A. Matrix of Actual and Predicted Impairments			
		Actual IMP	
		IMP = 0	IMP=1
Predicted IMP	IMP=0	542	29
	IMP=1	8	19

Panel B. Sensitivity, Specificity and Accuracy		
Metrics	Calculation	Value
Sensitivity	$\frac{TP}{TP + FN}$	40%
Specificity	$\frac{TN}{TN + FP}$	99%
Accuracy	$\frac{TP + TN}{TP + TN + FP + FN}$	70%
Precision	$\frac{TP}{TP + FP}$	94%

Notes: Panel A shows the confusion matrix which classifies the correctly and incorrectly predicted IMP values by the logistic regression model (1). Panel B shows the frequently used metrics for classification, which are Sensitivity, Specificity, Accuracy and Precision. Panel B calculations are derived from the values in Panel A. TP (True Positive; 19) represents the number of actual IMP=1 observations that have been correctly predicted as IMP=1, whereas FP (False Positive; 8) represents the number of IMP=0 observations that have been incorrectly predicted as IMP=1. Likewise, TN (True Negative; 542) represents the number of actual IMP=0 observations that have been correctly predicted as IMP=0, whereas FN (False Negative; 29) represents the number of actual IMP=1 observations that have been incorrectly predicted as IMP=0.

been eliminated from the MTB ratio condition, which excludes the main sample used in the previous regression analysis. Then, the regression model (1) is repeated with this sample without the MTB ratio condition.

Table 7 shows the results of the regression analysis with unconditioned sample. Consistent with the primary analysis, CAM coefficient is positive and strongly significant, showing that the CAM disclosure affects the reporting of subsequent material goodwill impairment. Interestingly, the sample without MTB shows that the goodwill impairment is more significantly associated to CAM disclosure (with p-value < 0.001), further supporting my main hypothesis. Some control variables, such as going concern, number of segments, restatement and firm size, are found to be significantly associated with material goodwill impairment, which the main regression result

Table 7. Impairment Regression Analysis with Unconditioned Sample

Dependent Variable IMP = 1		
Variable	Coefficient	(z-stat)
<i>(Intercept)</i>	-2.853***	(-4.207)
CAM_GW	1.673***	(9.480)
<i>BIG4</i>	0.003	(0.011)
<i>FEE_RATIO</i>	-0.321	(-0.539)
<i>GC</i>	1.472***	(2.736)
<i>GW</i>	0.350	(0.602)
<i>LEV</i>	0.131	(0.338)
<i>MTB</i>	0.000	(-0.302)
<i>NCAM</i>	0.580***	(6.253)
<i>NSEG</i>	0.193***	(4.683)
<i>REST</i>	0.860***	(2.833)
<i>ROA</i>	-0.004**	(-2.120)
<i>SALES</i>	-0.002	(-0.200)
<i>SIZE</i>	-0.121***	(-2.751)
Fixed effects	Industry & Year	
N	4,059	
Pseudo R ²	0.281	
Area under ROC curve	0.840	

Notes: This table presents the results of the estimations of logistic regression model (1). The impairment regression model is run on sample without the condition of market-to-book ratio bigger than one in two consecutive years. The sample used in main analysis is excluded from this sample to avoid duplication. All variables are defined in the Appendix. Industry- and year-specific fixed effects are not reported for brevity. *, ** and *** indicate significance at 0.10, 0.05 and 0.01 levels, respectively (based on two-tailed tests). Bold text indicates variables of interest.

(Table 5) does not show. In summary, the effect of MTB condition does not influence the association between CAM disclosure and material goodwill impairment.

4.3.2. Concurrent Analysis

When the auditors disclose CAMs, they first must communicate the issues with audit committee. As the primary role of an audit committee is to protect the shareholder interests, the audit committee would ask more challenging questions to the management regarding the CAM issues on behalf of investors (Kang, 2019). From this and direct communication with the auditors, the management would be aware of the CAMs disclosed in the current annual financial report before the financial statement is issued to the public. To appease the audit committee and to avoid the costs arising from CAM disclosure, it is plausible that the management would recognise material goodwill impairment concurrently to the goodwill impairment-related CAM disclosure. After the material goodwill impairment is reported, the auditors may decide to not disclose the

Table 8. Concurrent Analysis with Conditioned Sample

Dependent Variable IMP = 1		
Variable	Coefficient	(z-stat)
<i>(Intercept)</i>	0.611	(0.286)
CAM_GW	1.099**	(2.045)
<i>BIG4</i>	-0.888	(-1.489)
<i>FEE_RATIO</i>	-1.353	(-0.751)
<i>GC</i>	0.957	(1.094)
<i>GW</i>	2.226	(0.912)
<i>LEV</i>	-0.297	(-0.757)
<i>MTB</i>	0.076	(1.185)
<i>NCAM</i>	0.341	(1.285)
<i>NSEG</i>	-0.101	(-0.874)
<i>REST</i>	0.892	(1.281)
<i>ROA</i>	-0.034*	(-1.957)
<i>SALES</i>	-1.780***	(-3.140)
<i>SIZE</i>	0.132	(1.158)
Fixed effects	Industry & Year	
N	598	
Pseudo R ²	0.461	
Area under ROC curve	0.917	

Notes: This table presents the results of the estimations of logistic regression model (2). The impairment regression model is run on the sample with condition of market-to-book ratio bigger than one in two consecutive years. The sample used in main analysis is excluded from this sample to avoid duplication. All variables are defined in the Appendix. Industry- and year-specific fixed effects are not reported for brevity. *, ** and *** indicate significance at 0.10, 0.05 and 0.01 levels, respectively (based on two-tailed tests). Bold text indicates variables of interest.

goodwill impairment-related CAM anymore in the concurrent financial statement if they determine that the reported goodwill impairment is sufficient. On the other hand, the auditors may still consider the reported material goodwill impairment as inadequate, thus keeping the goodwill impairment-related CAM in the concurrent financial statement.

To test for the concurrent analysis, the sample is constructed in the same process as the main sample selection, but with concurrent CAM disclosures instead of previous CAM disclosures. The regression model is similar to the model (1), but with concurrent CAM disclosure:

$$IMP_{it} = \beta_0 + \beta_1(CAM_GW_{it}) + \beta_x CONTROLS_{it} + IND_FE + YEAR_FE + \varepsilon_{it} \quad (2)$$

Table 8 shows the concurrent analysis of the sample with MTB condition, whereas Table 9 shows the same analysis of the sample without MTB condition. Both tables show that disclosure of goodwill impairment CAM is positively and significantly associated with the material goodwill impairment. Similar to the main regression analysis and the first robustness analysis, the sample

Table 9. Concurrent Analysis with Unconditioned Sample.

Dependent Variable IMP = 1		
Variable	Coefficient	(z-stat)
<i>(Intercept)</i>	-2.755***	(-4.027)
CAM_GW	1.911***	(10.709)
<i>BIG4</i>	0.116	(0.465)
<i>FEE_RATIO</i>	-0.233	(-0.391)
<i>GC</i>	1.359**	(2.513)
<i>GW</i>	-0.094	(-0.158)
<i>LEV</i>	0.121	(0.309)
<i>MTB</i>	0.000	(-0.452)
<i>NCAM</i>	0.408***	(4.309)
<i>NSEG</i>	0.193***	(4.643)
<i>REST</i>	0.835***	(2.730)
<i>ROA</i>	-0.004*	(-1.896)
<i>SALES</i>	-0.002	(-0.171)
<i>SIZE</i>	-0.117***	(-2.653)
Fixed effects	Industry & Year	
N	4,059	
Pseudo R ²	0.300	
Area under ROC curve	0.853	

Notes: This table presents the results of the estimations of logistic regression model (2). The impairment regression model is run on sample without the condition of market-to-book ratio bigger than one in two consecutive years. The sample used in main analysis is excluded from this sample to avoid duplication. All variables are defined in the Appendix. Industry- and year-specific fixed effects are not reported for brevity. *, ** and *** indicate significance at 0.10, 0.05 and 0.01 levels, respectively (based on two-tailed tests). Bold text indicates variables of interest.

without MTB condition has more significant regression coefficient than the sample with MTB condition. The results suggest that the auditors would still disclose the goodwill impairment-CAM, even after the managers have reported material goodwill impairment. However, this concurrent analysis needs to be further tested to understand how the disclosure behaviour of the auditor is changed with the managerial reporting level.

5. Conclusion

This thesis paper investigates whether the disclosure of goodwill impairment-related CAM would affect the reporting of material goodwill impairment in the subsequent year. From the regression analysis, I find that the goodwill impairment-related CAM disclosure is associated with an increase of reporting material goodwill impairment subsequently. From the robustness tests I have found that the managers would recognise material goodwill impairment concurrently with goodwill impairment-related CAM disclosure. Overall, results of this paper support the

expectation of the PCAOB that CAM disclosures would have positive influence on the managers' reporting behaviour. This contributes to the growing academic literature and the discussion with mixed opinions of the effects of CAM disclosure effects.

This paper is subject to several limitations. Firstly, the CAM implementation is still recent, and the sample data is still too little, only consisting of the two years. Therefore, the results of this paper cannot be interpreted as conclusive evidence that CAM disclosure would positively affect the managerial reporting behaviour. The readers of this thesis should interpret the results as initial influences of CAM disclosures on managerial reporting behaviour. With the CAM disclosures data from additional years, future researchers can investigate the effects of CAM disclosure in depth, by focusing on other specific CAM topics or further testing for the association between goodwill impairment-related CAM disclosure and material goodwill impairment recognition. Additionally, there may be omitted variables which could affect the goodwill impairment recognition. For instance, COVID-19 may influence the managers' recognition of goodwill impairment, as the managers tend to have more opportunistic behaviour during economic uncertainties (Chen, Liu, Liu, & Wang, 2022). Therefore, further research can re-examine the goodwill impairment-influencing variables for testing direct association between goodwill impairment-related CAM disclosure and material goodwill impairment reporting.

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Appendix I: Variable Definitions

<i>Variable</i>	<i>Definition</i>	<i>Source</i>
<i>IMPAIR</i>	An indicator variable equal to one if the company recorded a material goodwill impairment in the fiscal year (determined by goodwill impairment higher than 0.5% of revenue), and zero otherwise.	Compustat
<i>CAM_GW</i>	An indicator variable equal to one if a goodwill-impairment related issue was disclosed as a critical audit matter in the audit report, and zero otherwise.	Audit Analytics
<i>Big4</i>	An indicator variable equal to one if the company's auditor was a Big 4 auditor, and zero otherwise.	Audit Analytics
<i>FEE_RATIO</i>	Sum of non-audit fees divided by total audit fees paid in the current fiscal year.	Audit Analytics
<i>GC</i>	An indicator variable equal to one if the company has received a going-concern opinion in the current year, and zero otherwise.	Audit Analytics
<i>GW</i>	Value of goodwill over total asset.	Compustat
<i>IND_FE</i>	Indicator variable for each two-digit industrial codes on SIC, based on Fama-French 48 industries classification.	Compustat
<i>LEV</i>	Leverage of the year; calculated by total debt divided by total asset.	Compustat
<i>MTB</i>	Market-to-book ratio, calculated by share price (PRCC_F) multiplied by the number of outstanding common shares (CSHO) divided by the book value of common equity (CEQ).	Compustat
<i>NCAMs</i>	Total number of CAMs disclosed in the audit report.	Audit Analytics
<i>NSEG</i>	Total number of business segments.	Compustat
<i>REST</i>	An indicator variable equal to one if the company has received restatement in the prior year, and zero otherwise.	Audit Analytics
ΔROA	Change in return on total assets of current year (t) from prior year (t-1).	Compustat
$\Delta SALES$	Change in sales of current year (t) from prior year (t-1).	Compustat
<i>SIZE</i>	Natural log of total assets.	Compustat
<i>YEAR_FE</i>	Indicator variable for each COMPUSTAT fiscal year.	Compustat

Appendix II: CAM examples

The following examples have been extracted from the 10-K annual financial reports, which are available on the website of U.S. Securities and Exchange Commission.

Example 1: Starbucks Corporation (2019, pg. 84-85).

Goodwill - China Company-Operated Reporting Unit

Critical Audit Matter Description

We identified goodwill for the China company-operated reporting unit (“China”) as a critical audit matter. The Company’s evaluation of goodwill for impairment involves the comparison of the fair value of the reporting unit to its carrying value. The Company uses a discounted cash flow model to estimate the fair value of the reporting unit, which requires management to make subjective estimates and assumptions, particularly related to the forecast of future revenues.

The total goodwill balance of the International Segment was \$2,958.4 million as of September 29, 2019, of which the majority was allocated to China. The sensitivity of operating results in China to changes in market risk factors, such as economic conditions, regulatory environment, and competition, required the application of a high degree of auditor judgment and an increased extent of effort when performing audit procedures to evaluate the reasonableness of management’s estimates and assumptions related to the forecast of future revenues.

How the Critical Audit Matter Was Addressed in the Audit

Our principal audit procedures related to the Company’s forecast of future revenues used by management to estimate the fair value of China included the following, among others:

- We tested the effectiveness of controls over management’s goodwill impairment evaluation, including the controls related to management’s forecast of future revenues
- We evaluated management’s ability to accurately forecast future revenues by comparing actual results to management’s historical forecast
- We assessed the reasonableness of the forecast of future revenues by comparing the forecast to:
 - Historical revenues
 - Internal communications to management and the Board of Directors
 - Forecast information included in analyst and industry reports for the Company
 - Historical and forecast information included in macro-economic reports for the China market
 - Subsequent forecasts, to evaluate for changes made by management since the annual measurement date through issuance of the financial statements.

Auditor: Deloitte & Touche LLP

Example 2: Walt Disney Company (2020, pg. 73).

Goodwill – Interim Impairment Assessment for International Channels Reporting Unit

As described in Notes 2, 4 and 19 to the consolidated financial statements, the Company’s consolidated goodwill balance was \$77.7 billion as of October 3, 2020. Management tests goodwill for impairment on an annual basis, and if current events or circumstances require, on an interim basis. In the third quarter of fiscal 2020, management performed an impairment test of the International Channels’ goodwill. The carrying value of the International Channels exceeded the fair value and management recorded a non-cash impairment charge of \$3.1 billion to fully impair the International Channels reporting unit goodwill. The fair value was determined using a discounted cash flow analysis. The determination of fair value required management to make assumptions and estimates about how market participants would value the International Channels. The more sensitive inputs used in the discounted cash flow analysis include future revenue growth and projected margins as well as the discount rates used to calculate the present value of future cash flows.

The principal considerations for our determination that performing procedures relating to the goodwill interim impairment assessment of the International Channels reporting unit is a critical audit matter are the significant judgment required of management when determining the fair value of the International Channels reporting unit, which in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures to evaluate management’s significant assumptions related to future revenue growth, projected margins, and the discount rates used in the fair value measurement of the International Channels reporting unit. In addition, the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of

controls relating to management's goodwill interim impairment assessment, including controls over the valuation of the International Channels reporting unit. These procedures also included, among others, testing management's process for determining the fair value estimates, which included (i) evaluating the appropriateness of the discounted cash flow model; (ii) testing the completeness and accuracy of underlying data used in the model; and (iii) evaluating the significant assumptions used by management related to the future revenue growth, projected margins and discount rates. Evaluating management's assumptions related to future revenue growth and projected margins involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past performance of the reporting unit, (ii) the consistency with external market and industry data, and (iii) whether these assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's discount rates.

Auditor: PricewaterhouseCoopers LLP

Example 3: Revlon Inc. (2021, pg. F-2 – F-3).

Impairment of the goodwill of the Elizabeth Arden Fragrances, Mass Portfolio, and Professional Portfolio reporting units

As discussed in Notes 1 and 6 to the consolidated financial statements, the Company's goodwill balance as of December 31, 2020 was \$563.7 million. The Company performs goodwill impairment testing on an annual basis and whenever events or changes in circumstances indicate that the carrying value of a reporting unit more likely than not exceeds its fair value using a discounted cash flow model. As a result, the Company performed impairment testing of the Elizabeth Arden Fragrances, Mass Portfolio, and Professional Portfolio reporting units in the first, second, and fourth quarters, which resulted in \$99.8 million and \$11.2 million impairments in the first and second quarter, respectively, of the associated goodwill.

We identified the evaluation of the impairment of goodwill of the Elizabeth Arden Fragrances, Mass Portfolio, and Professional Portfolio reporting units as a critical audit matter. There was a high degree of subjective auditor judgment in evaluating the key assumptions used in the discounted cash flow models used to estimate the fair values of the Elizabeth Arden Fragrances, Mass Portfolio, and Professional Portfolio reporting units. Specifically, the key assumptions, including forecasted net sales, forecasted earnings before interest, taxes, depreciation and amortization (EBITDA) margins, and discount rates, involved a high degree of subjective auditor judgment as minor changes to those assumptions could have a significant effect on the Company's assessment of the carrying value of goodwill.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Company's goodwill impairment assessment process. These included controls related to the determination of the estimated fair value of the Elizabeth Arden Fragrances, Mass Portfolio, and Professional Portfolio reporting units and the development of the assumptions described above. We evaluated the Company's forecasted net sales and EBITDA margins used in the fair value analyses by comparing forecasted net sales and forecasted EBITDA margins to historical actual results and forecasted net sales growth rates and EBITDA margins of peer companies based on publicly available market data. We compared the Company's historical net sales and EBITDA margin forecasts to actual results to assess the Company's ability to accurately forecast. In addition, we involved valuation professionals with specialized skill and knowledge, who assisted in:

- assessing the appropriateness of the valuation methodologies through comparison to standard valuation practices
- evaluating the appropriateness of the selected guideline public companies by researching the companies and reviewing the business description
- evaluating the discount rates by comparing them to discount rate ranges that were independently developed using publicly available market data for comparable companies

Auditor: KPMG LLP