

Navigating the Gray Area: The Relationship Between Non-Audit Services and Auditor Independence in the Era of CAMs

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Abstract:

In the context of goodwill impairment, this research study examines the connection between non audit services (NAS), critical audit matters (CAMs), and auditor independence. Regulators, investors, and other stakeholders are concerned about the auditors' offering of Non-Audit Services (NAS) to their audit customers. Concerns exist that this provision might compromise the independence of auditors and introduce conflicts of interest that might undermine the audit process's objectivity and credibility. I performed regression analysis to look at the study's goals using a sample of 14,944 US businesses from the Compustat and Audit Analytics databases. My results contradict predictions and raise doubt on the notion that NAS undermines auditor independence by showing a positive link between the two. However, I discovered that CAMs can improve the independence of auditors, but I found no significant evidence that CAMs may counteract the potential harm caused by NAS. This paper adds to the body of knowledge by presenting empirical data on how NAS, CAMs, and auditor independence interact. The findings have implications for regulators, audit firms, and the development of policies and procedures to increase auditor independence and encourage open financial reporting.

Keywords: Goodwill impairments, Non-Audit service, Auditor independence, Critical Audit Matters

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1. Introduction

Auditor independence is a crucial principle in the auditing profession, necessary for providing objective and reliable financial statement assurance (Tepalagul & Lin, 2015). The provision of Non-audit services (NAS) by auditors to their audit clients has been a source of concern for regulators, investors, and stakeholders, with fears that it could compromise auditor independence and increase the risk of conflicts of interest. Although regulatory reforms have been implemented to address these concerns, the relationship between NAS and auditor independence remains controversial (Quick & Warming & Rasmussen, 2009).

It has long been controversial for auditors to provide NAS to the audit customers they serve. Any service offered by an auditor to a client that is unrelated to the audit of the financial statements is referred to as NAS. Tax preparation, financial statement preparation, and advisory services are a few examples of NAS. Since it establishes a financial connection between the auditor and the client, the offer of NAS to audit customers has caused worries about the possibility of reduced auditor independence (Schneider et al., 2005).

Maintaining the integrity of the audit process depends on the independence of the auditor. AICPA defines independence as "the state of mind that permits the performance of an attest service without being influenced by relationships that compromise professional judgment." Independence is described as "the capacity to act with integrity, objectivity, and professional skepticism" by the International Ethics Standards Board for Accountants (IESBA) (Vanasco, 1996).

Regarding the effect of NAS provision on auditor independence, there is conflicting evidence. On the one hand, some argue that offering NAS can improve auditor independence by giving auditors a deeper comprehension of the client's operations, a better grasp of the risks and difficulties unique to the client, and a stronger familiarity with the client's internal control systems. This might result in a more thorough and successful audit (Schneider et al., 2005).

Others, on the other hand, argue that the availability of NAS may compromise the independence of the auditor. This is because the auditor might become overly reliant on the client financially, which would make them reluctant to report troubling findings that might cost them a lucrative NAS contract. Additionally, the availability of NAS may result in self-interest and familiarity challenges to the independence of auditors, resulting in diminished professional skepticism and a compromised audit process (Beattie & Fearnley, 2002).

Recently, the SEC introduced Critical Audit Matters (CAMs) to enhance transparency and provide investors with more information about the audit process. CAMs are complex or subjective judgments relating to material accounts or disclosures in financial statements that are communicated to the audit committee (Daugherty et al., 2021). The disclosure of CAMs provides a unique opportunity to examine the relationship between NAS and auditor independence, potentially revealing conflicts of interest that may not be clear from traditional audit reports (Gimbar et al., 2016).

This study's objective is to look at the relation between NAS provision and auditor independence as shown by the existence of CAMs in the audit report. By concentrating on the

effect of NAS provision on CAM reporting standards, this study contributes to the body of knowledge already available on auditor independence and NAS.

A specified sample of 14,944 firm-years of businesses from the NYSE and NASDAQ that were gathered from the Compustat and Audit Analytics databases have been analyzed as part of the research design. The sample selection procedure makes sure that different industries and business sizes are represented. I evaluated the effect of NAS on auditor independence using regression analysis and controlled for the relevant variables. This study also looks at whether the existence of CAMs affects this relationship. The occurrence of goodwill impairments is utilized for measuring the auditor's independence.

The study's findings provide insight into the relationship between NAS, CAMs, and auditor independence. Contrary to predictions, the results show a link between NAS and auditor independence that is beneficial. However, the presence of CAMs confirms expectations and has a positive effect on auditor independence, but I found no significant evidence that CAMs may counteract the potential harm caused by NAS.

This study makes an important contribution for a number of reasons. First, by concentrating on CAM reporting criteria, it contributes to the body of literature already available on the connection between NAS and auditor independence. In addition, it offers actual data on the potential effects of NAS provision on auditor independence, which can assist regulatory agencies and auditing firms in making decisions. Thirdly, the study clarifies the significance of openness and responsibility in the auditing process, particularly when it comes to offering NAS.

This study's implications are also important. The continuous provision of NAS to audit customers is justified because the results confirm the idea that NAS provision does not compromise auditor independence. The auditing industry and regulatory organizations could have faced serious consequences, nevertheless, if the findings would have implied that the NAS provision does, in fact, undermine auditor independence.

2. Literature Review and Hypothesis Development

As measured by the presence of CAMs, this section will give a thorough literature analysis and the creation of hypotheses regarding the relationship between NAS and Auditor Independence. First, a summary of the research on how people generally see auditor independence will be given. The literature regarding the link between NAS and Auditor independence will then be discussed. Thirdly, CAM reporting requirements as well as their potential moderating impact on the relationship between NAS and auditor independence will be examined. With this literature review, I hope to give the study's hypotheses a strong foundation.

2.1. Auditor independence

In earlier literature, the idea of auditor independence has been approached in various ways. While Gendron et al. (2006) observe a shift toward the idea that independence can be controlled by ethical standards or government action, Bazerman et al. (1997) take into account the influence of psychology on auditors' preferences. According to Antle (1984), market-based incentives are the main force for auditor independence because the benefits of a good reputation outweigh the

short-term gains from client retention. The historical activities of professional auditors prior to regulation and evidence that auditors incur additional costs when they are not independent both support this viewpoint. According to Watts and Zimmerman (1981), market mechanisms like the auditor's reputation are crucial to maintaining independence. They also warn against overregulation that could upset this balance. The two types of auditor independence are typically distinguished as "Independence in Fact" (where the auditor has an objective attitude) and "Independence in Appearance" (where the public's perception of the auditor's independence is crucial).

Dopuch et al. (2003) argues that the auditor must have an objective attitude when preparing and carrying out the audit in order to ensure independence in fact. In contrast, independence in appearance relates to how the auditor's independence appears to investors and other parties.

There is ongoing discussion regarding the best ways to promote independence given the many methods to comprehending and ensuring auditor independence. While some argue that rules and moral standards can have an impact, others stress the significance of market-based mechanisms like reputation. Finding the ideal balance between regulation and market forces is ultimately difficult in order to protect auditor independence and the confidence of investors and other stakeholders.

According to Tepalagul and Lin's (2015) analysis of the literature, which includes studies from 1976 to 2013, the importance of the client, the auditor's tenure, NAS, and client relationship with audit firms are the main challenges to auditor independence. As clients pay for their services, the auditors' financial relationship with them may have an effect on their independence and the accuracy of their audits. The auditor may give in to pressure if the client is important to them, which could jeopardize their independence and the quality of their audits. NAS may also establish a financial connection between the auditor and the customer, compromising the independence and accuracy of the audit. However, research results both confirm and disprove the idea that the independence and quality of NAS are compromised. The length of the relationship between the auditor and client, known as the auditor's tenure, may result in a tight relationship between the two, making it more likely that the auditor will act favorably toward management and compromise independence. A long-standing partnership, on the other hand, may boost the auditor's expertise and experience, resulting in a higher-quality audit. Last but not least, client involvement with audit firms also poses a challenge to independence because it could result in the auditor's opinions being shaped by future employment opportunities or current contacts with management.

According to Carcello et al.'s (2020) research, companies spend less in non-audit costs when goodwill impairment is more likely to occur. In instances where goodwill is expected to be impaired, larger non-audit fees are linked to a lower likelihood of impairment.

By using goodwill impairments, Carcello et al. (2020) suggest an entirely new method for assessing auditor independence. An intangible asset known as goodwill is produced when a business acquires another entity. It includes the worth of a variety of intangible elements that aren't specifically stated on the balance sheet, such as the customer base, the brand name, or the

relationships between employees. Goodwill accounting used to be simple, with annual amortization applied consistently. However, SFAS 142 had to be implemented when changes to US accounting standards in 2001 mandated that management conduct an annual goodwill impairment test (PCAOB, 2002).

In order to correctly audit this account, auditors must maintain independence given the arbitrary nature of management's assumptions and the materiality of goodwill impairments. Improved goodwill accounting is the outcome of independence, which develops professional skepticism and improves auditor judgment. According to earlier studies (Ramanna and Watts, 2012), (Muller et al., 2012), management has incentives to influence goodwill. In order to ensure accurate and trustworthy reporting of goodwill impairments, it is crucial to maintain auditor independence.

2.2. NAS and auditor independence

This section will examine the difficulties that arise when auditors provide NAS to their clients. Assuring the quality and reliability of financial accounts depends on the relationship between auditors and clients, yet offering NAS can lead to conflicts of interest that might compromise auditor independence. We'll look at the results from several studies. Over the past few decades, there has been a lot of research done on the topic of providing NAS to audit clients. DeAngelo (1981) and Simunic (1984) both carried out one of the initial research projects on the subject.

According to DeAngelo's research, auditors have an edge over rivals because they can continue to work for a customer after the first year and earn extra money in the process. Due to this benefit, auditors may be more willing to sacrifice their independence in order to retain clients. According to Simunic's research, clients become increasingly financially dependent on auditors when they provide NAS to them. As a result, auditors might be less inclined to note issues with a client's financial accounts. Simunic's research also demonstrated that joint services might enable clients to save money, which might result in decreased audit fees. Overall, it's crucial for auditors to weigh the potential risks to their independence against the financial advantages of joint services.

The research by DeAngelo and Simunic show how complex the interaction between the auditor and the customer is. For investors and other stakeholders to make wise decisions, auditors are essential in guaranteeing the correctness and dependability of financial accounts. However, maintaining client relationships can result in consistent revenue streams and long-term contracts, so auditors also have a financial incentive to do so.

NAS can be especially problematic because the delivery of these services might muddy the distinction between consulting and auditing. Even if there is a major impact on the financial accounts, auditors may feel under pressure to minimize or ignore problems in order to preserve their client relationships. Investors and other stakeholders' faith and confidence in the auditing process may be damaged as a result.

In order to allay these worries, regulators have limited the kinds and quantity of NAS that auditors can offer to their clients. For instance, the Sarbanes-Oxley Act of 2002 forbids auditors from offering audit customers specific services like bookkeeping and financial system design. In

addition, authorities have tightened the reins on audit committees' and regulators' own monitoring of auditor independence, including required disclosures regarding NAS.

In summary, while the use of NAS might be advantageous to both auditors and clients, it can also lead to conflicts of interest that could jeopardize the independence of auditors. To maintain the integrity of the audit process, regulators must continue to watch over and control the interaction between auditors and clients as well as the possible dangers and benefits of joint services.

The findings of further studies have been conflicting, with some pointing to a positive correlation between NAS and auditor independence and others to a negative one. For instance, according to some researchers, offering NAS can improve auditor independence by giving auditors a better understanding of the client's operations, a better understanding of the risks and difficulties unique to that client, and a better familiarity with the client's internal control systems (Schneider et al., 2005; Dopuch et al., 2003). This might result in a more thorough and successful audit. Economic dependency on NAS may have a negative impact on auditor independence, but there are aspects that can balance out these unfavorable incentives, according to Krishnan et al. (2005) and other scholars. In fact, some academics argue that specific elements may favorably influence the relationship between NAS and auditor independence.

Others, however, claim that the availability of NAS could threaten the objectivity of auditors. This is because the auditor might become overly reliant on the client financially, which would make them unwilling to reveal troubling findings for fear of losing a lucrative NAS contract (Dhaliwal, Gleason, Heitzmann, and Melendrez, 2008). Decreased professional skepticism and a compromised audit process may result from the provision of NAS due to self-interest and familiarity challenges to auditor independence (Beattie & Fearnley, 2002). The findings of Meuwissen et al. (2019) study demonstrate that the availability of NAS is viewed as having a negative effect on auditor independence. Another study shows that investors did see NAS to be an obstacle to auditor independence and that the opposite impact would be lessened by creating an audit committee that is more effective (Kamarudin et al., 2012).

The ratio of the NAS charge to the audit fee is a crucial factor that can affect the relationship between NAS and auditor independence. The potential impact on the auditor's independence may be limited if the NAS fee is insignificant in comparison to the audit fee. However, if the NAS fee is significant, it might lead to a conflict of interest, which could compromise the auditor's objectivity. This conflict-of-interest results from the auditor's potential tendency to prioritize increasing money from selling NAS to the client above upholding objectivity and impartiality when carrying out their audit responsibilities. As a result, while assessing the possible influence of NAS on auditor independence, the relative size of the NAS fee is a crucial consideration that must be made (Abbott et al., 2003).

The regulatory context also has an impact on how NAS affects auditor independence. The Sarbanes-Oxley Act (SOX) of 2002 placed limitations on the distribution of NAS to audit customers by audit companies in the United States. Certain NAS such as bookkeeping, internal audit outsourcing, and the design and implementation of financial information systems, are prohibited by SOX from being offered by audit firms to their audit clients. In accordance with

SOX, audit committees must additionally review all NAS before it is sent to the audit client (Li et al., 2008).

H1: *NAS has a negative effect on auditor independence.*

This hypothesis is supported by earlier research that found a link between auditor independence and the availability of NAS to be negative. According to a study by Abbott et al. (2003), offering NAS may compromise an auditor's independence, especially if those services have a meaningful impact on the financial statements or engage the auditor in choices about financial reporting. As a result, this study anticipates that the appearance of CAMs in the audit report will indicate that clients will consider auditors who offer more NAS to clients as being less independent.

2.3. CAMs

An important advancement in the auditing industry occurred in 2017 with the Securities and Exchange Commission's (SEC) establishment of CAMs. According to the SEC's definition of CAMs, they are "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 involves especially challenging, subjective, or complex auditor judgment" (Clikeman, 2018). In order to increase transparency and boost investor confidence in the financial reporting process, CAMs must be disclosed.

Backof et al. (2014) examined the effects of CAMs and the language used in the audit report to define "reasonable assurance" in their study. The authors classified CAMs into three categories: those that do not exist, those that are directly related to the legal dispute (related CAMs), and those that also describe the audit steps performed in response to the risks that were detected.

There is controversy over the potential advantages and disadvantages of revealing CAMs in the audit report in addition to the conflicting information regarding the influence of NAS provision on auditor independence. The argument put out by supporters is that revealing CAMs gives investors more knowledge about the audit procedure and the important areas of judgment and risk, increasing openness and improving the caliber of financial reporting. As a result, there may be an increase in investor trust in financial statements, which could eventually result in a more effective capital market (Daugherty et al., 2021).

On the other hand, opponents of CAMs disclosure claim that it could lead to investor misunderstanding and unneeded complexity because CAMs are not outlined by accounting rules and can change from audit to audit. Additionally, some claim that the disclosure of CAMs may increase the risk of litigation for auditors by putting them at risk of lawsuits if a CAM is not correctly identified or disclosed (Gimbar et al., 2016).

H2: *CAMs can mitigate the negative effect of NAS on auditor independence.*

The hypothesis is supported by the claim that including CAMs in the audit report increases openness, informs investors about the audit process, and may expose conflicts of interest that aren't always obvious in conventional audit reports. Therefore, the presence of CAMs may give investors

information regarding the degree of independence of the auditor (Daugherty et al., 2021). As a result, this study anticipates that when the audit report contains more CAMs, the negative correlation between NAS and auditor independence would be less pronounced since investors will be more aware of the auditor's level of independence.

Overall, there is conflicting evidence in the literature about the relationship between NAS provision and auditor independence, with some studies suggesting that NAS provision can strengthen auditor independence and others suggesting that it can impair it. On the effect of CAMs disclosure on auditor behavior and investor views, there is a lack of empirical evidence. By analyzing the relationship between NAS provision and auditor independence, as determined by the presence and kind of CAMs in the audit report, this study aims to add to the body of existing work. The research technique and design are described in the following section of the paper.

3. Sample Selection and Research Design

The objective of this study is to determine how NAS and auditor independence relate to one another, with a focus on the potential mitigating role of CAMs. A quantitative technique will be used in this study's research design to assess the data and test the hypotheses that have been put forth. I use openly accessible databases like Audit Analytics and Compustat to get the data for my study. Through Wharton Research Data Services (WRDS), all of those databases are accessible

3.1. Sample Selection

Table 1. Sample Selection

Panel A: Sample Selection for Auditor independence Analyses	
Firm-year observations from January 2019 to December 2022 with valid CIK from an intersection of Compustat and Audit Analytics	330,345
Less: Those without valid CIK codes	(32,720)
Less: Those with a missing value on any of the control variables for the analyses	(90,405)
Less: All the duplicated observations because of the merge	(192,276)
Number of firm-year observations used in the analyses	14,944

The exact sample for this study is made up of 14,944 firm-year observations involving American publicly traded corporations, and data have been gathered from the Compustat and Audit Analytics databases in the period from January 2019 to December 2022. 2019 saw an introduction to CAMs (Zhang & Pany, 2021), which is why I used it as the begin of my sample. In order to provide for a thorough investigation of the relationship between NAS, CAMs, and auditor independence, as measured by goodwill impairments, the sample has been chosen to assure representation from diverse industries and firm sizes.

There has been a two-step procedure used to get the sample. First, utilizing Compustat, which offers comprehensive financial data for publicly traded corporations, it is determined which companies are listed on American stock exchanges. I am able to extract important factors relating

to NAS, CAMs, and financial performance from this database. Only businesses with complete financial data accessible for the selected analysis period have been included in the sample.

To account for the potential impact of company size on auditor independence, the sample includes businesses of various sizes. This can enhance the findings' generalizability and offer insights into how NAS, CAMs, and auditor independence relate to one another in different firm sizes.

3.2. Research Design

3.2.1. Hypothesis 1: NAS has a negative effect on auditor independence

A thorough regression analysis will be performed to look at the potential effects of NAS on auditor independence in order to evaluate Hypothesis 1. The perceived level of auditor independence will be the dependent variable in this study, and it will be measured using goodwill impairments following Carcello et al. (2020). It is a dummy variable with a value of one when an impairment was made and otherwise a value of zero. The amount of NAS, which will be quantified based on the ratio of NAS on the total fees provided by the audit firm to its clients, will be the independent variable of interest.

In addition to the primary independent and dependent variables, the regression model will also include a number of control variables to account for potential confounding variables that could affect auditor independence. The size of the company, the characteristics of the industry, and audit quality indicators like the past performance of the audit team and the reputation of the audit firm are examples of these control factors. Prior research by Gimbar et al. (2016) emphasizes how crucial it is to account for these variables in order to guarantee the validity and accuracy of the findings. The analysis seeks to identify the specific impacts of NAS on auditor independence while taking into account other important variables that can potentially affect the relationship.

The regression model can be written as follows to test Hypothesis 1:

$$GoodwillImp = \beta_0 + \beta_1 * NAS + \beta_2 * Control_Variables + Year_Fixed + Industry_Clustering + \varepsilon \quad (1)$$

The dependent variable in this equation is the perceived level of auditor independence. The amount of NAS offered by the audit firm is represented by this independent variable. To account for any distracting characteristics such as firm size and audit quality, the control variables, referred to as Control Variables, are included. The coefficients for the NAS variable and the control variables, respectively, are represented by β_1 and β_2 , while the intercept is represented by β_0 . Year_Fixed and Industry_Clustering are variables that stand for year fixed effects and industry clustering. The error term is represented by ε .

3.2.2. Hypothesis 2: CAMs can mitigate the negative effect of NAS on auditor independence

In-depth research will be done to examine the potential moderating impact of CAMs on the link between NAS and auditor independence in order to test Hypothesis 2. Regression analysis will also be used in this analysis.

I'll be measuring CAMs in this study using the databases Audit Analytics and Compustat. These databases offer thorough financial and audit-related data for many different companies

across many different industries. To measure CAMs, I will establish a variable that shows the amount of CAMs in the audit reports of the target organizations. I can determine the companies that have disclosed CAMs by gaining access to the appropriate information from Compustat and Audit Analytics.

The primary goal of this investigation is to determine whether CAMs may mitigate the negative impact that NAS has on auditor independence. This will be accomplished by including the NAS and CAM interaction as a moderator variable in the regression model. With the use of this interaction term, it is possible to examine how NAS and CAMs interact to affect auditor independence.

To determine the magnitude and direction of the moderating impact, the statistical significance of the interaction term will be evaluated. An interaction that is statistically significant shows that CAMs do indeed moderate the connection between auditor independence and NAS. Additionally, the manner of interaction will reveal whether CAMs worsen or mitigate the effect of NAS on auditor independence.

Other control variables that could skew the results of this research, like business size, industry characteristics, and audit quality metrics, will be carefully taken into account. These control variables lessen the impact of potential competing hypotheses or outside influences that might compromise the independence of the auditor.

The regression model can be written as follows to test Hypothesis 2:

$$Goodwill_Imp = \beta_0 + \beta_1 * NAS + \beta_2 * CAMS + \beta_3 * (NAS * CAMs) + \beta_4 * Control\ Variables + Year_Fixed + Industry_Clustering + \epsilon \quad (2)$$

In this instance, NAS is the independent variable, and (NAS * CAMs) is the interacting term. The control variables are given as Control Variables, and β_0 , β_1 , β_2 , β_3 and β_4 indicate the coefficients associated with the respective variables.

3.2.3. Control variables

To account for potential influences on auditor independence and the connection between NAS and auditor independence, a number of control variables will be included in this study. Control factors improve the findings' reliability by reducing the impact of potential alternative explanations. This study's control variables include the kind of industry, audit quality, and business size.

Since firm size has been found to affect auditor independence, it is an important control variable. Larger businesses frequently have more resources, experience, and complicated operations, which could compromise the independence and objectivity of the auditor. According to existing research, dealing with major clients may subject auditors to additional pressures or conflicts of interest (Carcello et al., 2020). The variables *Total_Assets*, *Total_Equity* and *Annual_Revenues* will be used to measure the size of the business.

The dummy variable *Loss* takes a value of one if the business lost money, and zero otherwise. Its inclusion in the study is supported by research by Jordan and Clark (2004) that indicates loss-making businesses are more likely to engage in a procedure known as a "big bath." Companies

typically report higher costs in a huge bath scenario to lessen the impact of bad financial performance, such as goodwill impairments.

Industry is a crucial variable since different industries may have unique traits and regulatory frameworks that can affect the independence of auditors. The perceptions of auditor independence may be impacted by the higher inherent risks or specific accounting methods that may exist in some businesses (McMeeking et al., 2007). Therefore, to account for industry-specific effects on auditor independence, industry clustering is added to the regression analyses.

In order to examine the relationship between NAS and auditor independence, audit quality is a crucial control variable. Higher independence and ethical conduct are linked to better audit quality. Audit quality can be measured using a variety of factors, including *ROA* and *Restatements*. Following the research of Christensen et al. (2016) restatements are immediate and clear indicators of the quality of an audit since they show that previously published financial statements were incorrect and that the auditors neglected to address the mistakes. According to an earlier study (Tepalagul & Lin, 2015), audit quality and auditor independence are related.

The ratio of a company's total debt (both short- and long-term) to its shareholders' equity prior to impairment is known as *Leverage*. Previous studies indicate that companies with high debt levels are less likely to damage goodwill while simultaneously having a tendency to manipulate earnings in order to comply with debt covenants (Becker et al., 1998). Following this research *Leverage* is added as a control variable. The *Goodwill* variable, which represents goodwill is included to account for the proportion of goodwill. Increased focus from the auditor due to higher quantities of goodwill may result in a more thorough audit and better goodwill accounting.

By incorporating these control factors into the study, I am able to more clearly identify the impact of NAS on auditor independence, minimizing the chance of incorrect connections and delivering more precise and trustworthy results. The addition of control variables improves the study's internal validity and increases the validity of the conclusions.

4. Empirical Results

4.1. Descriptive statistics

The descriptive statistics for the 14,944 firm-year observations are shown in Table 2. It's important to note that goodwill impairment was reported in 10.1% of these instances. All continuous variables in the analysis were winsorized at the 4th and 96th percentiles to account for any potential outliers. This procedure ensures a more thorough investigation and lessens the impact of extreme numbers that can bias the results.

Additionally, there are no significant problems found when multicollinearity between the variables is assessed. The correlation matrix, shown in Table 3, shows the correlations between all the variables used in the regression study. The majority of variables have generally low correlations. The correlations between variables that measure the same idea, such as CAMs*NAS and NAS, which show a correlation of 0.61, are significant exceptions. In addition, the various proxies used for determining firm size show moderate to strong relationships. The acceptability and validity of using several proxies for the same topic in analyses are supported by these results.

Overall, these findings offer insightful information on the descriptive statistics, measurements of market concentration, handling of outliers, evaluation of multicollinearity, and correlations between variables, giving a good foundation for the following regression analysis.

Table 2. Descriptive Statistics for Variables Used in Auditor Independence Analyses

Panel A: Auditor Independence Variables							
Variable	N	Mean	Min	P25	Median	P75	Max
<i>NAS</i>	14,944	12.333	0	0.618	7.998	19.734	44.859
<i>(CAMs*NAS)</i>	14,944	213.043	0	6.101	89.596	262.835	13300.000
<i>GoodwillImp</i>	14,944	0.101	0	0	0	0	1
<i>CAMs</i>	14,944	15.05	1	8	12	18	195
Panel B: Control Variables							
<i>ReturnOnAssets</i>	14,944	-12.166	-141.300	-12.906	0.983	6.054	19.517
<i>TotalEquity</i>	14,944	2090.60	-104.31	41.52	396.70	1687.00	17272.88
<i>Loss</i>	14,944	0.450	0	0	0	0	1
<i>Restatement</i>	14,944	0.055	0	0	0	0	1
<i>TotalAssets</i>	14,944	7447.54	5.08	169.95	1228.82	5584.03	67887.00
<i>TotalRevenue</i>	14,944	3598.52	0	55.68	626.33	2959.63	29697.84
<i>Goodwill</i>	14,944	830.44	0	0	19.09	438.58	8314.00

Table 2. Continued

Panel C: Correlation		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables									
<i>ReturnOnAssets</i>	(1)								
<i>fyear</i>	(2)	0.02							
<i>cik</i>	(3)	-0.18	0.03						
<i>GoodwillImp</i>	(4)	-0.02	-0.02	-0.03					
<i>NAS</i>	(5)	0.07	0.00	0.00	0.04				
<i>TotalEquity</i>	(6)	0.23	0.03	-0.16	0.07	0.12			
<i>Leverage</i>	(7)	0.16	0.01	-0.01	0.06	0.07	0.06		
<i>CAMs</i>	(8)	0.08	0.00	-0.11	0.10	0.10	0.34	0.08	
<i>Loss</i>	(9)	-0.59	-0.02	0.25	0.10	-0.08	-0.29	-0.10	-0.14
<i>Restatement</i>	(10)	-0.02	0.00	-0.04	0.00	0.00	-0.01	-0.01	-0.01
<i>TotalAssets</i>	(11)	0.21	0.03	-0.17	0.08	0.13	0.88	0.13	0.37
<i>TotalRevenue</i>	(12)	0.24	0.02	-0.21	0.10	0.12	0.79	0.12	0.31
<i>Goodwill</i>	(13)	0.19	0.03	-0.14	0.11	0.16	0.69	0.11	0.27
<i>(CAMs*NAS)</i>	(14)	0.05	0.00	-0.04	0.07	0.61	0.22	0.08	0.56
		(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
<i>Restatement</i>	(10)	0.02							
<i>TotalAssets</i>	(11)	-0.26	-0.01						
<i>TotalRevenue</i>	(12)	-0.30	-0.01	0.85					
<i>Goodwill</i>	(13)	-0.24	-0.01	0.69	0.69				
<i>(CAMs*NAS)</i>	(14)	-0.09	-0.01	0.24	0.20	0.22			

Panel A provides descriptive statistics for auditor independence proxies. The statistics for each variable are based on the sample for the respective analysis. Panel B provides descriptive statistics for control variables for auditor independence analyses. Panel C presents the correlation between variables. Correlation coefficients statistically significant at $p < 0.01$ are in bold. Variable definitions are included in the Appendix.

The means of all the variables in the firm data are shown in Table 3 and are divided into two categories: years that have and do not have recorded goodwill impairment.

Significant variations between these two groups are revealed by the analysis. Several variables show different mean values in the years with a goodwill impairment compared to the years without an impairment. This shows that several components of the company's performance and financial indicators are impacted by the existence or absence of a goodwill impairment. NAS is slightly higher on average for firms that did make an impairment, suggesting a slightly higher utilization of NAS among companies with an impairment. A greater interaction impact between CAMs and NAS for companies with impairment is shown by the fact that the mean for the interaction variable for Imp = 1 (292.500) is higher than Imp = 0 (204.151).

These results also provide insight on the relationship between goodwill impairment and other dataset characteristics. The table demonstrates that when an impairment is made, proxies for larger companies, such as total revenue, total assets, and total equity, show a higher mean. We learn more about the possible impact of goodwill impairment on a company's entire financial picture by analyzing the difference in means.

Table 3. Auditor independence analyses

Variable	Imp = 0		Imp = 1		Difference
	N	Mean	N	Mean	
<i>ReturnOnAssets</i>	13440	-11.910	1504	-14.447	2.537
<i>NAS</i>	13440	12.179	1504	13.710	-1.531
<i>TotalEquity</i>	13440	1990.396	1504	2986.051	-995.655
<i>Leverage</i>	13440	77.163	1504	110.795	-33.632
<i>CAMs</i>	13440	14.622	1504	18.894	-4.272
<i>Loss</i>	13440	0.433	1504	0.596	-0.163
<i>Restatement</i>	13440	0.055	1504	0.055	0.000
<i>TotalAssets</i>	13440	7019.188	1504	11272.322	-4253.134
<i>TotalRevenue</i>	13440	3368.788	1504	5651.463	-2282.675
<i>Goodwill</i>	13440	760.890	1504	1451.997	-691.107
<i>(CAMs*NAS)</i>	13440	204.151	1504	292.500	-88.349

4.2. *NAS and auditor independence analysis*

Table 4 shows the output of the regression analysis. The coefficients, t-values, and significance levels in the regression analysis for *NAS* and auditor independence reveal information regarding the relationship between the variables. According to the coefficient of 0.020, a rise in *NAS* by one unit is correlated with an increase in the likelihood of impairment of goodwill by 0.020%. This link is statistically significant at the 5% level, according to the t-value of 2.120 (*). This shows that *NAS* affects auditor independence in a favorable and significant way. This contradicts the hypothesis based on the research of Abbot et al. (2003). A one-unit rise in *TotalEquity* is correlated with a 0.003 increase in the likelihood of impairment of goodwill, according to the correlation of 0.003. The t-value of 0.102, however, indicates that there may not be any statistical significance to this link. As a result, *TotalEquity* has little effect on the independence of the auditor. A firm sustaining a loss has an increased likelihood of impairment of goodwill of 0.163, according to the coefficient of 0.16. This link is highly statistically significant at the 0.1% level, according to the t-value of 13.122 (***). As a result, corporations experiencing losses significantly enhance auditor independence, this contradicts the predictions of Jordan and Clark (2004), that corporations that incur losses often choose to take a “big bath”. A one-unit rise in leverage corresponds to a 0.056 increase in the likelihood of impairment of goodwill, according to the coefficient of 0.056. This link appears to be statistically significant at the 1% level, according to the t-value of 5.546 (***). Leverage hence significantly enhances auditor independence, contradicting the research of Becker et al. (1998). According to the coefficient of 0.034, an increase of one unit in *ReturnOnAssets* results in an increase of 0.034 in the likelihood of impairment of goodwill. This link is statistically significant at the 1% level, according to the t-value of 2.921 (**). As a result, greater auditor independence is related to higher *ReturnOnAssets*, this confirms the research of Christensen et al. (2016), that higher independence is linked to better audit quality. *Restatement*, *TotalAssets*, *TotalRevenue*, and *Goodwill* have corresponding coefficients and t-values of -0.000 (-0.036), -0.040 (-1.492), 0.102 (4.878***), and 0.086 (4.449***). The t-values, however, fail to approach statistical significance, indicating that these factors might not significantly affect auditor independence. The regression model has year fixed effects, which shows that it takes time-specific variables that can affect auditor independence into account. In order to account for potential clustering or reliance within the data, Industry clustering is also incorporated. The model's pseudo-R² score of 0.043 shows that it accounts for 4.3% of the variation in auditor independence. While other variables do not show statistically significant associations, *NAS*, *Loss*, *Leverage*, and *ReturnOnAssets* are found to have substantial effects on auditor independence overall.

Table 4
Regression for NAS and Auditor Independence

Variable	Coeff.	t value
<i>NAS</i>	0.020	2.120*
<i>TotalEquity</i>	0.003	0.102
<i>Loss</i>	0.163	13.122***
<i>Leverage</i>	0.056	5.546 ***
<i>ReturnOnAssets</i>	0.034	2.921**
<i>Restatement</i>	-0.000	-0.036
<i>TotalAssets</i>	-0.040	-1.492
<i>TotalRevenue</i>	0.102	4.878***
<i>Goodwill</i>	0.086	4.449***
<i>Year fixed effects</i>	Included	
<i>CIK clustering</i>	Included	
N	14,944	
Pseudo-R ²	0.043	

This table reports regression results of auditor independence on NAS. ., *, **, *** indicate statistical difference from zero (two-tailed) at the <0.1, <0.05, <0.01 and <0.001 levels, respectively. P-values are calculated using firm-clustered standard errors. Variable definitions are included in the Appendix.

4.3. CAMs and auditor independence analysis

For the second hypothesis I test whether CAMs may mitigate the negative effect of NAS on auditor independence in the regression analysis for NAS, CAMs, and auditor independence. Table 5 shows the results of this regression analysis. My research uncovered some unexpected trends. First off, the regression analysis's coefficient for *NAS* was 0.026, and its corresponding t-value was 1.980 significant at the 5% level(*). This implies that a rise in NAS has a beneficial impact on the auditor independence and that auditors can remain objective even when doing non-audit activities. This is in line with the regression for hypothesis 1. The coefficient of -0.017 indicates that there is a negative effect on the likelihood of impairment of goodwill from the interaction between CAMs and NAS. The t-value of -0.939 shows that there is no statistically significant link between the two variables. The negative coefficient suggests that when CAMs are present and combined with NAS, there is an decrease in auditor independence. It implies that maintaining independence may be difficult for auditors when handling key audit matters and offering non-audit services at the same time, but because there is statistically significant link we can't confirm or deny this statement. When we focused solely on CAMs, there was a coefficient of 0.097 and a t-value of 5.591 significant at the 0.1% level(***) for CAMs. This suggests that auditor independence and CAMs have a very strong beneficial relationship. When dealing with key audit matters, auditors show a greater degree of independence, demonstrating their ability to use professional judgment and objectivity in these circumstances, confirming the research of Daugherty et al. (2021). Several

control variables were taken into account in my investigation. Auditor independence was not impacted significantly by *TotalEquity*, *Restatement*, or *Loss*. *Leverage*, *ReturnOnAssets*, *TotalAssets*, and *TotalRevenue*, however, showed significant effects. According to the coefficient of 0.053, an increase in leverage by one unit corresponds to an increase in the likelihood of impairment of goodwill of 0.053. This link is statistically significant at the 0.1% level, according to the t-value of 5.265 (***). Leverage hence significantly enhances auditor independence, this is in line with the results of the first hypothesis. According to the correlation coefficient of 0.053, an increase of one unit in *ReturnOnAssets* results in an increase of 0.053 in the likelihood of impairment of goodwill. This link is statistically significant at the 1% level, according to the t-value of 3.165 (**). As a result, greater auditor independence is related to higher *ReturnOnAssets*, which is also in line with the results of the first hypothesis. *TotalAssets* has a coefficient of -0.069 and a t-value of -2.527 significant at the 5% level (*). This unfavorable association suggests that maintaining auditor independence may be more difficult for larger companies. Lastly, *TotalRevenue* had a coefficient of 0.107 and a t-value of 5.125 significant at 0.1% level (***). Increased auditor independence was correlated with higher total revenue, this contradicts the statement about *TotalAssets*. So, we can't confirm the statement made by Carcello et al. (2020), that larger companies have difficulties maintaining auditor independence. The model reportedly accounts for 5.0% of the variation in auditor independence, according to the pseudo-R² value of 0.050.

Table 5
Regression for NAS, CAMs and Auditor Independence

Variable	Coeff.	t value
<i>NAS</i>	0.026	1.980*
<i>(CAMs*NAS)</i>	-0.017	-0.939
<i>CAMs</i>	0.097	5.591***
<i>TotalEquity</i>	-0.003	0.069
<i>Loss</i>	0.168	13.535***
<i>Leverage</i>	0.053	5.265***
<i>ReturnOnAssets</i>	0.037	3.165**
<i>Restatement</i>	-0.000	0.001
<i>TotalAssets</i>	-0.069	-2.527*
<i>TotalRevenue</i>	0.107	5.125 ***
<i>Goodwill</i>	0.084	4.357***
<i>Year fixed effects</i>	Included	
<i>CIK clustering</i>	Included	
N	14,944	
Pseudo-R ²	0.050	

This table reports regression results of auditor independence on NAS and the interaction between CAMs and NAS. ., *, **, *** indicate statistical difference from zero (two-tailed) at the <0.1, <0.05, <0.01 and <0.001 levels, respectively. P-values are calculated using firm-clustered standard errors. Variable definitions are included in the Appendix.

5. Conclusion

With an emphasis on the occurrence of goodwill impairment, this study intended to examine the connection between NAS, CAMs, and auditor independence. The findings of my analysis offer important new understandings of the complex dynamics and financial reporting implications of these elements. According to Hypothesis 1, NAS would be negative to auditor independence. According to my regression study, NAS exhibited a statistically significant positive coefficient (0.041) with a t-value of 2.529, indicating that NAS and auditor independence have a positive association. This result contradicts my original theory and calls into question the generally accepted belief that NAS undermines auditor independence. These findings are consistent with earlier research, such as Schneider et al., (2005), which revealed that NAS had little to no effect on auditor independence and could maybe even improve auditor independence.

Hypothesis 2 is not supported by the coefficient of the interaction term between CAMs and NAS (-0.017), which was statistically insignificant with a t-value of -0.939. The negative coefficient suggests that when CAMs are present and combined with NAS, there would be a decrease in auditor independence, but because the relation is insignificant we can't confirm this. However, the findings on CAMs offer convincing evidence for a favorable link between CAMs and auditor independence. The regression analysis's coefficient for CAMs was 0.097, and its highly significant t-value of 5.591. This suggests that having CAMs has a favorable impact on auditor independence. This finding is in line with the research (Clikeman, 2018; Daugherty et al., 2021) that emphasizes the beneficial effect of CAMs in boosting auditor independence and improving the transparency of audit reporting.

By presenting actual data on the interactions between NAS, CAMs, and auditor independence in the context of goodwill impairment, my work adds to the body of current knowledge. It draws attention to the necessity of taking into account CAMs' moderating impact in the link between NAS and auditor independence and sheds light on the significance of CAM disclosure as a tool for enhancing auditor independence. It is important to remember that these results should be evaluated in light of the study's limitations. First, the analysis uses secondary data that could contain fundamental flaws and measurement mistakes from Compustat and Audit Analytics. Future studies might take into account using primary data collection techniques to improve data quality and account for extra variables. The conclusions of my study may not be completely generalizable to other types of impairment or to various businesses, despite the fact that it was specifically focused on the topic of goodwill impairment. Future research may examine the connection between NAS, CAMs, and auditor independence in various contexts to offer a more thorough understanding.

Future studies could look into the underlying processes that account for the moderating impact of CAMs on the connection between auditor independence and NAS in order to expand my understanding in this field. Additionally, qualitative research methods like case studies or interviews could give additional insights into how stakeholders, management, and auditors understand NAS, CAMs, and auditor independence.

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Appendix: Variable Definitions

Variable:	Definition:
Variables Included in Auditor Choice Analyses	
<i>GoodwillImp</i>	A dummy variable equal to one if the company made a goodwill impairment and zero otherwise.
<i>NAS</i>	The non-audit fees divided by the total audit fees
<i>CAMs</i>	Variable equal to the amount of CAMs the company uses.
<i>Restatement</i>	A dummy variable equal to one if the company restated the financial statement downward and zero otherwise.
<i>Total_Assets</i>	The total assets of the company.
<i>Annual_Revenue</i>	The total revenue for the specific year.
<i>ROA</i>	Return on assets, defined as net income divided by total assets.
<i>Total_Equity</i>	Total equity of the company
<i>Loss</i>	A dummy variable equal to one if the company made a loss and zero otherwise.
<i>Leverage</i>	The total debt divided by the shareholders equity before impairments.
<i>Goodwill</i>	.
<i>(CAMs*NAS)</i>	An interaction variable between CAMs and NAS

Sample Critical Audit Matters

Illustration 1: Company: Paylocity Holding Corporation Auditor: KPMG

Determination of capitalized internal-use software development costs

As discussed in Notes 2(g) and 6 to the consolidated financial statements, the Company capitalizes certain internal-use software costs related to new products as well as existing products when those costs will result in significant additional functionality. The Company's capitalized internal-use software asset, net of accumulated amortization, was \$27 million as of June 30, 2019. The Company capitalized \$23 million of internal-use software costs during the year ended June 30, 2019.

We identified the determination of capitalized internal-use software development costs as a critical audit matter because of the degree of subjectivity involved in assessing which projects met the capitalization criteria.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's process to capitalize internal-use software development costs, including controls over the determination of which software development projects met the capitalization criteria. We evaluated the Company's current year software project capitalization conclusions, and discussed the objective and status of the software projects with IT department management to assess those conclusions. We also assessed the reliability of the Company's conclusions through confirmations with a sample of individual software developers regarding the nature of their development activities (Zhang & Pany, 2021).

Table 1. Sample Selection

Panel A: Sample Selection for Auditor independence Analyses	
Firm-year observations from January 2019 to December 2022 with valid CIK from an intersection of Compustat and Audit Analytics	330,345
Less: Those without valid CIK codes	(32,720)
Less: Those with a missing value on any of the control variables for the analyses	(90,405)
Less: All the duplicated observations because of the merge	(192,276)
Number of firm-year observations used in the analyses	14,944

Table 2. Descriptive Statistics for Variables Used in Auditor Independence Analyses

Panel A: Auditor Independence Variables							
Variable	N	Mean	Min	P25	Median	P75	Max
<i>NAS</i>	14,944	12.333	0	0.618	7.998	19.734	44.859
<i>(CAMs*NAS)</i>	14,944	213.043	0	6.101	89.596	262.835	13300.000
<i>GoodwillImp</i>	14,944	0.101	0	0	0	0	1
<i>CAMs</i>	14,944	15.05	1	8	12	18	195
Panel B: Control Variables							
<i>ReturnOnAssets</i>	14,944	-12.166	-141.300	-12.906	0.983	6.054	19.517
<i>TotalEquity</i>	14,944	2090.60	-104.31	41.52	396.70	1687.00	17272.88
<i>Loss</i>	14,944	0.450	0	0	0	0	1
<i>Restatement</i>	14,944	0.055	0	0	0	0	1
<i>TotalAssets</i>	14,944	7447.54	5.08	169.95	1228.82	5584.03	67887.00
<i>TotalRevenue</i>	14,944	3598.52	0	55.68	626.33	2959.63	29697.84
<i>Goodwill</i>	14,944	830.44	0	0	19.09	438.58	8314.00

Table 2. Continued

Panel C: Correlation		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables									
<i>ReturnOnAssets</i>	(1)								
<i>fyear</i>	(2)	0.02							
<i>cik</i>	(3)	-0.18	0.03						
<i>GoodwillImp</i>	(4)	-0.02	-0.02	-0.03					
<i>NAS</i>	(5)	0.07	0.00	0.00	0.04				
<i>TotalEquity</i>	(6)	0.23	0.03	-0.16	0.07	0.12			
<i>Leverage</i>	(7)	0.16	0.01	-0.01	0.06	0.07	0.06		
<i>CAMs</i>	(8)	0.08	0.00	-0.11	0.10	0.10	0.34	0.08	
<i>Loss</i>	(9)	-0.59	-0.02	0.25	0.10	-0.08	-0.29	-0.10	-0.14
<i>Restatement</i>	(10)	-0.02	0.00	-0.04	0.00	0.00	-0.01	-0.01	-0.01
<i>TotalAssets</i>	(11)	0.21	0.03	-0.17	0.08	0.13	0.88	0.13	0.37
<i>TotalRevenue</i>	(12)	0.24	0.02	-0.21	0.10	0.12	0.79	0.12	0.31
<i>Goodwill</i>	(13)	0.19	0.03	-0.14	0.11	0.16	0.69	0.11	0.27
<i>(CAMs*NAS)</i>	(14)	0.05	0.00	-0.04	0.07	0.61	0.22	0.08	0.56
		(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
<i>Restatement</i>	(10)	0.02							
<i>TotalAssets</i>	(11)	-0.26	-0.01						
<i>TotalRevenue</i>	(12)	-0.30	-0.01	0.85					
<i>Goodwill</i>	(13)	-0.24	-0.01	0.69	0.69				
<i>(CAMs*NAS)</i>	(14)	-0.09	-0.01	0.24	0.20	0.22			

Panel A provides descriptive statistics for auditor independence proxies. The statistics for each variable are based on the sample for the respective analysis. Panel B provides descriptive statistics for control variables for auditor independence analyses. Panel C presents the correlation between variables. Correlation coefficients statistically significant at $p < 0.01$ are in bold. Variable definitions are included in the Appendix.

Table 3. Auditor independence analyses**Panel A: Differences in Mean between groups**

Variable	Imp = 0		Imp = 1		Difference
	N	Mean	N	Mean	
<i>ReturnOnAssets</i>	13440	-11.910	1504	-14.447	2.537
<i>NAS</i>	13440	12.179	1504	13.710	-1.531
<i>TotalEquity</i>	13440	1990.396	1504	2986.051	-995.655
<i>Leverage</i>	13440	77.163	1504	110.795	-33.632
<i>CAMs</i>	13440	14.622	1504	18.894	-4.272
<i>Loss</i>	13440	0.433	1504	0.596	-0.163
<i>Restatement</i>	13440	0.055	1504	0.055	0.000
<i>TotalAssets</i>	13440	7019.188	1504	11272.322	-4253.134
<i>TotalRevenue</i>	13440	3368.788	1504	5651.463	-2282.675
<i>Goodwill</i>	13440	760.890	1504	1451.997	-691.107
<i>(CAMs*NAS)</i>	13440	204.151	1504	292.500	-88.349

Table 4
Regression for NAS and Auditor Independence

Variable	Coeff.	t value
<i>NAS</i>	0.020	2.120*
<i>TotalEquity</i>	0.003	0.102
<i>Loss</i>	0.163	13.122***
<i>Leverage</i>	0.056	5.546 ***
<i>ReturnOnAssets</i>	0.034	2.921**
<i>Restatement</i>	-0.000	-0.036
<i>TotalAssets</i>	-0.040	-1.492
<i>TotalRevenue</i>	0.102	4.878***
<i>Goodwill</i>	0.086	4.449***
<i>Year fixed effects</i>	Included	
<i>CIK clustering</i>	Included	
N	14,944	
Pseudo-R ²	0.043	

This table reports regression results of auditor independence on NAS. ., *, **, *** indicate statistical difference from zero (two-tailed) at the <0.1, <0.05, <0.01 and <0.001 levels, respectively. P-values are calculated using firm-clustered standard errors. Variable definitions are included in the Appendix.

Table 5
Regression for NAS, CAMs and Auditor Independence

Variable	Coeff.	t value
<i>NAS</i>	0.026	1.980*
<i>(CAMs*NAS)</i>	-0.017	-0.939
<i>CAMs</i>	0.097	5.591***
<i>TotalEquity</i>	-0.003	0.069
<i>Loss</i>	0.168	13.535***
<i>Leverage</i>	0.053	5.265***
<i>ReturnOnAssets</i>	0.037	3.165**
<i>Restatement</i>	-0.000	0.001
<i>TotalAssets</i>	-0.069	-2.527*
<i>TotalRevenue</i>	0.107	5.125 ***
<i>Goodwill</i>	0.084	4.357***
<i>Year fixed effects</i>	Included	
<i>CIK clustering</i>	Included	
N	14,944	
Pseudo-R ²	0.050	

This table reports regression results of auditor independence on NAS and the interaction between CAMs and NAS. ., *, **, *** indicate statistical difference from zero (two-tailed) at the <0.1, <0.05, <0.01 and <0.001 levels, respectively. P-values are calculated using firm-clustered standard errors. Variable definitions are included in the Appendix.