Title: An Empirical Analysis of the Impact of KAM Disclosure Quantity and Quality on Earnings Management: Evidence from U.K Listed Companies

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بسِمِ اِللهِ الرحْمٰنِ الرحيم

Dedication

This thesis work is dedicated to the memory of my father (Hamdi Boutaine), who taught me how to work persistently for the things in which I aspired to prosper before he passed away, to my beloved mother (Kaddouria), to my wife Soumya and my daughters Bouthaina and Danya, who have been a constant source of encouragement and support during the challenges of life and graduate school. This work is also dedicated to my friends Dr Ernest Ezeani and Nabil Chentouf, who supported and motivated me throughout my studies. I am extremely grateful to have all of you in my life.

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Abstract

The agency theory asserts that timely disclosure of more high-quality information promotes greater transparency in corporate governance and reporting systems (Ribstein, 2005). This, in turn, reduces the degree of information asymmetry between top management (agent) and external stakeholders (principal), thereby limiting opportunities for managers to dishonestly manipulate financial statements.

Therefore, the aim of the current study is to empirically investigate whether the disclosure of key audit matters (KAM) in auditors' reports affects managers' reporting behaviour. More specifically, it uses a quantile regression method to analyse the relationship between earnings management (EM) and the quantity and quality of KAM disclosed by 201 non-financial firms which persistently listed on the U.K stock exchange FTSE350 from 2013 to 2018 with a total of 1206 observations.

EM is measured using the accrual-based approach and real earnings management. The KAM quantity is measured by the total number of KAMs disclosed in the auditing report while KAM quality is characterised by two variables which capture the specificity of accounting and entity-level risk factors. Account-level KAMs is represented by the total number of KAMs arising from accounting issues while entity-level KAMs, is measured by the total number of KAMs relating to firm-specific risk factors.

The results show that both KAMs' quantity and quality reduce managers' proclivity to misrepresent financial statements. This study found that disclosure of matters associated with entity-level risks favours the reduction of discretionary accruals than the revelation of accounting level audit matters at the percentiles from 0.15 to 0.50 and at the top of percentiles from 0.80 to 0.95. Also, it was found that account-level KAMs risk disclosures only influence the real activity earnings management and not accrual-based earnings management measurements. By contrast uncovering entity-level KAMs issues affects accruals-based EM but not real activity EM performance outcomes. In addition, it was discovered that most U.K firms' managers exhibit a preference for real activity earnings management than accruals-based EM to mispresent their earnings, presumably because of the lower possibility and consequences of getting caught, as real activity earnings management activities are harder to pursue and scrutinise for outsiders.

In general, the quantile regression results suggest that disclosing accounting and firm-level KAMs, significantly improve managerial financial reporting behaviour. This research will contribute to knowledge in various ways. Firstly, it will fill the gap and extend the literature on this subject, given that the study is novel by using quantile regression to analyse the impact of KAM disclosure on EM. Secondly, this is the first study that examines the impact of KAM quantity and quality on two different practices of EM, namely accruals and real-based activity EM.

Table of Contents

Table of Contents

List of Abbreviations

ACCA	Association of Chartered Certified Accountants
ACFO	Abnormal Level of Cash Flow from Operations
ADISX	Abnormal Level of Discretionary Expenditures
AEM	Accrual-Based Earnings Management
APB	Auditing Practices Board
APRODC	Abnormal Level of Production Cost
CEO	Chief Executive Officer
CFO	Cash from Operations
COGS	Cost of Goods Sold
CS	Classification Shifting
DACC	Discretionary Accruals
DJM	Modified Jones Model
EM	Earnings Management
FIFO	First-In, First-Out
FRC	Financial Reporting Council
FTSE	Financial Times Stock Exchange
GAAP	Generally Accepted Accounting Principles
GCC	Gulf Cooperation Council
IAASB	International Auditing and Assurance Standard Board
IFRS	International Financial Reporting Standards
IPOs	Initial Public Offerings
ISA	International Standards of Auditing
KAM	Key Audit Matters
LIFO	Last-In First-Out
LSE	London Stock Exchange
NAARS	National Automated Accounting Research
NDAC	Non-Discretionary Accruals
OLS	Ordinary Least Squares
PCA	Principal Component Analysis
PPE	Property, Plant and Equipment
R&D	Research And Development
REC	Receivables
REM	Real Earnings Management
REV	Revenue
RMDISX	Abnormal Level of Discretionary Expenditures
ROA	Return on Assets
SEOs	Seasoned Equity Offerings
SG&A	Selling, General, And Administrative Expenditures
SIC	Standard Industrial Classification
SIZE	Firm's Size

SOX	Sarbanes-Oxley Act
TA	Total Assets
TAC	Total Accruals
U.K	United Kingdom
US	United States of America

List of Tables

List of Figures

List of Charts

Chapter One: Introduction

1.1 Introduction

This introductory chapter starts by reviewing the research background in Section 1.2. Section 1.3 considers the institutional background. Section 1.4 discusses research focus and motivation. Section 1.5 summarises research contribution. Section 1.6 presents research aim and objectives. Section 1.7 explains research methods and Section 1.8 outlines research structures.

1.2 Research Background

In the last decades, the impact of capital markets' globalisation and trade internationalisation on the global economy caused changes in corporations, which have to face new constraints and challenges due to markets' high competitivity and volatility (Lopes, 2018). The aggressive competition and the constant evolution of markets encourage managers to exercise manipulation practices to influence accounting outcomes to better reflect their firms' financial situation so as to make the most of the investment opportunities available (Habib *et al.*, 2013). These practices are more commonly referred to as earnings management (EM). This occurs when managers of firms use their judgements and estimates to alter financial reports in order to either mislead some stakeholders about the underlying firm's economic performance or to influence contractual results that depend on reported accounting figures (Healy & Wahlen, 1998). Generally, this can be achieved by exploiting accounting standards' flexibility, modifying financial information, and / or even non-

compliance with accounting standards that should be followed by those involved in the preparation of annual company accounts (Lopes, 2018). Several studies (e.g., Al-Rassas & Kamardin, 2016; Hsu & Wen, 2015; Cordos *et al.*, 2015; Francis, 2011; Choi & Wong, 2007) have contributed to the understanding of the purpose, nature, and implication of EM, which could be accepted by means of accounting rules flexibility. One example of this is the process of generally accepted accounting principles (GAAP) that allows the adoption of accounting policies which enable management to delay or anticipate the results in a preferred manner, without breaching accounting rules (Beneish, 2001).

Managers have incentives (see Section 2.6) to manipulate earnings to maximise the firm's value and gain private interest. These motivations are generated by contracts in which rewards are clearly granted based on reported earnings (Becker *et al.*, 1998). Consequently, the incentive problem here can drive corporate management to provide asymmetrical or lower quality information, causing investment decisions to suffer. Various studies (e.g., Al-Rassas & Kamardin, 2016; Cordos *et al.*, 2015; Hsu & Wen, 2015; Tsipouridou & Spathis, 2012; Becker *et al.*, 1998) alerted risk behaviours and their incentives that drive management to abnormal attitudes by occasioning accounting fraud, this has effects not only for the potential investors and other stakeholders but also for the firm itself (Lopes, 2018). Thus, issues such as EM

should be examined carefully as they can affect the interested parties within a firm (Schipper, 1989).

Prior studies (e.g., Debbianita *et al.*, 2016; Chi *et al.*, 2011; Van Tendeloo & Vanstraelen, 2008; Cano, 2007; Vander Bauwhede *et al.*, 2003) attempted to capture the different aspects of EM by using a range of practices comprising accrual-based earnings management (AEM), real earnings management (REM) and classification shifting (CS) activities. For instance, firms that are practising AEM will adjust the level of discretionary accruals by increasing or decreasing income to achieve the desired level of earnings; these are often referred to as non-discretionary accruals (Li *et al.*, 2009). In contrast, firms engaging in REM will manage their results through deviations from normal business activities, either from financing activities or from investing and operating activities (Xu *et al.*, 2007). Then too, it is expected that firms practising EM through classification shifting CS will increase core earnings by classifying core expenses as discontinued operations or special items (Debbianita *et al.*, 2016).

The proposition underpins the above-mentioned EM practices that auditors are legally required to curb excessive managerial discretion in reporting information contained within accounting reports. Therefore, according to Cordos *et al.* (2015), the duty of the auditors is to reveal the opportunistic behaviour of managers and protect stakeholders' interests by including more information concerning the audit mission through their reports,

with the objective of enhancing audit communication. Correspondingly, Veronica and Bachtiar (2014) maintained that auditing is helpful in controlling managerial discretion by reducing information asymmetries that exist between firms' stakeholders and managers. According to Habbash and Alghamdi (2017), audit plays a crucial role in attesting that financial statement reporting is truly presented according to the accounting standards and reflects the firm's real operating outcomes and actual economic condition. Huguet & Gandia (2015) identified various studies (e.g., Niemi *et al.*, 2012; Minnis, 2011; Kim *et al.*, 2011; Dechow *et al.*, 2010; García-Osma *et al.*, 2005; Blackwell *et al.*, 1998) that have examined the connection between audit reporting quality and the misrepresentation of corporate earnings, and their findings indicated that EM limits the financial statement users' access to reliable accounting information. Hence, the auditor's monitoring activities can mitigate the agency problems stemming from management incentives.

However, the auditing process is a complicated one, wherein the financial statement users might need help comprehending what the audit process accomplishes, specifically because the content and form of the audit reports are standardised (Wooten, 2003). Furthermore, financial statement users do not read the entire auditing report for the reason that they are not clear about the purpose of the report and the level of assurance provided by the report (Gray *et al.*, 2011), which creates the phenomenon known as the communication gap between the auditors and the users of the financial report (Loew & Mollenhauer,

2019). Moreover, Humphry *et al.* (2009) pointed out that the auditors' report has been criticised because it needs to provide more information on audited clients' specific judgments, and also to be more useful, as it consists of general and standard technical terms about the work of auditors.

Due to the criticism of the standardised audit reports, the standard setters and the regulating bodies continuously attempt to enrich the auditors' reports, especially after the financial scandals and the global financial crises in 2008 that have damaged the trust in, and tarnished the public reputation of, the accounting profession (Cianci *et al.*, 2019). In reaction to the need for quality financial statements which inspire confidence and reassure financial information reliability, the International Auditing and Assurance Standard Board (IAASB) proposed amendments to auditing reports. One such modification was the requirement that auditors include Key Audit Matters (KAM) known as ISA701 and communicate these in a separate section in the independent auditors' report. The addition of KAM sections is to notify users of financial statements about specific risks and auditors' perceptions of audited clients (IAASB 2015). There were numerous observations on previous auditing reports that are boilerplate and need to provide a clear vision of the audited firms. The inclusion of KAM is believed to resolve the boilerplate problem that uses a "fail or pass" approach, as auditors have to give KAM justification, which represents the specific risk the client encountered during the auditing process (FRC, 2013). Furthermore, auditors have to explain how they will respond to

KAM, refer to related financial statements, and assume the responsibility for managing financial performance and detecting or preventing managers' misbehaviour through the auditing process. Such auditing regulations create an environment where auditors' exposure to reputation risks and litigation rises, encouraging auditors to avoid potential litigation and reputation costs by performing transparent and higher-quality audits.

This current study, for instance, suggests that the newly implemented KAM section may not only improve the intended transparency for users of financial statements but also will affect EM because it gives auditors an additional push to influence the financial reporting quality, and also enables auditors to act on behalf of the stakeholders as a substitute to control earnings manipulation (Han *et al.* 2011; Choi & Wong, 2007). Implementing KAM will increase the auditor's role; managers will have fewer possibilities for error and discretion than before to manipulate earnings (Bédard, 2017). This assumption provides the base with which to examine the impact of KAM implementation on EM practices. Thus, this study will empirically investigate whether, in fact, disclosure of KAMs can mitigate aggressive financial reporting behaviour. the theoretical predictions are motivated by findings from the literature on disclosure transparency and various theories (e.g., agency theory, legitimacy theory, stakeholders' theory, and institutional theory. This study predicts that, with the existence of KAMs in the audited report, managers expect their judgement to be thoroughly scrutinised by auditors and investors after

implementing KAMs. In addition, results from the disclosure transparency literature (Cassell *et al.*, 2015; Lee *et al.*, 2006; Hirst & Hopkins, 1998) indicate that greater transparency in accounting information reduces the likelihood of EM behaviour because market participants are more likely to detect it (Gold *et al.*, 2020).

The need for a transparent audited report is crucial for shareholders to understand the information disclosed in the financial statement for decision-making. However, the quantity and quality of information provided through KAM depends on several perceptible and imperceptible factors. It is likely that shareholders can observe the majority of factors influencing the quantity and quality of KAMs reported. According to DeAngelo (1981b), shareholders can be assured concerning the quality of an audit, as they can observe whether the auditing service is performed by a large (Big N), reputable, and technically capable audit firm that performs higher-quality audits. Shareholders can also observe auditor rotation, audit fees, and whether an auditor leads an audit engagement team with a specific industry specialisation capable of constraining managers' discretional behaviour (Krishnan, 2003). They can also observe the quantity and types of risks disclosed in the report, as well as the characteristics of corporate governance mechanisms that influence information disclosure and EM practices (Katmun, 2012; Riahi & Ben Arab, 2011). Therefore, this study will include various proxies of corporate governance and auditors'

characteristics as a control variable when assessing the impact of KAM on EM to control their effect.

To the researcher's best knowledge, no study has been conducted on the impact of KAM implementation on EM practices in the U.K. Studies so far have concentrated primarily on the impact of audit quality on EM in general (Lopes, 2018; Prawitt *et al.*, 2009; Van *et al.*, 2008; Chen *et al.*, 2005; Becker *et al.*, 1998), which leaves a gap regarding knowledge relating to the impact of the implemented KAM on EM. Therefore, a comprehensive study relating to KAM and EM in the U.K is needed to improve EM and audit quality research in this context. This research will add understanding to the existing accounting literature the nature of the relationship between KAM and EM. Precisely, this study will investigate the impact of implementing KAM on accruals-based and real activities EM in the U.K, where the environment of investor protection is strong and corporate governance is effective.

1.3 Institutional Background

At the turn of the 21st century, the accounting profession's credibility has been seriously damaged due to two major crises (Kitamura, 2017). The first was in 2001, after the eruption of financial scandals within well-known companies such as Enron and WorldCom. The Enron case was considered the largest audit failure in the history of the US. The second was in 2008 after the Global Financial Crises that was compared with a "once-in-a-century credit tsunami", a disaster in which the loss of confidence and trust played key

precipitating roles; these crucial factors will need to be restored as part of the recovery from this crisis (Earle, 2009). Since the Enron scandal incident, the US Congress cracked down hard on auditing firms because they had demonstrated an increasing inclination to abuse regulations and laws and provide assistance to their clients to issue a flattering financial statement (Sikka, 2008c). The unique problem it intended to address here was the impression that the auditing firms had become too convenient and lenient with their clients in assessing their financial statements. For example, in the year 2001 only, more than 270 important companies issued earnings restatements at a higher-level rate than ever before (Handley *et al.*, 2006). These events' enormity and their impact on deceived shareholders and the economy generated big headlines in the news and calls for stricter regulations. This again stresses the overwhelming importance of the socioeconomic effect of fraud and public controversy in prompting substantial regulative reform, since audit independence, the external auditors' role and audit quality have caused doubt and have been called into question (Bekiris and Doukakis 2011).

In an effort to re-establish the public confidence in the capital market, the financial scandals were followed by intensely discussed regulative reform known as the Sarbanes-Oxley Act (SOX), which was enacted on July 30, 2002. This was also identified as the Public Company Accounting Reform and Investor Protection Act that contained new requirements on disclosure of off-balance-sheet accounting. The Act imposed new rules and guidelines on auditor

independence in order to ensure and enhance audit quality to protect investors from fraudulent financial reporting by corporations. The reform aimed to improve corporate disclosure by expanding the gatekeeper function of external auditing firms and increasing the board's and top management's supervisory role (Taylor, 2006). Furthermore, the new regulation prohibited auditors from doing consulting work for their clients by separating accounting and consulting services (Brown, 2006). The SOX Act was an attempt to restore investors' trust in public companies' financial statements by reducing the frequency of major audit failures through stricter government regulation of the accounting profession (Tackett *et al.* 2004).

However, the enforcement of the comprehensive reform provoked an immediate cascade of criticism. It has been well recognised that the costs of the new regulation have been enormous. Brown (2006) argued that SOX was adopted in a rush, political convenience necessitating that something must be done before the election (2002) to reduce voters' backlash from WorldCom and Enron's collapses. Tackett *et al.* (2004) claimed that SOX fails to address the environmental causes of audit failures. Skeel (2005) expresses that SOX paid almost no attention to reducing the complexity of company structures. Camfferman & Wielhouwer (2019) claimed that the SOX Act's passage was an immediate response to a series of scandals of financial reporting. It was not the full response to challenge such significant incidents, as the new reform fall-out continued for many years and is, in effect, still working its way out.

Both the Enron financial scandal and the Sarbanes-Oxley Act were the foremost domestic incidents in the United States, but they reverberated throughout the rest of the world (Camfferman & Wielhouwer, 2019). The overseas impact of the SOX Act coincided with a variety of regulatory framework reforms in other countries. *Viz*., the European Union has introduced a system that aims to enhance employee protection, investors, and the public against mismanagement and fraud by increasing transparency and confidence in corporate governance. The European Commission issued the communication (COM/2003/286) reinforcing the statutory audit in the EU, which identified the requirement of using ISAs (International Standards on Auditing) for all EU statutory audits from 2005 onwards. Similarly, the U.K has established a new system for regulating the accountancy profession through the US Sarbanes Oxley Act and Accountancy Foundation (Dewing 2003). The U.K has reinforced its own governance regulations to tighten reporting requirements under both the Companies Act 2004 and Companies Act 2006. On May 6, 2004, the Auditing Practices Board (APB) in the U.K announced their intention to adopt the ISAs issued by the International Auditing and Assurance Standards Board (IAASB) which is the independent body that regulates international standards for audit; their ISAs were adopted by the Financial Reporting Council (FRC) with minor modifications. Subsequently, the FRC, which is responsible for the issuance of accounting standards in the U.K (FRC, Roles and Responsibilities, June 2017, p4), announced the adoption of ISAs issued by the

International Auditing and Assurance Standards Board (IAASB) in December 2004.

Previous legal environments, however, such as The European Union Council Directives (78/660/EEC, 83/349/EEC, 86/635/EEC and 91/674/EEC) and local standards did not work satisfactorily to guarantee a high level of transparency and comparability of reported financial performance. These directives, and local standards' failure, were the principal motivation for mandatory IFRS (International Financial Reporting Standards) adoption by many jurisdictions in many countries, including all listed companies in the European Union and the U.K (Mikova, 2014). The global implementation of IFRSs (including old and revised International Financial Reporting Standards) as one set of accounting standards is regarded as a solution for reaching high-quality financial reporting that calls for better transparency and comparability of cross border companies. Previous studies (e.g., Ball, 2006; Jermakowicz & Gornik- Tomaszewski, 2006; Christensen *et al.*, 2007; Horton *et al.*, 2010) showed, as results of mandatory IFRS adoption, enhanced financial reporting, transparency, and financial statement comparability. IFRS implementation represents a key milestone in the convergence process of financial reporting. The positive reaction of investors in European companies and their awareness of IFRS application's net convergence benefits include a decrease in information asymmetry, enhancement in information quality, and more strict enforcement of accounting standards and convergence (Armstrong *et al.*, 2010).

However, the transition to IFRS in many adopting jurisdictions was not directly linked to local accounting scandals (Camfferman, 2019).

Nevertheless, the main drivers for IFRS adoption were the creation of a single European capital market policy, along with the threat arising from US GAAP that might become the de facto global standard for European companies accessing international markets (Van Hulle, 2004). The changes to company law made the transition to IFRS more difficult, as a number of the regulations replace parts of the Companies Act, contributing to some complex reporting and disclosure requirements (Iasplus, 2013). In recent years, the IAASB has considered the problem of audit disclosures in financial statements, caused by several factors, which include developments in IFRS requirements, and the higher level of subjectivity and complexity implicated in the preparation of disclosed information in financial statements (ACCA, 2019). Furthermore, Hoogendoorn (2006) stated that many companies had underestimated the effect, costs and complexities of IFRS adoption. Rodriguez (2012) indicated that IFRS might affect audit independence and increase audit risk due to the transition complexity and the lack of IFRS knowledge by auditors and managers.

It is essential to note that, per endorsed IFRS under the IAS regulation, the IFRS is based on the assumption of true and fair view principles and substance over form values (FRC, 2014). In contrast, IFRS standards proved to be vulnerable during the Global Financial Crises and have been criticised, especially fair value, as many businesses took advantage of a lack of

transparency, uncertainty, and regulatory accounting gaps. Particularly, in terms of capturing financial instrument-related innovations, reported imposing outcomes without any real increase of value, it was necessary to consider an adjustment of the global standardisation process (Gorgan *et al.*, 2012). Conversely, Magnan (2009) claimed that the main issue with IFRS during the global financial crises was not the fair value model but rather the communication quality.

The deepening financial crisis has provoked worries and uncertainties regarding the accounting information integrity offered to the users of financial statements and posed some old and new questions about external audit practices. Under crisis circumstances, markets do not appear to have been assured by unqualified auditing opinions, as numerous financial institutions either had to be bailed out or collapsed within a brief time of receiving unqualified audit opinions (Sikka, 2009). The inclusion of some high-profile financial companies in the list of institutions that were forced into bankruptcy after receiving an unqualified audit report compelled the regulators to scrutinise the audit profession (IAASB, 2009; European Commission 2010; FRC, 2013). These incidents have awakened the suspicion that auditors lack the necessary expertise to provide an independent and objective account for corporate affairs. Consequently, the financial media and politicians were quick to underline deficiencies in the audit system, as auditors were unsuccessful in delivering reliable audited financial statements for firms with inherent weaknesses in their

financial health (Loew & Mollenhauer, 2019). The cause for this failure was reported to be a conflict of interest, lack of competition, low quality and inadequate purpose, weak regulation, and supervision (Coffee, 2019). According to an investigation conducted by the U.K House of Lords, this concentration resulted in the absence of competition as the "Big Four" auditing firms dominate the market, and they were "too few to fail" (Chai, 2015). Jones (2011) admitted that Non-Big-Four auditors had audited only one company listed in the FTSE 100 and only once every 48 years do companies change their auditor. Expressing concerns about the low audit quality under the global financial crises, a post global financial crises report, led by the U.K parliament, criticised auditors for the banking crisis and blamed them for forming an oligopoly to restrict new auditors to their audit sector.

In the matter of the confusion caused by auditors, the European Commission published a green paper on audit regulation reforms. The green paper emphasised considerable deficiencies in the European audit system during the financial crisis and has blamed auditors for issuing unqualified opinions for their clients despite knowing the serious intrinsic problems in some companies' financial health; also, it further suggests measures to improve auditing procedures (European Commission, 2010). The main issues raised in the Green Paper include audit market competition, regulatory oversight, the risk of having a small number of firms that are able to audit worldwide transnational corporations, innovative auditing practices, professional judgement and, not

least, social responsibility. In the report published by the Association of Chartered Certified Accountants (ACCA) in 2011 it was stated that, to satisfy stakeholders' needs, the audit should be expanded more efficiently whereby accountants and auditors' roles should be questioned.

There were always debates about amending the EU Directive on Statutory Audits since 2006 (2006/43/EC) to respond to the troubles. However, notable steps were taken by regulators to improve the quality of financial reporting in order to encourage better decision making. In response, numerous examples of what was thought could change the public's opinion about auditing and improve investor confidence in the audit profession include requiring auditors to disclose the fees charged for non-audit services, limiting auditors' non-auditing services (Frankel *et al.*, 2002), a mandatory rotation of the audit firm and audit partner (Barbara *et al.*, 2005; Lennox *et al.*, 2014), mandating that auditors sign their audit reports (Carcello & Li, 2013), and penalising auditors for failure (liability rules), among others. Gorgan (2012) admitted that there are still gaps and weaknesses in some financial information which have an adverse effect on the market's healthy functioning, shown by the big financial crisis and financial scandals.

These gaps in audit reports prompted a discussion between regulators and academics. This discussion addressed investors' concerns and their necessity for more information related to both audit and client firms (Mock *et al.*, 2013; Church *et al.*, 2008). Users of the financial statement also expressed

their interests concerning the significant risks that auditors encounter during an audit process, as well as the information related to accounts of the client, which involves uncertainty and estimations' risk (IAASB, 2012). Such significant information could be cooperatively disclosed in an audit report as key audit matters to allow users to receive the necessary information which helps them in their decision-making. In 2013, the IAASB introduced a completely new audit standard, entitled ISA 701, which required auditors to disclose the key audit matters (KAM). Such a requirement was the next stage to reassure users regarding the quality of auditing services and subsequent audit reports. The U.K Financial Reporting Council (FRC) was the first standard-setter in the EU to lead the way in this area by introducing and adopting the new audit reporting standards in the same year as its introduction.

The FRC has included additional requirements that are not presented in the IAASB standards. This includes audit materiality in situations where material uncertainty was associated with going concern (ACCA, 2018). The changes implemented by ISA 701 in the EU entered into force for periods ending on or after 15 December 2015 for the auditing of financial statements, but earlier adoption was also allowed (in the case of U.K & the Netherlands). The communication of KAMs is now compulsory for all listed companies in the EU. The U.K experience with the implementation of ISA 701 has been well received by auditors, resulting in simpler and more detailed audit reports (Asare & Wright, 2016).

1.4 Research Focus and Motivation

Financial reporting has been a subject of interminable academic disputes due to agency problems. Nonetheless, EM practices and information disclosure have received much more attention among scholars, regulators, practitioners, and investors, notably after the collapse of various large firms in the last decades due to underlying accounting profession deficiencies. To avoid corporate failures, managers' excessive involvement in EM must be restrained in order to increase the transparency of the company's financial reporting process. Firms are required to provide more accurate financial reports to shareholders as a result of reducing conflicts of interest between the two parties (agent and principal). Therefore, the need for integrating effective monitoring and controlling mechanisms in sort of information disclosure becomes necessary. Academics and regulators have responded to management misbehaviour and lack of transparency by improving corporate governance and information disclosure as monitoring tools. One of the important monitoring systems that regulators and investors could use is corporate disclosure. Its main objective is to minimise information asymmetry between investors and managers, which, in turn, reduces the agency problem (Huang & Zhang 2011). According to Rahman et al. (2013), one of the possibilities for controlling managers' opportunistic behaviour is setting more rigorous standards in the accounting field. This claim suggests that the introduced KAM standard may improve the behaviour of managerial financial reporting. Thus, there is a strong motivation to empirically investigate the effect of KAM on EM.

However, the impact of KAM on earnings mismanagement represents a fundamental area of research due to the potential implications for financial reporting quality and the reliability of audited financial statements. Understanding the impact of KAM on EM is crucial for several reasons.

Firstly, examining the relationship between KAM and EM can provide insights into the effectiveness of KAM reporting in mitigating the risks associated with financial misstatements. If KAM disclosure acts as a mechanism to detect and deter, it could enhance the overall quality of financial reporting and contribute to more reliable and informative financial statements.

Secondly, suppose the inclusion of KAM in auditor reports effectively highlights significant management judgment and estimation areas. In that case, it may act as a deterrent to EM by increasing scrutiny and transparency. On the other hand, the disclosure of KAM could provide opportunities for management to manipulate the reported financial information by strategically aligning their earnings manipulation practices with the disclosed KAM.

While the introduction of KAM was intended to enhance transparency and provide users of financial statements with more insights into the audit process, there is a recognised gap in the literature regarding the relationship between KAM reporting and EM. Previous studies have primarily focused on the determinants and consequences of EM, but they have yet to extensively explore the potential influence of KAM on this behaviour. However, this study is unaware of empirical evidence regarding the connection between KAMs reporting and EM practices. Besides, a review of EM literature discloses the

scarcity of research investigating EM in the U.K in the selected period. Studies so far have focused on the effect of audit quality in general on EM, such as Lopes (2018); Prawitt et al. (2009); Van et al. (2008); and Chen et al. (2005), and only a few researchers have studied the effect of KAM disclosure on the information content of expanded auditing report (Reid et al., 2019; Gutiérrez et al., 2018; Lennox et al., 2018; Boolaky & Quick, 2016), the impact of KAM disclosure on the investors' disposition to modify their investment decisions (Christensen et al., 2014) and the effect of KAM disclosure on the auditors' legal liability (Alderman, 2015; Brown et al., 2016; Gimbar et al., 2016; Brasel et al., 2016; Kachelmeier et al., 2018; Backof et al., 2018). Therefore, a comprehensive study that considers the previous studies' limitations is needed to improve EM and information disclosure literature in the U.K context.

The regulatory motivation behind studying the impact of KAM on EM stems from the necessity to weigh the effectiveness of KAM reporting in detecting and deterring manipulative practices that can alter reported earnings. Regulators play a critical role in enforcing and establishing standards that regulate financial reporting practices and the auditing profession. They have been actively seeking ways to enhance financial reporting transparency, improve the reliability of financial statements, and strengthen audit quality. Therefore, understanding the relationship between KAM and EM is of significant interest to regulatory bodies. By investigating the impact of KAM on EM, regulators can evaluate the effectiveness of this regulatory intervention in curbing manipulative behaviour in the U.K listed companies. If KAM

reporting proves to be an effective deterrent, it would validate the regulatory decision to implement KAM and reinforce its significance in promoting transparency and integrity in financial reporting.

Furthermore, understanding the impact of KAM on EM can inform regulatory bodies in their ongoing efforts to develop and refine auditing standards. If empirical evidence suggests that KAM disclosure has limited effectiveness in mitigating EM practices, it may prompt regulators to revisit and enhance the requirements surrounding KAM reporting. This could involve providing more specific guidance on the identification and disclosure of KAM or considering additional measures to strengthen the reliability and usefulness of KAM information, exclusively in the U.K context, which was the first country to adopt KAMs, as the Financial Reporting Council (FRC) decided to adopt the standards early in 2013. As both the standard-setter and audit oversight body for listed company auditors in the U.K, the FRC provided the right balance of encouragement to, and regulation of, auditors. It is, therefore, timely to investigate the association between KAM implementation and EM in the U.K and contrast them with the experience of other countries.

The theoretical motivation behind studying the impact of KAM on EM lies in exploring the underlying mechanisms and theoretical frameworks that can help explain the connection between these two constructs. Several theoretical perspectives can provide insights into this relationship, including institutional theory, agency theory, stakeholder theory and legitimacy theory. The use of multiple theories in this research is justified as it promotes a

comprehensive understanding, strengthens validity, mitigates bias, bridges gaps between disciplines accommodates complexity, generates new hypotheses, and enhances methodological flexibility. By embracing multiple theoretical perspectives, researchers can approach research questions from various angles, leading to richer insights and advancing knowledge in their respective fields. Brandell (2008) advocates that using multiple theoretical perspectives would clarify, connect, and convey research results.

For example, agency theory emphasises the relationship between shareholders as principals and management as agents and the potential conflicts of interest that arise between them. In this context, implementing the KAM section in auditor reports can be seen as a mechanism to reduce information asymmetry between principals and agents. By disclosing the areas of significant management judgment, KAM reporting provides shareholders and other stakeholders with valuable and timely information to assess the reliability of reported earnings. This improved transparency can potentially mitigate the agency problem, which, in turn, should limit managerial flexibility in accounting estimates and reduce the incentive for management to engage in EM practices.

In contrast, institutional theory suggests that organisations, including companies and auditors, are influenced by external pressures to conform to societal norms, expectations, and regulations. In the context of KAM and earnings management, the inclusion of KAM in auditor reports represents an institutionalised practice that enhances transparency and accountability.

Therefore, the provision of a KAM section incentivises auditors to review firms' management activities more thoroughly to maintain their reputation and reduce their liability to lawsuits by investors and other users of accounting statements (Pinto & Morais, 2019). By highlighting areas of significant management judgment and estimation, KAM reporting can increase the salience of these matters, making it more difficult for companies to engage in EM without attracting attention and potential scrutiny.

Besides, the legitimacy theory suggests that corporations comply with the norms and bounds, such as accounting standards and disclosure requirements (e.g., ISA701) to fulfil the organisation's social contract in an attempt to achieve legitimacy, which, in turn, will evoke a more critical and thorough evaluation of managers' accounting choices and practices. Finally, stakeholder's theory predicts that the inclusion of the KAM section in the audited report would contribute to reducing all major sources of expectation gap and information asymmetry between stakeholders and corporate management. Thus, stakeholders would be better informed about corporate management activities, which, in turn, will limit managerial discretion (Fuller, 2015).

Overall, the empirical, regulatory, and theoretical motivations for studying the impact of KAM on EM stem from the need to fill the existing gap in the literature, understand the potential implications for financial reporting quality and inform regulatory and standard-setting bodies about the effectiveness of KAM in mitigating EM practices. By examining this relationship, researchers can contribute to the ongoing discussions surrounding

auditor reporting and its role in promoting transparency and integrity in financial reporting. Furthermore, studying the impact of KAM on EM can help regulators and standard setters evaluate the effectiveness of current audit practices and identify areas for improvement. If KAM reporting is found to have limited effectiveness in curbing EM, it may necessitate additional measures or modifications to the existing auditing standards to tackle this concern.

1.5 Research Contribution

The current study contributes to the accounting literature in multiple dimensions, including theoretical, methodological, and empirical aspects. By examining these contributions, the accounting literature can gain a comprehensive understanding of the significance and novelty of this research. The findings offer important insights regarding the connection between key audit matters (KAM) disclosure and earnings management (EM) proxies, showing the importance of reporting KAM as red flags signalling accounting information manipulation. The study's results contribute to the U.K and other countries' literature as this accounting standard has been internationally adopted, considering that the standard addressed here is recent and empirical research is still incipient (Marques & Souza, 2017). In addition, the results obtained from this study will have implications for the debate concerning the disclosure topic, particularly auditors', regulators', and accountants' practices. The study's main contributions, however, are grouped into the following:

Theoretical Contribution:

The theoretical contribution of this study lies in its ability to go beyond existing theories used in the KAM-EM literature. Integrating several theoretical perspectives into the present study adds new insights to the area. It provides greater viewpoints into the role of auditors to reduce the scope of opportunistic behaviour and information asymmetries between the agents and principals to boost the quality of financial reporting. For example, the study can explore theoretical frameworks such as institutional theory, agency theory, stakeholder theory and legitimacy theory to comprehensively understand the relationship between KAM and EM. This theoretical contribution enhances the understanding of the underlying mechanisms and motivations behind the impact of KAM on EM practices.

Methodological Contribution:

The methodological contribution of this study is crucial for advancing the research in this field. It involves the development and implementation of robust methodologies for measuring and analysing the impact of KAM on EM. For instance, this is the first research to identify and classify 37 KAMs that influence the performance of firms in the U.K. The current study can introduce innovative methods for quantifying the quantity and quality of KAM disclosure, as well as for identifying and measuring EM practices. These methodological advancements contribute to the research community by providing new tools and techniques for investigating the complex relationship between KAM and EM. Besides, this study is one of the first examinations to document and analyse the

impact of KAM quantity and quality on two different measurements of EM, namely (i) accruals and (ii) real activity EM practices in the U.K companies using quantile regression.

Empirical Contribution:

The empirical contribution of this study lies in its ability to provide real-world evidence and insights regarding the connection between key audit matters (KAM) disclosure and earnings management (EM) practices. The study can generate empirical evidence that validates or challenges existing theories and hypotheses by conducting empirical analyses on a specific sample or dataset. This empirical contribution contributes to the broader understanding of the impact of KAM on earnings management behaviour. However, after reviewing the literature, it was observed that no previous study had been empirically conducted on KAM and EM indicators such as accrual-based and real activity earnings management for the sample of FTSE350 from 2013 to 2018. Unlike other studies (e.g., Reid et al., 2019; Asbahr & Ruhnke, 2019; Bentley et al. 2018; Klueber et al. 2018; Almulla & Bradbury, 2018; Bédard et al., 2018; Gutierrez et al., 2018; Li et al., 2018) who have tested the relationship between KAM and financial reporting quality using abnormal accruals. Consequently, this is the first study that examines the interactions between EM and disclosed KAMs in the audit report produced by the "Big-four" audit firms, compared to "non-Big Four" and auditor's industry expertise in the U.K. Additionally, this is the first study to assess whether the quantity and the quality of disclosed

KAM impacts most on (i) accruals or (ii) real activity EM in the U.K companies. Furthermore, this is the first study (so far) that considers several corporate governance mechanisms in the study model when examining the connection between EM and KAM disclosure. Moreover, this is the first study to examine EM practices in the U.K during the selected period. Finally, this is the first study to assess which type of KAMs disclosed in the auditing report impact most on (i) accruals and (ii) real activity EM in the U.K companies. This empirical contribution enhances the knowledge of the practical implications of KAM reporting and its influence on financial reporting quality.

In summary, the impact of KAM on EM makes theoretical, methodological, and empirical contributions to the accounting literature. The theoretical contribution extends beyond existing theories, the methodological contribution introduces innovative measurement of KAM quality and quantity and analysis techniques, and the empirical contribution provides insights and real-world evidence. By considering these contributions, this research enriches the understanding of the relationship between KAM and EM, offering valuable implications for auditors, regulators, and practitioners in the accounting field. The results obtained from this study will have implications for the debate concerning the disclosure topic, particularly auditors', regulators', and accountants' practices.

1.6 Research Aim and Objectives

The primary question to be addressed in this research is: **Do the disclosure of key audit matters in auditors' reports affects managers' reporting behaviour in the U.K listed companies?**

To answer this question, this study formulated the following empirical objectives:

- To investigate and compare the magnitude of earnings management practices measured in terms of accrual-based EM (AEM) and real activity EM (REM) in the U.K companies.
- To examine and compare the magnitude and quality of KAMs reported by the U.K companies.
- To assess the strength of the relationship between the quantity and quality of the disclosed KAMs and earnings management practices in the U.K companies.
- To investigate and compare which of the two types of EM is most affected by the disclosed KAMs in the U.K companies.

1.7 Research Methods

This section offers a brief summary of the study methods used in this research. However, a thorough explanation of the methods is given in Chapter 5, as well as justification for the research methodology and methods chosen. This study uses the quantile regression method as a quantitative approach to empirically examine the connection between key audit matters and earnings management practices. Thomson Reuters EIKON and Osiris databases were

used as primary sources from which to collect EM data during the fiscal years from 2013 to 2018 for a final sample of 201 firms listed in the FTSE350 index, with a total of 1206 observations. Considering the first objective that aims to investigate earnings management in U.K companies, this study uses two EM practices, namely, accrual-based earnings, real activity earnings. For the proxy of accrual-based earnings, this study adopts the john modified model (1995), which is a more sophisticated model that attempts to separate total accruals into nondiscretionary and discretionary elements (see, for example, Kothari *et al.*, 2005; Kasznik, 1999; Jones, 1991, among others). For the proxy of real activities manipulation, however, this study adopts the measures that have been widely employed by prior studies (e.g., Farooqi *et al.*, 2014; Kim & Park, 2014; Zang, 2012; Kang & Kim, 2012; Gunny, 2010; Cohen & Zarowin, 2010; Cohen *et al.*, 2008). These studies have followed Roychowdhury's (2006) model, which constructed three measures of real activities manipulation, including abnormal cash flows from operations, abnormal production costs and abnormal discretionary expenses. Therefore, this study will use abnormal cash flows, abnormal production costs, and abnormal discretionary expenses to proxy real activity manipulation. The study has also used descriptive analysis and univariate analysis based on t-test to ascertain whether the direction and the level of the two practices of EM differ from zero.

In addition, the current study has used quantitative analysis to obtain and analyse over 1206 audit reports to address the second objective. Following

prior research (e.g., ACCA, 2018), each report was processed independently to gather the number of KAMs, type of KAMs, change in the number of KAMs, audit firm, auditor switch, business sector and audit report date. The KAMs in each report were coded and classified loosely based upon the methodology used by the U.K Financial Reporting Council in its reporting on the implementation of KAMs in the U.K. Regarding KAMs, the total numbers and type of KAMs disclosed in the audited report each year have been used as the primary measurement of KAM.

1.8 Research Structure

This thesis is outlined as follows:

Chapter 1 introduces the study background, including institutional background, research focus, research motivation and contribution, research aims and objectives and research methods.

Chapter 2 reviews the various definitions and concepts of earnings management. It outlines the approaches, techniques, and types of earnings management, as well as their measurements proposed by previous studies. Furthermore, this chapter provides a comprehensive review of the empirical literature on earnings management, with particular emphasis on U.K. firms. It also discusses earnings management incentives.

Chapter 3 discusses the key aspects of key audit matters (KAM) disclosure. It covers the definition of KAM, its concept, and dimensions. Additionally, it outlines the association between earnings management (EM)

and reported KAMs. The chapter also provides a review of empirical research on KAM. It concludes by highlighting the gap in the existing literature, thereby showcasing the contributions of the current study.

Chapter 4 is dedicated to presenting the theoretical framework that forms the basis of this study. It also focuses on developing hypotheses that have emerged in the literature to explain the relationship between earnings management, key audit matters, and selected control variables. The chapter further includes corresponding predictions by drawing upon various theories.

Chapter 5 justifies the authenticity of the dataset, explains the sampling distribution, and provides details on the calculations and classification of the earnings management metrics and KAMs that underpin this research. Additionally, it describes the major aspects of the research methodology adopted in this study, including the regression model used to examine the relationship between the earnings management output variables and independent variables, which include measures for KAM quantity and quality indicators, as well as the choice of control variables. Furthermore, it discusses the approaches used to validate the dataset and sample distribution, along with the underlying trends in the main variables of interest. The chapter also outlines the data analysis procedures and addresses econometric issues to ensure consistent correlation coefficients.

Chapter 6 discusses the empirical results. It starts with descriptive statistics and pairwise correlation matrix. Next, it shows the empirical results of quantile regression involving the accrual earnings management as the dependent variable, and KAM quantity and quality measurements as independent variables of interest with a selection of firm and industry characteristics as control variables.

Chapter 7 reports the results of tests to check the robustness of the definition of earnings management. In this analysis, the variable for accrual-based EM proxied by the discretionary accruals is replaced with the real-based activities as an alternative to measure earnings management. The goal is to validate the results from the initial regression analysis to confirm that the impact of KAM measurements remains unchanged when redefining the study accounting malpractice metric.

Finally, **Chapter 8** concludes with remarks on the prominent outcomes of the study with related policies for enhancing the effectiveness of KAM as a strategic tool for managing accounting malpractices. In addition, it highlights the research limitations and areas for future research in the field of auditing and accounting practices.

Chapter Two: Literature Review on Earnings Management

2.1 Introduction

One of the main problems investors face with the quality of the accounting system is earnings management (EM). Managers might take advantage of information asymmetry and accounting standards' flexibility to manipulate accounting numbers to gain private benefit at the expense of other stakeholders (Healy & Wahlen 1999). Therefore, this chapter aims to review the literature to enhance the understanding of the EM practices of publicly listed companies.

The remainder of the chapter is structured as follows: Section 2.2 reviews the various EM definitions and its concept. Section 2.3 outlines EM Approaches. Section 2.4 represents EM techniques. Section 2.5 discusses the Key determinants of EM. Section 2.6 summarises prior empirical literature on EM. Section 2.7 provides EM types and their measurements. Section 2.8 discusses EM incentives, and Section 2.9 summarises the chapter.

2.2 Earnings Management Concept and Definition

2.2.1 Earnings Management Concept

One of the controversial behavioural models is the management decision to control accounting information in which the parties involved in economic unity are interested. These decisions might have a negative or positive impact on net profits, which may be regarded as accounting information manipulation as long as it serves the interests of economic unity.

Management behaviour can either decrease income to reduce taxation, increase revenue to maximise board members' remuneration, or decrease/increase income if it is high/low to alter the results (Jabbar, 2018). Nevertheless, there is a difference in the management motives; one of the previous trends is the income effect behaviour, known as earnings management.

2.2.2 Earnings Management Definition

There are different definitions of earnings management. For example, one of the most quoted definitions of EM is Healy & Wahlen's (1998) definition. They stated that EM occurs when managers of firms use their judgements in financial reporting to alter financial reports to either influence contractual results that depend on reported accounting figures or to mislead stakeholders about the underlying firm's economic performance. In addition, Schipper (1989) defines EM as the purposeful mediation in external financial reporting with the intention of gaining private benefit. Mulford & Comiskey (2002), however, define EM as an active manipulation of earnings strategy towards a predetermined goal that the management of a firm can set, a forecast made by analysts, or a constant amount from a more predictable source of earnings.

Although these definitions of EM are distinct, they have some commonalities. They concentrate on interference in the financial statement process to achieve personal benefit, which is implicit in opportunistic practices. For example, Schipper's (1989) definition of EM implies that management dishonestly alters reported earnings for personal benefits. This explanation

lacks in-depth insight into the precise mechanisms and purposes of EM, whereas the description provided by Healy & Wahlen (1998) concentrated primarily on the judgement that managers use financial reporting and transaction structuring to mislead investors and/or other stakeholders. In contrast, the definition of Mulford & Comiskey (2002) underlines similar manipulation but is more precise in terms of the motive behind EM, which is the need to meet analysts' forecasts and predetermined objectives.

The phenomena of earnings management activities are placed under the auspices of what has become known as creative accounting. Mulford & Comiskey (2002) described creative accounting as actions to promote aggressive practices, fraudulent financial reporting, or managing earnings. The definition of EM may involve some fraudulent activities. Still, EM differs from fraud when management manipulates earnings within the limitations of the flexibilities allowed by Generally Accepted Accounting Principles (GAAP) without contravening their standards, in other words, legally engaging in earnings management.

Management could also practise income smoothing, which is a form of EM described by Mulford & Comiskey (2002) as a means by which executives eliminate troughs and peaks from a regular series of earnings to provide a more stable income flow. This will include management actions to decrease and save some earnings during lucrative years to use in less profitable years. Though practising EM within the scope of GAAP is not fraudulent, it is still an

important issue because it is opportunistic (Svabova et al., 2020). Opportunistic EM happens when managers intentionally select accounting models to deceive investors and stakeholders about the firm's underlying economic performance (Healy & Wahlen, 1999). If opportunistic activities are taken too far, EM will cross into the realms of fraudulent behaviour.

2.3 Earnings Management Approaches

Efficient and opportunistic earnings management are two approaches used by companies' management to manipulate their financial statements to achieve certain objectives. Whilst both involve the manipulation of financial information, they differ in their intent and the methods employed (Jiraporn *et al.,* 2008). Efficient earnings management focuses on optimising the timing and recognition of financial transactions within the boundaries of GAAP (Siregar & Utama, 2008). The objective is to present a more accurate and transparent view of the company's financial position and performance. Efficient earnings management aims to smooth out earnings fluctuations caused by temporary factors and highlight the underlying economic performance of the company (Menicucci and Menicucci, 2020). Opportunistic earnings management, in contrast to efficient earnings management, refers to the deliberate and intentional manipulation of financial information with the aim of misleading shareholders and other stakeholders or achieving personal or organisational targets. It involves the use of accounting techniques and practices that may not reflect the economic reality of a company's operations. The purpose of

opportunistic earnings management is often to enhance short-term financial performance or meet specific financial goals (Braswell and Daniels, 2017).

2.4 Earnings Management Techniques

According to Jabbar (2018), managers employ several techniques (see Table 1 in the appendix for EM malpractices) to influence accounting figures, and EM techniques can be categorised into three groups. The first group includes techniques that take advantage of the GAAP standards' flexibility (acting within the limit and scope of GAAP), such as the freedom to exercise certain judgements and estimates, the choice between inventories' depreciation and amortisation methods, and the choice between methods of stocks' valuation, etc. Accordingly, Bauwhede & Willekens (2003) stated that the flexibility offered by GAAP to management to select from a range of accounting methods is aimed at allowing firms to prepare their financial report in a manner that exhibits their real economic performance to the determined level possible. However, the afforded flexibility is seized upon by management to adjust reported earnings figures. The second group includes techniques that violate GAAP standards, including fraudulent activities, and is thus known as "earnings management outside the scope of GAAP". Such techniques are often employed by firms that exploit the flexibilities afforded by GAAP to manage their earnings. An example is an early revenue recognition, where managers recognise revenues when goods are shipped (Bortoluzzo et al., 2016). Finally, the third group includes real operations that are intended to influence the

reported earnings, such as choosing the timing to sell some of the firm's assets and managing optional expenses such as the costs of research and development (R&D).

According to Yaping (2005), earnings are a summary of items represented in financial statements by the income statements' bottom line. Financial statements' principal role is to report firms' financial information to both internal and external users of the financial statement promptly and with faithful representation. These are the primary means of communicating the firm's financial status and performance to shareholders and other interested parties (Tasios & Bekiaris, 2012). Earnings are a key component of financial reports and are employed in formulating corporate decisions, including source and cost of capital and executive compensation. Ideally, the recorded earnings should facilitate the allocation of resources within the firm and represent the firm's underlying operating economics (Sun & Rath, 2008).

Goel (2012) describes earnings as the net income or the bottom line and states that earnings are the single most significant element in financial statements as they indicate the extent of a firm's value-added actions and help in the mobilisation of resources in the capital market. Therefore, managers are always interested in their reporting.

Earnings are an essential part of the financial reporting process, as they are the focus of auditors and management. Sprouse (1978) argues that managers are profit-oriented because they perceive the earnings figures reported in the

financial statement as the core measure of their performance. Specifically, this occurs when top management's compensation scheme is linked to a measure of earnings activities. The author claims that auditors are also earnings oriented, and the impact on recorded earnings tends to be a primary criterion for independent auditors' materiality decisions. In addition, he claims that a good deal of evidence also highlights the value of earnings figures for users. Thus, since earnings are the primary element in the procedure of financial reporting and are associated with earnings management, it is important to review the framework of the theories that try to explain earnings management prevalence, especially in the presence of standards to promote transparency, such as key audit matters that can restrain such dishonest managerial behaviour.

2.5 Earnings Management Determinants

Although earnings management is managerial activity (Schipper, 1989; Dye, 1988), there are many other factors in the organisational field that influence the decision of firms' management to engage in EM practices (Stolowy and Breton, 2004). These factors can be categorised into internal and external determinants that determine firm-level EM activity. For instance, key external factors such as market competition, regulatory oversight, financial performance, and audit quality also influence earnings management. Market competition can act as a constraint on earnings mismanagement, as companies face pressure to present reliable and accurate financial information to attract capital and maintain investor confidence (Man and Wong, 2013). In contrast,

strong regulatory frameworks that enforce accounting standards and disclosure requirements create a deterrent effect on earnings manipulation (Callao and Jarne, 2010). Regulatory bodies such as the Securities and Exchange Commission (SEC) and Financial Reporting Council (FRC) play a vital role in monitoring financial reporting practices and taking legal action against fraudulent activities (Healy and Wahlen, 1998). In addition, financial performance pressure wherein companies facing financial distress, declining profitability, or the need to maintain credit ratings, secure financing, attract investors, enhance stock prices, meet market expectations or/and meet specific financial targets imposed by investors or lenders may resort to earnings manipulation to portray a more favourable financial position (Duncan, 2001). Audit quality, such as the quality and independence of the external auditing firm, can impact the extent of earnings management activities. A diligent and reputable auditing firm is more likely to perceive and discourage manipulative practices, thereby acting as a check on EM misbehaviour (Bédard et al., 2004).

In addition to external determinants, there are various internal determinants that influence earnings management, and one significant aspect is corporate governance which plays a vital role in shaping the determinants of EM within an organisation (Xie et al., 2003; Salem et al., 2021a; Usman et al., 2022a). Effective governance practices establish a framework of processes and rules that promote accountability, transparency, and ethical behaviour. They ensure that firms' management operates in the best interests of shareholders and

other stakeholders, decreasing the temptation for earnings mismanagement (Devaney, 2016).

Firstly, the board of directors composition and independence are crucial in curbing earnings management malpractices. For instance, the composition of the board of directors with a diverse range of skills, independence, and expertise is more likely to challenge management decisions and scrutinise financial reporting. Independent directors who possess relevant financial expertise and are not directly affiliated with the company can bring objectivity to the table, providing an effective check and balance on management's actions. They are less prone to colluding with executives in engaging in EM practices (El Diri et al., 2020; Ezeani et al., 2021).

Secondly, the presence of an effective audit committee is critical in discouraging earnings manipulation. A robust audit committee controls the process of financial reporting and ensures the integrity of the company's financial statements (Abdullah, 2006; Salem et al., 2021b; Ezeani et al., 2022; Tan et al., 2022). It should be made up of independent directors with financial competence and expertise who can assess management's accounting decisions thoroughly and question any potential manipulation. A strong audit committee is instrumental in improving the credibility of financial reporting and discouraging EM practices. Furthermore, the effectiveness and quality of internal control mechanisms are important variables in minimising the extent of EM (Madi et al., 2014; Komal et al., 2022). Internal controls that are effective

ensure that financial transactions are appropriately documented and reported. They establish a system of checks and balances that reduces the possibility of manipulation. Controls that are effective also contribute to trustworthy and timely financial information, allowing for better decision-making by stakeholders (Fung, B., 2014).

In conclusion, the determinants of earnings management manipulation are influenced by various factors, with corporate governance playing a crucial role. A well-functioning corporate governance framework, encompassing an independent board of directors, an effective audit committee, and robust internal controls, helps mitigate the risk of earnings manipulation. Furthermore, market competition and regulatory oversight contribute to fostering accountability and transparency in financial reporting. By addressing these determinants and promoting good governance practices, organisations' management can enhance the integrity and reliability of their financial statements, thereby fostering trust among shareholders and other stakeholders in order to support long-term value creation.

It's important to note that the above-mentioned determinants of EM are interrelated and can interact with each other. In this case, firms need to be mindful of these factors and implement effective corporate governance practices, transparent financial reporting, and ethical standards to mitigate the risk of earnings manipulation and maintain the integrity of their financial statements. Therefore, this research is distinguished from other studies by

involving the key external and internal determinants as variables, including board governance, audit committees, external auditors, and the firm's financial characteristics to help identify the determinants of earnings management in the U.K after the implementation of KAM. However, the current research still has limitations as it only considers the aforementioned characteristics ignoring other characteristics and a modification of the variables as the determinants may also be considered. For instance, future research may include modifying the variables which are likely to have more impact on earnings management. Thus, the hypothesis tests will be undertaken to obtain empirical evidence regarding the influence of each determinant on EM in the U.K.

2-6 Empirical Research on Earnings Management

The intensifying and aggressive market competition appears to have motivated managers to deliberately practise earnings management (EM) to reflect a good image of the firm's economic situation. Firms' managers have strong incentives to adjust earnings to maximise firms' value and/or managers' wealth. However, the motives behind EM are complex, ranging from incentives to maintain a competitive position in the financial market to realise bonuses as well as the intention to satisfy analysts' expectations (Rahman et al., 2013). Previous studies (e.g., Hosseini et al., 2016; Chen et al., 2007; Goncharov and Zimmermann, 2006; Bergstresser and Philippon, 2006; Cheng and Warfield, 2005; Baker et al., 2003; Schipper, 1989) recognised varied categories of incentives to practise EM, such as signalling and concealing private

information; management compensation schemes; stock market incentives; lending contract obligations; personal interest; meeting or exceeding analysts' earnings forecasts as well as political and regulatory requirements. Most researchers investigating EM focus on these motivations and believe that the management's practices for accounting manipulation for opportunistic purposes is the same within firms. There is extensive literature on the rationales of opportunistic EM. For example, Chung et al. (2002) stated that most of the studies on the management of earnings conclude that managers engage in opportunistic EM. In addition, Burgstahler & Dichev (1997) confirmed that executives opportunistically avoid reporting losses and earnings declines to reduce the costs of transactions with stakeholders. In addition, studies (e.g., Tsipouridou & Spathis, 2012; Hsu & Wen, 2015; Al-Rassas & Kamardin, 2016) warned about risk behaviours and their incentives that drive managers to uncommon attitudes by occasioning accounting fraud (Lopes, 2018). Companies that exercise legal EM ensure their financial reports are made in accordance with financial reporting standards, although companies might be accused of exercising fraudulent EM in their financial reporting when they fall outside the limits of acceptable accounting practices. Managers will, therefore, only participate in EM when the benefits are greater than the costs and risks associated with this activity (Rahman et al., 2013).

However, despite the negative outlook associated with EM, some scholars argue that EM can be advantageous because it can theoretically

increase the value of earnings by communicating private information to stockholders and the public. These activities are placed under the umbrellas of what has become known as efficient EM, which is different from the opportunistic EM (see previous section for their definitions) (Jiraporn et al., 2008). Siregar & Utama (2008) have differentiated between efficient and opportunistic EM by expressing that opportunistic EM is practised by managers to deceitfully maximise their benefits, whereas efficient EM enhances earnings informativeness in revealing private information. Thus, earnings informativeness refers to the content of information reported in the earnings that are carried to the market. When earnings are released with more private information, they add more information value to outsiders, which can be seen as a positive side to EM. According to this perspective, Wang & Williams (1994) claim that income smoothing boosts the information value of disclosed earnings, as the income smoothing process integrates managers' private knowledge of the firm's future performance, and this private knowledge is beneficial to prospective investors. Furthermore, the objective of income smoothing is to shift earnings or part of earnings to a future period to smooth earnings rather than to provide a truly and fairly view of the financials of the firm, where prospective investors can benefit from the income smoothing process. Subramanyan (1996) finds evidence from US firms that opportunistic accruals-based EM enhances earnings' ability in reflecting a firm's economic value. This means that discretionary accruals exhibit information about a firm's

future profitability. Furthermore, the same author evidenced that pervasive income smoothing boosts the predictability and persistence of disclosed earnings as income smoothing decreases the variability of earnings. Accordingly, Siregar & Utama (2008) examined whether EM in listed firms on the Jakarta Stock Exchange is efficient or opportunistic. Their findings show that the type of EM chosen by these firms inclines toward efficient EM. In accordance with these results, Rezaei & Roshani (2012) and Omid et al. (2012) found the same results, whereby the Iranian firms tend toward efficient EM, arguing that Iranian firms' managers use their discretion to enclose private information about firm's profitability. However, Lin (2011) in her examination of Taiwanese listed firms found that management can engage in opportunistic EM when managerial ownership is less than about 10%. The author maintains that this is constant with the alignment effect, which means that managers practice efficient EM to boost the firm's value as managerial ownership increases, which is a significant issue, regardless of whether EM is efficient or opportunistic, as evidenced by the extensive current literature exploring the phenomenon.

Notwithstanding the above, studies have offered mixed findings and inconsistent results in different contexts. They have contributed to the earnings management (EM) literature by providing significant preliminary archival evidence. However, due to changes in the UK's economy over the past decade, including economic fluctuations, regulatory reforms, technological

advancements, the Brexit process, and globalisation, a significant gap has emerged in the EM literature. Thus, there is a need to re-evaluate the existing literature on EM and extend it to encompass these contextual changes. Therefore, this research will help deepen the understanding of the motivations, methods, and consequences of EM in the evolving economic landscape, enabling policymakers, regulators, and investors to make informed decisions and promote financial reporting integrity.

2-7 Earnings Management Types

There are three broad types of models employed by management to alter earnings. They are (i) accrual-based earnings management (AEM) that occurs when management change estimates and accounting choices, (ii) real activities earnings management (REM) that have direct cashflow effects, and finally (iii) classification: shifting earnings management (CS) that occurs when managers shift core expenses classification to special items reported in the income statement.

2-7-1 Accrual-Based Earnings Management

Sloan (1996) defined accruals as the difference between cash flow and earnings reported, they are a regular component of a company's transactions. For example, if a company makes a sale on credit, this sale is recognised as income regardless of whether cash has been received. This results in the creation of receivables that are cancelled in the future when cash is received (McVay, 2006). Accounting practices admit discretion for management in the provided financial statement, where managers can exploit this by delaying the

recognition of expenses that have been incurred or recognising incomes before they are earned, which results in accruals (Flynn *et al.*, 2016; Salem et al., 2021b; Usman et al., 2022b).

According to Khotari *et al.*, (2020) accrual-based EM occurs when a firm's manager intervenes in the process of the financial statement by employing judgement and discretion to alter reported earnings without any consequences of cashflow. Companies may be aggressive in their accounting policies by carrying forward earnings from the future period using revenues' acceleration and/or expenses' deceleration and thereby maximising earnings in the current period. This helps create what are known as discretionary accruals in the accounting literature (Elkalla, 2020). Since the accruals are reversed over time, earnings will be automatically decreased by the number of earnings that were carried forward in the previous period.

On the other hand, a company can be conservative and save profits for a future period. As an example, conservative revenue-recognition practices can be exercised to defer revenue and minimise current period earnings. This results in what is known in accounting literature as "cookie jar reserves", whereby a company can store earnings for future periods when earnings might be under the growth target rate (Mulford & Comiskey, 2002). Besides, a decrease in deferred revenue can be made to raise income and earnings in the upcoming periods.

However, companies with poor performance cannot continue with earnings overstatement without eventually being detected. In contrast, companies with good performance are likely to grow in their earnings and increase their cashflows, which can counterbalance reversals from prior earnings management activities. Roosenboom *et al.* (2003) state that well-performing companies might engage in aggressive accounting policies and get away with them throughout periods of growth.

According to Ahmed *et al.* (2002), companies can opt for conservative assumptions about the useful life and residual value of a fixed asset or the account receivable collectability by exploiting the flexibility allowed by GAAP to increase expenses controlling the downwards of earnings. However, in less profitable years, a company may decrease bad debt allowance, expand useful lives of fixed assets, or increase the fixed asset residual value to reduce expenses, which will increase the earnings (Mulford & Comiskey, 2002).

Companies may also switch between cost approaches, such as changing from the lastin, first-out (LIFO) inventory approach to the first-in, first-out (FIFO) approach, or adopt the average cost approach because the mentioned approaches produce different figures which reflect differently on the cost of sales in the balance sheet. Managers may use the FIFO method in periods of increasing prices to minimise sales' cost to maximise profits instead of LIFO methods, or switch among these approaches to achieve a higher or lower cost of sales on the income statement to alter the earnings (Morse, 1994).

Furthermore, firms may use accruals to understate liabilities. This will be achieved by assessing the allowance needed for warranty obligations in such a manner that can understate liability; companies could also understate accrued expenses payable and claims for the environment (Mulford & Comiskey, 2002). Accordingly, in their study, Kamel & Elbanna (2010) found that companies engage in earnings manipulation by making inadequate provisions, capitalising expenditures, and overestimating the value of inventories. Therefore, accrual-based EM can be used to overstate earnings and assets' value and understate expenses and liabilities' value.

2.7.2 Measurements of Accrual-based Earnings.

A various number of earnings management studies have attempted to measure accrual-based EM using different approaches. However, the success of any EM research critically depends on the method adopted to measure it (Callao *et al.*, 2017). For example, McNichols (2000) recognises three methodologies commonly used in the literature to detect EM: a methodology based on accruals approach (Beaver & McNichols, 1998; Beneish, 1997; Beaver & Engel, 1996; Petroni, 1992; McNichols & Wilson, 1988), another based on the frequency distribution of earnings after management (Degeorge *et al.,* 1999; Burgstahler & Dichev, 1997), and those based on aggregate accruals models (e.g., Kothari *et al.,* 2005; Kothari, 2001; DuCharme *et al.,* 2001; Erickson and Wang, 1999; Han and Shiing-Wu, 1998; DeFond & Subramanyam, 1998; Dechow *et al.,* 1995; Jones, 1991; DeAngelo, 1986;

Healy, 1985). The following sections will briefly discuss each of these approaches.

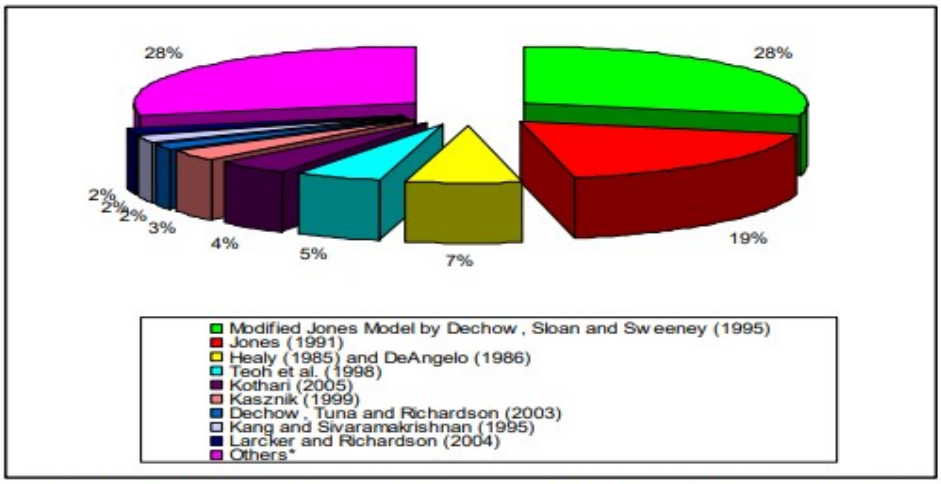
2.7.2.1 Aggregate Accruals Method

The aggregate accrual approach is expansively used in the literature to measure EM through discretionary accruals. Since aggregate accruals are made up of discretionary and nondiscretionary accruals, the key challenge faced by EM models is identifying and splitting the total accruals into the two components[1]. As a result, a variety of models have been proposed in the literature. These models vary from simple models that perceive the change in aggregate accruals as a measurement of EM to more sophisticated models that separate total accruals into discretionary and non-discretionary accruals.

In most of the studies, the authors concentrate on the measuring of EM by the models which are most popular and most applicable in the literature on EM. The five most popular models, according to Callao *et al.* (2017), are Kothari *et al.'s* (2005) model, Kasznik's (1999) model, Teoh *et al.'s* (1998) model, the modified Jones model (Dechow, Sloan, & Sweeney, 1995) and the Jones (1991) model. In total, these five models were applied in almost 60% of the studies on EM, and the modified Jones model (Dechow, Sloan, & Sweeney, 1995) was applied in almost 30% (see Figure 1). The following subsections briefly address the most common models in the aggregate accrual approach.

[1] Discretionary accruals are adjustments selected by firms' managers, while non-discretionary accruals are adjustments mandated by accounting standards.

The statistics are based on 195 analysed papers on accrual-based EM, within the period of 1981-2011.



* The statistics are based on 195 analyzed papers, within the period of 1981-2011. The group "Others" include different ways of measuring discretionary accruals, such as: neural networks, questionnaires, the models of the ratio adjustment process, ratio of the absolute value of accruals to the absolute value of cash flow from operations, or there are descriptive works.

Figure 1: Percentage of studies using determined model of measuring earnings management

Figure 1: Percentage of studies using determined models of measuring EM

The Model of Healy (1985)

Healy (1985) was the first to use total accruals scaled by lagged total assets to estimate discretionary accruals. Healy calculated total accruals as the difference between cash flow from operations and reported earnings. The author's implicit idea was that, in the case of non-occurrence of earnings management, the total accruals are expected to have a value of zero in the estimation period. However, the underlying assumption that the level of non-discretionary accruals is zero during the estimation period has received criticism for several reasons. *First*, the non-discretionary accruals level is not

expected to be zero in any given period as it varies depending on the firm's economic circumstances (Kaplan, 1985). *Second*, for many firms, the level of total accruals as non-discretionary accruals is more likely to be negative due to the impact of the depreciation expenditure (Perry & Williams, 1994). Additionally, although Healy (1985) affirms that total accruals include discretionary and non-discretionary accruals, the author does not separate discretionary accruals from non-discretionary accruals. The Healy (1985) model is presented as follows:

Model	The Healy Model (1985)
Formula	$DA_{i,t}=TA_{i,t}/A_{i,t-1}$
Variables	TA_{it} - Total Accruals in year t $A_{i,t-1}$ - Total Assets in year t -1

The Model of DeAngelo (1986)

The underlying assumption of the DeAngelo (1986) model presumes that the difference between accruals of the current year and the previous year is a result of changes in discretionary accruals, because the level of non-discretionary accruals might be constant over time. The model of DeAngelo (1986) assumes that the level of non-discretionary accruals is approximately zero because non-discretionary accruals follow a random track and that the change in the level of non-discretionary accruals is constant over time. To test this assumption, DeAngelo defined total accruals as the sum of discretionary and non-discretionary accruals. He calculated total accruals as the difference

between cash flow from operations and net income. However, DeAngelo's (1986) model has been criticised by several EM researchers because his model, alongside the Healy (1985) model, is the most restrictive for estimating discretionary accruals since they neglect the fact that non-discretionary accruals vary with the firm's economic circumstances. The DeAngelo (1986) model uses total accruals from the last period scaled by lagged total assets as the measure of non-discretionary accruals, as follows:

Model	DeAngelo Model (1986)
Formula	$DA_{i,t} = TA_{i,t-1}/A_{i,t-2}$
Variables	$TA_{i,t-1}$ = Total Assets in year t-1 $A_{i,t-2}$ = Total Assets in year t -2

The Model of Industry by Dechow & Sloan (1991)

The industry model was introduced by Dechow & Sloan (1991) to capture EM. The authors developed this model to respond to the limitations of the Healy (1985) and DeAngelo (1986) models, which consider that non-discretionary accruals are constant over time. Their Industry Model assumes that the variations in non-discretionary accruals levels are common within firms in the same industry. Based on this assumption, non-discretionary accruals, according to Dechow & Sloan (1991), are equal to the median value of total accruals in the current year scaled by lagged total assets for all non-sample firms within the same sector.

Even though the industry (Dechow & Sloan, 1991) model tries to solve the shortcomings of the Healy (1985) and DeAngelo (1986) models, it has some limitations, for example the model eliminates the variation in non-discretionary accruals within the same industry. Thus, if non-discretionary accruals change because of changes in the firm's economic circumstances, this model can misclassify non-discretionary accruals as discretionary accruals. It also eliminates the correlated variation in discretionary accruals across firms in the same industry; thus, the model may misallocate discretionary accruals to non-discretionary accruals (Dechow *et al.,* 1995). The industry (Dechow & Sloan, 1991) model is presented as follows:

$$NDA\tau = \gamma 1 + \gamma 2 median_1 (TA)$$

Where:

- median1(TA)τ = the median value of total accruals for firms in the same 2-digit standard industrial classification (SIC) code scaled by lagged assets.
- γ1 and γ2 = firm-specific parameters, are estimated using OLS on the observations in the estimation period.

The Model of Jones (1991)

Based on the notion that total accruals are likely to result from changes in a firm's economic circumstances on non-discretionary accruals and managerial discretion, Jones (1991) proposes a regression-based model that

attempts to control the changes in the revenue and depreciation. The Jones (1991) model includes changes in revenues to control changes in a firm's economic circumstances on non-discretionary accruals, and includes changes in gross property, plant, and equipment to control the changes in depreciation. However, controlling for change in revenue means that the revenues are non-discretionary accruals. Given the possibility that revenues, to some extent, might be affected by managers' manipulation (e.g., increasing sales recognition near the year-end period), using the Jones model will, therefore, eliminate part of discretionary accruals. To estimate discretionary accruals Jones (1991) used a two-stage producer. In the first stage, the author relates total accruals to the change in revenue and gross property, plant, and equipment using time-series data prior to the event period t, as shown in the following equation:

$$NDA\tau = \alpha_1(1/A\tau-1) + \alpha_2(\Delta REV\tau) + \alpha_3(PPE\tau)$$

Where:

- $\Delta REV\tau$= revenues in year τ less revenues in year $\tau -1$ scaled by total assets at $\tau -1$.
- $PPE\tau$ = gross property plant and equipment in year τ scaled by total assets at $\tau -1$
- $A\tau-1$ = total assets at $\tau -1$
- $\alpha 1$, $\alpha 2$, $\alpha 3$ = firm-specific parameters.

In the second stage of discretionary accruals estimation, the parameters α_1, α_2 and α_3 from the equation above are applied to data from the event year t to estimate discretionary accruals as shown in the following equation:

$$TA\tau = a_1(1/A\tau - 1) + a_2(\Delta REV\tau) + a_3(PPE\tau) + \upsilon\tau$$

Where:

- a1, a2 and a3 denote the Ordinary Least Squares (OLS) estimates of $\alpha 1$, $\alpha 2$and $\alpha 3$
- TA is total accruals scaled by lagged total assets.

It is worth mentioning that the first stage equation from the Jones model was first introduced in a time-series approach, which necessitates a long period of data set to generate effective estimator coefficients. Nevertheless, using a time-series approach has several limitations. *First*, a time-series approach causes the potential of survivorship bias problems (DeFond & Jiambalvo, 1994; Peasnell *et al.,* 2000a). *Second*, according to Peasnell *et al.* (2000b), the time-series approach may result in specification problems in the form of serially correlated residuals. To overcome these limitations, DeFond & Jiambalvo (1994) recommended the use of the cross-sectional version of the Jones (1991) model by estimating the equation of the first stage for each industry on a year-specific rather than a firm-specific basis followed by the estimator coefficients

to predict discretionary accruals for each firm through the equation of the second stage.

Recently, a significant number of EM studies (Cohen & Zarowin, 2010; Iqbala *et al.,* 2009; Chen *et al.,* 2008; Bergstresser & Philippon, 2006; Xie *et al.,* 2003; Kothari, 2001; Teoh *et al.,* 1998a, Usman et al., 2022c, among others) have opted for the cross-sectional approach over the time-series approach as the favourite to avoid the limitations inherent in the time-series approach.

The Modified Jones Model by Dechow *et al.* (1995)

In response to the Jones model's limitation, which assumes that revenues are nondiscretionary accruals, Dechow *et al.* (1995) developed a modified version of the Jones model that subtracts the change in receivables from the change in revenues to exclude the portion of the change in revenue that is supposed to be managed through managerial discretion. However, the assumption that the entire change in receivables in the event period is discretionary accruals overestimates these accruals to the extent that the change in receivables results from a firm's economic conditions.

The modified version of the Jones model is designed to eliminate the Jones model's conjectured tendency to measure discretionary accruals with error when managerial discretion is exercised over revenue recognition. The modified model assumes that the change in receivables during the event year is completely composed of discretionary accruals, as it is a result of managerial discretion, where managers can practise their estimation over credit sales more

easily than cash sales. The modified Jones model uses the estimated coefficients in the following equation:

$$NDA\tau = \alpha1(1/A\tau-1) + \alpha2(\Delta REV\tau - \Delta REC\tau) + \alpha3(PPE\tau)$$

Where:

- $\Delta REC\tau$ = net receivables in year τ less net receivables in year $\tau - 1$ scaled by total assets at τ-1
- $\alpha1$, $\alpha1$ and $\alpha1$ are those obtained from the original Jones model, not from the modified model.

Note: The only adjustment relative to the original Jones model is that the change in revenues is adjusted for the change in receivables in the event year.

The Model of Performance-Matched (Kothari *et al.* 2005)

Dechow *et al.* (1995) and Kothari *et al.* (2005) evaluate the specification and power of the Jones (1991) model cross-sectional version based on both multiple-years and one-year measurements. Their two studies show similar findings and reveal that the two models' misspecifications tests (multiple-years and one-year measurements) are more extreme, explicitly for firms with either lower sales growth or higher book-to-market ratios. Furthermore, they discover that a firm's financial performance proxied as return on assets (ROA) is positively and significantly associated with discretionary accruals, implying that the Jones models do not control the firm's economic circumstances. In response to this limitation, Kothari *et al.* (2005) extended the modified Jones model by incorporating return on assets to control firms' financial performance.

Therefore, discretionary accruals, according to Kothari's *et al.* (2005) model, are estimated as the residuals, as shown in the following regression equation:

$$TA_{it}/A_{it-1} = a_0 + a_1(1/A_{it-1}) + a_2(DSALE_{it} - DREC_{it})/ A_{it-1} + a_3 PPE_{it}/A_{it-1} + a_4 ROA_{it-1}/ A_{it-1} + e_{it}$$

Where:

- TA_{it} - Total Accruals in year t
- A_{it-1} - Total Assets in year t -1
- $DSALE_{it}$ - Change in sales in year t
- $DREC_{it}$ - Annual change in receivables accounts in year t
- PPE_{it} - Gross property, plant and equipment in year t
- ROA_{it-1} - Return on assets in year t
- e_{it} - The error term

2.7.2.2 The Specific Accruals Method

The reliance of researchers on total accruals models motivated Healy & Wahlen (1999) to call for further research in specific accruals. The authors stated that there is little evidence in EM literature using a specific accruals approach, proposing that this is likely to be an interesting area for upcoming research, as it can provide direct evidence for academics and standard setters. Accordingly, Beneish (2001) declares that the difficulties faced by total

accruals models suggest that studies using a specific accruals approach are needed in EM literature.

The specific accrual approach has two models that have been tested in prior literature. The first is the single specific accruals model that focuses on the industry settings in which a single accrual is sizeable and involves substantial judgement. Based on this approach, McNichols & Wilson (1988), for example, used the residual provision for bad debt instead of total accruals as a proxy for discretionary accruals. Their findings indicate that companies with exceptionally low earnings tend to participate in income-decreasing EM, which is consistent with the big bath strategy. Further studies investigate other single specific-accruals approaches, such as the claim loss reserves in insurance companies (Petroni *et al.,* 2000; Petroni, 1992) and loan loss provisions in the banks (Beaver & Engel, 1996). The second is the multiple specific accruals model employed by Beneish (2001) to detect EM in firms experiencing extreme financial performance. The author had included in the model various variables such as ownership structure, capital structure, time listed, sales growth, prior market performance, and other incentives for managers to violate GAAP. The study's findings show a systematic connection between the likelihood of violating GAAP and the variables used as proxies for motivations to engage in earnings manipulation, such as prior market performance, capital structure, and sales growth.

Even though the specific accruals approach has some benefits in estimating discretionary accruals in some cases, it fails to do so in the majority of cases (McNichols & Wilson, 1988). Besides, it is insufficiently flexible for the examination of other variables, such as corporate governance. Therefore, the approach is meaningless when exploring the relationship between earnings management and other hypothesised factors, as it needs a separate model for each specific accrual that is more likely to be affected by the hypothesised factors.

2.7.2.3 Frequency Distribution Method

The frequency distribution approach assumes that managers are motivated to meet specific earnings targets, such as avoiding losses and decreased earnings. As a result, it examines the distribution of recorded earnings across certain thresholds to see whether the incidence of amounts above and below the thresholds are evenly distributed or represent discontinuities due to managerial discretion. Burgstahler & Dichev (1997) were the first to use the distribution of earnings and change in earnings to measure whether managers manipulate earnings to avoid loss and earnings decreases. When managers try to avoid losses, it is reflected in the form of an uncommonly low frequency of small losses and an uncommonly high frequency of small profits. Similarly, when managers try to avoid earnings decrease it is reflected in the form of an uncommonly low frequency of small decreases in earnings and an uncommonly high frequency of small increases in earnings. In addition,

their study's findings discover that firms with slightly negative pre-managed earnings practise income-increasing to report positive earnings, and firms with small pre-managed earnings decreases practise income increasing to report earnings increases. Furthermore, it reveals that changes in working capital and cash flow from operations are the primary tools to manage earnings.

Likewise, Degeorge *et al.* (1999) use distribution of earnings per share in their study to assess whether sustaining recent performance, avoiding loss, and meeting analysts' forecasts encourage managers to manipulate earnings. Their findings show that the most important threshold motivating managers to manipulate earnings is to meet analysts' expectations, the wish to avoid reporting losses and to report profits at least equal to previous profits. In another study, Myers & Skinner (1999) examine whether the number of consecutive earnings-increases is higher than predicted in the absence of earnings management. They discover that there are far more companies with long stretches of consecutive quarterly earnings increases than would be predicted by chance, and they report evidence that these firms' managers use income smoothing to achieve this result. Other studies show similar findings.

However, the frequency distribution approach has received criticism. For example, Durtschi and Easton (2005) claim that there is no evidence to support the assumption that the pervasive discretionary accruals discontinuity at zero is a result of EM practices. They criticised the discontinuity around zero and the forms of frequency distribution which studies count on as evidence of

EM. In addition, they claim that these forms are affected by deflation, sample selection criteria and differences between the observation's characteristics to the left and to the right of zero. They assume that the forms of distribution patterns are incomplete evidence of EM, thus, before using the shapes of earnings distributions around zero as evidence of EM, researchers must rule out these confounding factors.

2.7.3 Real Activities Earnings Management

Real earnings management occurs when management deliberately undertakes actions to change the firm's underlying operations to increase reported earnings (Gunny, 2005). For example, managers can engage in REM by lowering prices towards the year-end to increase sales from the next fiscal year into the current year, selling fixed assets to alter losses and gains, and delaying desirable investment, to improve earnings for the current year. Additionally, firms may opportunistically minimise the expenditures of research and development to decrease expenses in the income statement or delay maintenance expenditure to maximise reported earnings (Dechow & Skinner, 2000). According to Roychowdhury (2006), real earnings management not only affects earnings but also operating cash flow. Cohen *et al.* (2011) stated that the terms "real activity manipulation", "real activity management", and "real earnings management" are interchangeable.

This type of earnings management activity (REM) is described by Zang (2012) as a purposeful action taken to adjust reported earnings in a certain

direction by altering the structuring or timing of an operation, an investment, or financing transaction. Cohen & Zarowin (2010) also described REM activity as the actions taken by managers which deviate from standard business practices. These actions are manipulations that influence cashflows. The commonality between these various descriptions is obviously the fact that real activity earnings management is purposeful in nature and has actual cash flow implications. Previous studies provided strong evidence of REM existence. The use of REM by executives is supported by the study of Graham *et al.* (2004); their findings from a survey of 401 financial executives indicate that 78 percent of the interviewees showed a readiness to sacrifice the economic value to manage the perceptions of financial reporting.

Considering the implications of REM, this activity is important not only to the firm's stakeholders but also to standards setters in accounting and accounting regulators, given that REM is one possible consequence of regulations aimed to restrict accounting earnings management discretion (Gunny, 2010). The analytical model developed by Ewert & Wagenhofer (2004) demonstrated that REM increases when tightening accounting standards make it more challenging to manage accruals. Nevertheless, their study does not explicitly address the trade-off between REM and AEM, but assessing the consequences of REM, offers general information related to assessing the benefits and costs of accounting standards that may interfere with the use of REM.

Kim & Sohn (2013) declared that REM is regarded to be more expensive than AEM. Gunny (2010) stated that REM has direct cashflow consequences that might have a long-term negative impact on a firm's value. REM is harder to be detected than AEM because the REM activities have a direct effect on cash flow. Moreover, the management of real activities is not usually within the scope of any existing audit system and is less subjected to rigorous controls and external scrutinising by society (Kim & Sohn, 2013). Zang (2012) argued that REM might be used throughout the year, whereas accrual earnings management is usually more confined to particular times and periods.

2.7.3.1 Real Activities Earnings Management Measurement

To examine the levels of real activities manipulation, Roychowdhury (2006) constructed three measures comprising of three proxies, including abnormal levels of cash flows from operations, abnormal production costs, and abnormal discretionary expenses. These proxies have been widely employed in previous studies (Kim & Park, 2014; Farooqi *et al.*, 2014; Kang & Kim, 2012; Zang, 2012; Cohen *et al.*, 2011; Cohen & Zarowin, 2010; Gunny, 2010; Cohen *et al.*, 2008) and they provide confidence in the construct validity of these proxies. Roychowdhury (2006) developed these measures because, under the abnormal cash flow from operations, managers can choose to increase earnings by accelerating the timing of sales through higher price discounts or more lenient credit terms, with the objective of persuading more customers. Managers will increase sales from the following year to the current year by

introducing price discounts. However, the increase in sales volume is a temporary situation that will vanish once the company returns to its old prices (Cohen & Zarowin, 2010). Also, the price discounts will increase total earnings in the short term, but they will reduce margins in the long run. As a result, production costs will be abnormally high compared to sales (Roychowdhury, 2006). The normal cash flow from operations is expressed as a linear function of sales and a change in sales in the current period. To estimate the model, the following cross-sectional regression for each year and industry is used:

Abnormal cash flow from operations:

$$CFO/A_{i,t-1} = \beta_0 + \beta_1(1/A_{i,t-1}) + \beta_2(Sales_{i,t}/A_{i,t-1}) + \beta_3(\Delta Sales_{i,t}/A_{i,t-1}) + \varepsilon_{i,t} \quad \textbf{Equation 1}$$

Where:
CFO: is the cash flow from operation,
i: is the company and t the year.
A: is the total assets.
Sales: is the annual sales, and
ΔSales: is the change in annual sales.

The abnormal level of cash flow from operations is measured as the residuals (ε) from equation (1) (Cohen *et al.*, 2011; Roychowdhury, 2006). The higher the residuals, the larger the amount of abnormal cash flow from operations, and the greater the increase in reported earnings through increasing sales.

Under the abnormal discretionary expenditures, managers can decide to cut the levels of discretionary expenses to maximise the reported earnings. For example, managers can cut the level of expenditures of advertising, research and development (R&D), and selling, general, and administrative expenditures (SG&A). Managers can increase their current period earnings by lowering these expenses, which leads to an increase in current period cash flows when these expenses are paid in cash. However, there is a risk that this will have a negative impact on future cash flows (Roychowdhury, 2006).

Abnormal discretionary expenditures:

$$DISX_{i,t}/ A_{i,t-1} = \alpha_0 + \alpha_1(1/ A_{i,t-1}) + \alpha_3(Sales_{i,t-1}/ A_{i,t-1}) + \varepsilon_{i,t} \qquad \textbf{Equation 2}$$

Where:

DISX: is the discretionary expenditures defined as the sum of R&D, advertising, and SG&A expenditures.

The abnormal level of discretionary expenditures (RMDISX) is measured as the estimated residuals (e) from the equation (2) (Cohen *et al.*, 2011; Roychowdhury, 2006). The residuals are multiplied by -1 such that the higher the residuals, the larger the number of discretionary expenditures cut by firms to increase reported earnings.

Under the abnormal production costs, managers can increase the reported earnings by overproducing inventories to lower their costs of goods

sold. By increasing the production above the normal, managers can spread the costs of fixed overheads over a larger number of units. This would subsequently decrease the reported cost of goods sold and increase operating margins (Cohen & Zarowin, 2010; Cohen *et al.*, 2008; Roychowdhury, 2006). However, companies may incur extra holding costs because of the overproduction, resulting in lower cash flows from operations than normal sales levels (Roychowdhury, 2006).

Abnormal production costs:

$$PROD_{i,t}/ A_{i,t-1} = \beta_0 + \beta_1(1/ A_{i,t-1}) + \beta_2(Sales_{i,t}/ A_{i,t-1}) + \beta_3(\Delta Sales_{i,t}/ A_{i,t-1}) + \beta_4 (\Delta Sales_{i,t-1}/ A_{i,t-1}) + \varepsilon_{i,t}$$ **Equation 3**

Where:

PROD: is the sum of the cost of goods sold by the firm i in the year t and the change in inventory from year t - 1 to t.

The abnormal level of production costs is measured as the residuals (ε) from equation (3) (Cohen *et al.*, 2011; Roychowdhury, 2006). The higher the residuals, the greater the amount of abnormal production costs, and the greater the increase in reported earnings through decreasing the cost of goods sold which means a greater indication of real activities manipulation.

2.8 Earnings Management Incentives

Previous research on earnings management provides evidence that many factors motivate managers to engage in EM. For example, studies (Shafer & Wang, 2011; Madhogarhia *et al.*, 2009; Noronha *et al.*, 2008; Lo, 2008; Gaa

& Dunmore, 2007; Cheng & Warfield, 2005; and Healy &Wahlen, 1999) have identified several incentives for mangers to practice EM. The most common motivations for earnings management in the studies mentioned earlier are management compensation contracts, equity incentives, political and governmental regulatory considerations, mergers and acquisitions, initial public offerings and seasoned equity offerings, debt contracts, meeting or exceeding analysts' earnings forecasts and tax avoidance. Thus, this section covers different incentives for the management of earnings.

2.8.1 Management Compensation Contracts Scheme

Previous literature on EM indicates that compensations based on the firm's performance can motivate management to manipulate earnings using accruals-based earnings management (e.g., McAnally *et al.*, 2008; Healy, 1985), or real activity earnings management (e.g., Laksmana, 2010; Cao *et al.*, 2008; McAnally *et al.*, 2008; Dechow & Sloan, 1991) which negatively affects shareholders' wealth. For instance, Hsu *et al.*, (2020) empirically explored the impact of compensation system on three types of EM. Their findings show that compensations schemes simultaneously increase the use of classification shifting, accrual-based, and real activity earnings' management. Watts & Zimmerman (1978) argue that management compensation is expected to influence managers' choice of the accounting process to increase the present value of their awards.

Healy (1985) indicates that it is more likely that increasing the plan of the compensation would enable managers to participate in EM. The results of his study show that discretionary accruals are significantly related to bonus plans. He included that firms' managers maximise their earnings when they reach their bonus threshold to obtain higher bonuses. Conversely, their incentives shift towards minimising earnings when they exceed their maximum potential in bonuses, to keep some of the extra profit for a future period. Similarly, Guidry *et al.* (1999) assessed whether managers from US firms engage in EM to boost their compensation. Their results show that managers' compensations are used as a powerful motivation to exploit earnings to increase their short-term bonus pay-outs. Additionally, McAnally *et al.*, (2008) stated that management might also try to maximise the firm's share price to achieve personal gain, specifically, when the rewards might be associated with the firm's performance in the long-term, therefore management could become involved in EM practices to obtain the maximum possible value in their own benefits.

In summary, the compensation of managers is significantly connected to the firm's performance. Thus, management tends to become involved in the manipulation of earnings by adopting different approaches, such as shifting earnings from future periods to the current period to boost their rewards (Kurniawan, 2013).

2.8.2 Debt Covenants Incentive

A further potential mangers' incentive to engage in earnings management is the usage of debt contracts. Debt contracts, or debt covenants, are an agreement that protects capital lenders from managers' actions that may clash with their best interests. These are typically included in contracts of long-term lending and comprise conditional activities such as achieving desirable profits before taxation, interest, depreciation, and amortisation, maintaining minimum financial ratios (e.g., profitability), and maintaining a maximum ratio of debt-to-assets, and restrictions on the level of dividend payment. The violation of these covenants will impose the borrower's high penalty rates and costs, and the loan itself may be recalled. Therefore, it is anticipated that there would be an incentive for managers to participate in earnings management to prevent violation of such debt agreements (Scott, 2009).

Jha (2013) stated that many firms intentionally become involved in EM to change their profit artificially to achieve the required debt agreement conditions, since debt covenants usually contain requisites that restrict management. For instance, these conditions are more likely to undermine management's ability to pay shareholders dividends or prevent them from receiving new debt if they do not reach the required accounting earnings based on the debt agreement. Hence, firms might purposefully make necessary changes in their accounting choices to influence earnings (Kim *et al.*, 2011).

Rodriguez-Perez and van Hemmen (2010) have examined a sample of Spanish firms listed in IBEX on the connection between debt and earnings management. Their findings evidence that marginal increases in lending stimulate managers to involve in EM. Also, Doukakis (2014) stated that firms tend to engage in accrual-based EM to avoid the debt agreement's violation. This argument is consistent with the findings of DeFond and Jiambalvo (1994) who studied 94 firms which violated their debt contracts over the period 1985-1988 from the database of the National Automated Accounting Research (NAARS), and their results show that one year prior to the violation of contracts, there was evidence of discretionary accruals. This indicates that the studied firms managed their earnings through accrual-based EM to avoid the violations, but their attempt was unsuccessful. For instance, the study of Kim *et al.* (2011) shows that firms use real activity EM to prevent the breach of debt covenants, this is consistent with Bartov (1993) research, which indicates that firms use fixed assets sales timing to avoid debt covenants violation.

In summary, lending contracts, such as debt contracts, are considered fundamental factors that motivate firms' managers to engage in the management of earnings to meet the contract requirements.

2.8.3 Political and Governmental Regulatory Incentive

Firms are usually subject to scrutiny and pressures from different external parties, such as regulators, government, employees, auditors, and investors (Watts & Zimmerman, 1978). Thus, political, and governmental

regulatory pressures are also considered incentives to practice EM, since firms can prevent governmental interference by appearing less profitable. Correspondingly, Aljifri (2007) argued that firms might use earnings manipulation in financial statements to minimise government interference. Watts & Zimmerman (1990) declared that executives of political firms probably use accounting methods to reduce the likelihood of any negative political attention and its associated costs, for example, claims to increase wages or lower government intervention. Political pressures may motivate firms to engage in earnings manipulation, such as reporting greater earnings to prevent any public attention to decrease the effect of any adverse political action and lower expected costs (Watts & Zimmerman, 1986).

Kurniawan (2013) proposes that executives of big firms with higher political costs are likely to delay reporting the current period's earnings and deliberately report these earnings in the future periods to reduce earnings during the actual period. The motive behind this action is that profitability increases both consumers and the media's interest, thus maximising the political cost.

Habbash & Alghamdi (2015) stated that managers often consider political costs during earnings reporting, which may cause them to resort to income-decreasing EM to reduce political risk. The recent study of Hsiao *et al.* (2016) discovered that US oil firms were engaged in income-decreasing earnings manipulation to minimise public scrutiny and lower potential political costs. Likewise, Monem (2003) showed that firms' managers in Australia

engage in earnings manipulation through income decreasing to minimise political costs.

Concerning government regulatory incentives, firms that are listed on the stock market are also scrutinised to comply with regulations that are related to accounting figures (Hsiao *et al.*, 2016). The pressures exerted on firms by governmental regulations serve as a stimulus for managers to engage in earnings manipulation to meet their requirements and reduce political exposure risk (Habbash *et al.*, 2015). On this subject, Christensen *et al.* (1999) have investigated the connection between EM and the regulatory standards using 47 insurance firms from 1989 to 1992. Their findings highlighted that managers of these firms are more likely to manipulate earnings to deal with regulatory standards. Moreover, they proposed that meeting regulatory standards and earnings informativeness are major factors that motivate managers to manage earnings. In the same vein, Haw *et al.* (2005) investigated the relationship between EM (income-increasing) and the response to new statutory regulations of 10 percent return on asset (ROA) for Chinese companies that are seeking to offer shares or issue new bonds from 1996 to 1998. Their outcome highlighted that these new regulations created strong incentives for managers to engage in the management of earnings.

To conclude, firms that are facing regulatory or adverse political pressures are highly motivated to engage in earnings manipulation downwards

(income-increasing) or upwards (income-decreasing), intending to comply with, and meet, the regulation to avoid political risk.

2.8.4 Equity Ownership Incentive

The existing literature on earnings management also investigates the relationship between manipulating earnings and incentives of ownership equity. It can be argued that managers' shareholdings help align the interest of management with shareholders (Jensen & Meckling, 1976). According to Teshima & Shuto (2008), when management ownership increases, organisational performance is likely to improve, and managers' opportunistic behaviour is expected to decrease as shareholders and managers' interest will be aligned. Therefore, it can be anticipated that when managers hold less equity in a corporation, managers' incentives may be increased to practise non-value maximising behaviour for self-interest (Warfield *et al.*, 1995). Furthermore, management could pursue a non-value maximising of the accounting process, which can make the manager better off than maximising the business's value at the expense of any other contracting party (Christie & Zimmerman, 1994). To compensate for these investments' adverse effects, managers can then engage in earnings management (Kazemian & Sanusi, 2015).

Chen & Warfield (2005) investigate the relationship between stock ownership and managers' equity incentives arising from stock-based compensation through accrual-based earnings management of US firms over the period 1993-2000. Their results indicate that management with considerable

equity incentives is more likely to disclose earnings that meet or exceed analysts' forecast. The authors also noticed that managers with steadily strong equity incentives are less likely to announce major positive earnings surprises. They argued that managers' wealth is more subtly linked to the future stock's performance, which causes them to maximise their current earnings reserves to prevent future earnings distress, instead of reporting major positive earnings surprises. Finally, they found that equity incentives motivate managers to engage in the management of earnings.

2.8.5 Tax Avoidance Incentive

A further incentive for earnings management identified in the literature is the taxation incentives. Tang & Firth (2011) declared that the tendency to engage in earnings manipulation is attributed to tax policy changes, which encourage management to practise EM to avoid tax payment. According to Adhikari *et al.* (2005), the manipulation of earnings is related to tax policy changes. Tang and Firth (2011) stated that there are three common tactics used by management for tax payment avoidance. These are: (1) to manage taxable income whilst keeping book income constant (e.g., reducing, or smoothing taxes). (2) to manage book income whilst keeping taxable income constant (e.g., increasing earnings or taking a big bath). (3) to manage taxable income and book income in the opposite directions (e.g., reporting higher earnings and lower taxable income).

Lemke & Page (1992) examined the accounting policy choice among U.K firms. Their findings show that U.K firms' managers tend to engage in earnings manipulation through income-decreasing to influence tax liability. Their study proposes that managers have a willingness to reduce reported earnings to minimise tax costs. Correspondingly, Othman & Zeghal's (2006) findings show that earnings manipulation in French firms is predominately related to effective tax rates and contractual debt reasons. Therefore, taxation is another incentive to engage in the management of earnings. Additionally, Adhikari *et al.*, (2005) confirm that tax avoidance is regarded as the most powerful incentive for management to engage in earnings manipulation, because the calculation of tax is based on accounting figures and ratios. Rahman *et al.* (2013) documented that governmental regulation, shareholders' decisions, and tax laws are regarded as the most potent stimuli that drive managers to manipulate earnings and financial statement numbers.

In summary, tax costs are regarded as powerful incentives that motivate managers to engage in earnings manipulation, especially if the managers' goal is to maximise the firm's value and minimise tax costs. As a result, this will encourage managers to manage taxable income with the aim of achieving tax savings through income-decreasing activities.

2.8.6 Seasoned Equity Offerings and Initial Public Offerings Incentives

The literature, furthermore, includes substantial evidence of management of earnings around seasoned equity offerings (SEOs) and initial

public offerings (IPOs). SEO refers to a firm's issuance of new equity that is already publicly traded in the market. As firms tend to issue new shares at the highest possible price, there is a reason to assume that they would engage in earnings management through an income-increasing method that would positively impact their share prices. Yoon & Miller (2002) investigated the seasoned equity offerings (SEOs) and the earnings manipulation of Korean firms over the period 1995- 1997. Their results show that Korean firms engaged in EM through accrual-based activity prior to the offer, especially when the offered size was large, and their operating performance was poor. Likewise, Kim & Park (2005) found evidence that managers in the US SEO firms over the period 1989-2000 participated in opportunistic accounting choices to issue shares at an inflated price. Furthermore, Cohen & Zarowin (2010), in their recent study of US firms over the period 1987-2006, show that the US firms' managers engaged in earnings manipulation through real activity EM prior to the offerings.

Jain & Kini (1994) examined US firms' transition from private to public ownership, and their results show that these firms participated in window-dressing behaviour to enhance the prospects of their appearance. Besides, Friedlan (1994) investigated US IPO firms that transitioned from private to the public between 1981 and 1984 and found managers of these firms engaged in EM through income-increasing discretionary accruals in the year prior to the transition.

2.8.7 Mergers and Acquisitions Incentive

Prior studies (Botsari & Meeks, 2008; Gong *et al.*, 2008; Louis, 2004; and Erickson & Wang, 1999) have evidenced earnings manipulation before mergers and acquisitions. As mergers and acquisitions are important events that result in creation, destruction, and wealth redistribution, then these events may encourage management to practise EM. Yung *et al.* (2013) investigated the relationship between EM and mergers and acquisitions; their results show that earnings, in fact, are handled ahead of stock-for-stock mergers. The reasoning behind this is that the acquiring company tries to maximise its stock's value prior to the merging to accomplish the acquisition at a lower cost.

Erickson & Wang (1999) investigated 119 mergers in the US over the period 19851990 to examine if the acquiring companies increased their stock price before engaging in stock to a stock merger to minimise the cost of buying the target. Their results indicate that acquiring companies manipulated their earnings upwards using accrual-based EM prior to the merging agreement. Furthermore, they reported a positive connection between the merger's size and the extent of income-increasing activities. Accordingly, Louis (2004) examined the relationship between EM and US companies' acquisitions between the years 1992 and 2004. He found strong evidence indicating that the US acquiring companies announced significant positive abnormal accruals in the quarter prior to the stock swap announcement. These results are consistent with Higgins' (2009) findings that provide evidence of the presence of earnings

manipulation through accrual-based activity in Japanese companies over the period 1990-2004 after observing higher discretionary accruals of acquisition. Therefore, managers of acquiring firms have an incentive to manipulate earnings upward before engaging in a stock-for-stock merger to increase the price of shares, thus decreasing the share exchange ratio, which will minimise the overall acquisition cost of acquiring the firm.

2.8.8 Meeting or Exceeding Analysts' Earnings Forecasts Incentive

Due to the capital market considerations, managers have incentives to meet or exceed the consensus analyst forecast (Legoria *et al.*, 2013). Given that the market considers meeting or exceeding earnings forecasts to be a good sign of future profitability, firms that meet or exceed analysts' expectations are rewarded by investors (Biglari *et al.*, 2013). Firms which meet or exceed forecasts earn a higher stock return, according to Bartov *et al.* (2002), than firms that fall short of expectations. Furthermore, firms which report earnings that fall short of expectations are penalised by investors. Skinner & Sloan (2001) present evidence of an asymmetric market reaction to missing the analyst's forecast. In particular, the market penalty for falling one cent short of expectations is greater than the market reward for exceeding expectations by one cent.

Suppose a firm's operating results are insufficient to meet analysts' expectations for a given period. In that case, the manager can either use accrual-based earnings management (AEM) techniques or structure actual transactions

to achieve the desired financial reporting result. Furthermore, the manager may try to steer the analyst's forecast down to a "beatable level," a phenomenon known as "expectations management" (Alarlooq *et al.*, 2014). It is well-known that managers engage in AEM approaches to allow flexibility within accounting regulations to publish earnings numbers that meet or exceed analysts' consensus forecasts. Managers use AEM practices to meet or exceed analysts' expectations to earn better terms of trades by enhancing their own reputations in the managerial labour market or/and enhancing their firm's reputation with external stakeholder groups such as customers, suppliers, and creditors (Li *et al.*, 2009). In a survey of financial executives, Graham *et al.* (2005) discovered that approximately 75 percent of respondents agree that managers' disquiet for their own reputation motivates them to meet the earnings target. According to the same survey, roughly 60 percent of respondents agree that meeting earnings targets is motivated by the firm's reputation with stakeholders. As per the survey, 80 percent of respondents believe that failing to meet earnings targets creates market uncertainty about the firm's prospects, and 60 percent believe that missing an earnings target creates concern that the firm is having problems.

From the above, it is clear that there are many incentives that motivate management to pursue earnings management strategies by following alternative accounting approaches and policies that accomplish their goals and in compliance with the circumstances surrounding them, and that some of these reasons encourage management to increase the earnings achieved, while some

others decrease those earnings. In addition, some other incentives instigate the firm's management to avoid annual earnings fluctuations. In other words, there is a conflict between these incentives that drives firms' managers to counterbalance and match these objectives and motives to achieve their maximum advantage to be consistent with their interest.

2.9 Summary

This chapter reviews the literature relevant to earnings management. It argues that corporate management have several incentives to manipulate accounting figures using different methods and techniques without breaching the accounting rules. Broadly speaking, managers pursue EM through various accounting approaches to achieve their interest while complying with the regulatory circumstances surrounding them. The implication of some of these EM practices is to encourage management to increase reported earnings, while others decrease these earnings.

Chapter Three: Literature Review on Key Audit Matters

3.1 Introduction

This chapter aims to discuss the main aspects of key audit matters disclosure. the argument is organised as follows: Section 3.2 covers KAM definition and its concept. Section 3.3 presents KAM dimensions. Section 3.4 provides a review of empirical research on KAM. Section 3.5 outlines the association between EM and reported KAMs and Section 3.6 represents a summary of the chapter.

3.2 Key Audit Matters Definition and its Concept

KAMs are an essential element of the audit reporting framework designed to enhance the communication of critical audit information to a company's stakeholders. The definition of KAMs varies slightly across jurisdictions and auditing frameworks, but the underlying principle remains consistent. However, the International Standard on Auditing (ISA) defines Key Audit Matters through ISA 701, Para: 8 as those matters which, in the professional judgement of auditors, were most important to the audit of the financial statement in the current period (IAASB, 2015). It is also specified in ISA701 that KAMs are selected from matters communicated with those in charge of governance during the auditing process. Remarkably, the ISA701, Para: 5 expresses that the auditor should take cognisance of sections of higher evaluated material misstatement risks: sections of the financial statement that draw significant auditors' judgment which is also significantly linked to the

management. This involves accounting estimates that have been considered as highly uncertain. Finally, ISA 701 also demands that auditors consider the effects of the major actions that happened during the reporting year. Such considerations may include the nature of the underlying accounting policies related to the matter or its subjectivity and complexity implicated in the selection of an appropriate policy by management compared to other entities operating in the same field. Besides, the auditor must consider the nature and materiality, qualitatively and quantitively, of corrected and uncorrected material misstatements that resulted from fraud or error associated with the matter (Akullo, 2019).

The ISA701 emphasises that KAMs are not an individualised opinion on the reported risks and are not a substitute for adjusting the audit opinion when the adjustment occurs (although the reasons for adjusting the opinion usually follow the KAM concept, they are reported elsewhere in the audit report) or a substitute for the requested disclosures made by the auditee in the financial statements. All KAMs should be connected to the period covered by the audited report and be specific to the audited entity instead of being excessively standardised for many entities in the same sector (IAASB, 2016).

The auditor is expected to exude professional judgement when reporting KAMs, thus considering the scope and extent of disclosures within the financial statement. This is important to determine the presence of risk in the matters investigated if it was difficult to gather appropriate and adequate information,

the questionable nature of the decision required, and, finally, to determine the shortcomings of the internal control system concerning the matter under investigation.

The concept of KAMs was introduced by the International Auditing and Assurance Standards Board (IAASB) in the International Standard on Auditing (ISA) 701: Communicating Key Audit Matters in the Independent Auditor's Report. This standard provides guidance to auditors on identifying, evaluating, and communicating KAMs in the auditor's report. It emphasises the importance of considering the needs of users of financial statements and tailoring the communication of KAMs to provide relevant and meaningful information.

In conclusion, KAMs represent those significant areas that auditors consider critical in the audited financial statements. Their identification, classification, and disclosure in the auditor's report contribute to improved transparency, providing shareholders and other stakeholders with valuable insights into the risks, complexities, and judgments encountered during the auditing procedures.

3.3 Key Audit Matters Dimensions

KAMs offer several dimensions that contribute to their significance. ***Firstly***, they provide a channel for auditors to convey critical audit matters and share insights on high-risk audit areas. By disclosing these matters in KAM section, auditors offer shareholders and other stakeholders a deeper understanding of the auditing process, including the main challenges

encountered and the strategies applied to address them. This dimension of KAMs promotes transparency and increases the overall credibility of financial reporting (IAASB, 2015).

Secondly, KAMs have the potential to enhance the communication between firms' management and auditors. However, managers and auditors can participate in meaningful communication about specific issues identified during the auditing process by identifying and discussing major audit items. This dimension of KAMs fosters collaboration and allows auditors and management to collaborate to improve the overall quality of financial reporting.

Thirdly, KAMs contribute to auditors' overall responsibility. Auditors bear greater accountability for the outcomes of their work when they explicitly state the main issues addressed during the audit. This dimension of KAMs contributes to promote a professionalism culture by holding auditors accountable for their judgements and decisions made during the audit process (AICPA, 2019).

Fourthly and lastly, KAMs enhance the relevance and clarity of the auditor's report. By tradition, audited reports were perceived as dense and lacking meaningful information for financial statement users. Since the implementation of KAMs, auditors have been compelled to produce focused and short narratives that highlight the precise areas that required significant audit attention. This KAMs dimension assists users of financial statements in better understanding the intricacies of financial reporting and the areas that

represent the greatest risks to the accuracy and reliability of the information (IFAC, 2017).

In conclusion, the dimension of KAMs encompassed transparency, accountability, clarity, and improved communication between auditors, management, and stakeholders. The insertion of KAMs in audited reports is a significant step toward enhancing the relevance and value of the auditing process. KAMs help to establish trust and confidence in the financial reporting ecosystem by offering deeper insights into audit engagement and flagging significant areas of judgement and risk.

3.4 Empirical Research on Key Audit Matters

Responding to extensive criticism of the standardised audit report and the lack of transparency of its content, the International Auditing and Assurance Standards Board (IAASB) launched a project in 2009 called "Auditor Reporting" with the objective of appropriately improving the relevance of the audit report and its communicative value. The initiative was prompted due to four research papers that were considered the mainstay and the backbone for exposing the existing reporting issues and their drawbacks. The first research is the one that was conducted by Porter *et al.* (2009) using a survey in New Zealand and the United Kingdom. They concluded that the audited report content does not have a substantial effect on the messages understood by relatively well-informed users of the financial statements, in particular with regard to the nature of the audit process, the respective statutory auditors' roles

and managers, and the risk of investments in the reporting entity. Overall, they concluded that stakeholders do not comprehend the auditing process and the responsibilities of statutory auditors.

The second research was conducted by Mock *et al.*, (2009) who have gathered information from focused groups of 69 participants from different groups of stakeholders including accountants, statutory auditors, non-professional investors, financial analysts, and bank lenders. Their study identified several specific problems relating to users' expectations of the degree of assurance offered by unqualified audit reports and the effect on users' decision-making processes of such reports. These problems include the degree of assurance that needs to be explicitly communicated to stakeholders, disclosure of certain aspects of materiality, judgements made by the statutory auditors about the presumption of a going concern, audit reports on internal controls, and the assessment of fraud risk by the statutory auditors.

The third relevant study was conducted by Gold *et al.* (2009), who examined the existence of an audit expectation gap. Furthermore, they analysed the difference between the perception of experienced statutory auditors and financial statements' users regarding the audited report's reliability. Their findings indicate that an audit expectation gap is persistent based on the ISA700 (revised version) with its new wording for the audited report. The authors concluded that the auditors' comprehensive explanations against managers' responsibilities and the mission and scope of the audit with the revised ISA700

and found that the audited reports are not successful in reducing the auditing expectation gap and may negatively impact certain cases.

The fourth and final study is the one that was conducted by Asare & Wright (2009) in which they investigated audit report's objectives and limitations perception of the "macro level," and the degree to which there is congruence in the interpretation of the technical language used in the audit report by the stakeholders of the "micro-level". The authors found three different types of gaps across both "macro" and "micro" levels. The first gap in the assurance obtained from the auditor lies in evaluating the management of the firms, the soundness of firms' investments, and whether the firms are likely to achieve its strategic objectives. The second gap is the interpretation of the technical language "test basis" used in the audited report, where most of the "micro-level" differences were of this type of gap, suggesting that a particular group of users require a targeted education rather than improvements in standards. The third gap is related to the net income percentage that should be used for materiality by the statutory auditors. Overall, their results indicate that a much higher percentage of users showed a possible misunderstanding of materiality's effects on the audit effort.

The act of the IAASB can be considered as a starting point in the revised version of the International Standards on Auditing (ISA) relating to the content and the structure of the audited report. After perennial drafting, issuing proposals, analysing numerous comments and preparation, the IAASB finally

concluded that restructuring the audit report is the adequate way to narrow the communication and information gap, and, therefore, the issuance of the new auditing standard the so-called ISA 701 Key Audit Matters (KAM) relating to auditor reporting. The intention of communicating KAMs in the new paragraph in the independent audit report was to provide greater transparency on audit performance to enhance its communication value and give insights to the firm's stakeholders of the most significant matters in the auditors' professional judgement. In the same vein, IAASB (2015) emphasised that the introduction of KAMs will guide the attention of the users of financial statements towards the matters that included significant judgements by management and, therefore, required auditors' attention, leading to potentially enhanced disclosure of these matters by management. Vanstraelen *et al.* (2012) concluded that the gap in audit expectations can be minimised by requiring auditors to discuss significant accounting practices and policies, forecasts, estimates, and client evaluations.

The most prominent improvement in the auditor's report under revised auditor reporting requirements is the communication of key audit matters (KAM), which provides users of the audited financial statements with more entity-specific and audit-specific information about the audit that has been conducted by auditors (Reintjes, 2015). At the same time, other researchers prove that users are increasingly interested in obtaining explicit information of greater substance far beyond the institutionalised audit report published by the independent auditor (Ishak & Nor, 2018). They conclude that such information

will help them survey the entity's financial situation and performance and evaluate the audit quality. Feedback from PWC (2015), (one of the big four auditing firms) on the revised and new auditing standards anticipated some value-adding insights, showing that, without a doubt, the presentation of KAMs as per ISA 701 is the biggest improvement in the new standards, because the KAMs section reveals insights into certain risks that were of the most significant in the auditors' judgement.

Despite these potential intended benefits of KAMs, many questions and criticisms were raised after the first year of the KAMs implementations, including the decision regarding how many and which matters should be included in the audited report and which matters should be classified as KAMs. According to ISA 701, the statutory auditors shall determine matters that require auditors' significant attention in performing audits, from those matters communicated with those charged with governance. Cordos & Fülöpa (2015) pointed out the statutory auditors need to apply their professional judgements to communicate matters that are classified as KAMs. The new standard does not determine the required number of key audits matters but provides guidelines to determine whether a matter constitutes a KAM. There is relatively insufficient guidance on the number of KAMs that should be disclosed to the audited report. In fact, the number of and which KAMs to report by auditors is a matter of their professional judgement. According to Sirois *et al.* (2018), the number of KAMs to be disclosed in the report might be affected by the

complexity of the entity, its size, the nature of its activities, the environment where it operates, and the facts and circumstances of the auditing engagement. Cordos & Fülöpa (2015) suggest that from two KAMs to seven KAMs should be disclosed in the audited report. However, Sirois *et al.* (2018) claim that the disclosure of multiple KAMs will add complexity and dilute the message of the statutory auditor, concluding that each KAM signal becomes less prominent as the number of KAMs increases, and users would have less cognitive resources available to process them, thereby reducing their signalling impact. Finally, it can be assumed that KAMs' communication would grow over time, although with a steep learning curve in the first few reporting periods (Sirois *et al.*, 2018).

At the point when the supply of information exceeds the report user's capacity to process it, the user confronts problems in understanding the relevant information. Considering everything, the audit report's users may have challenges and confusion about where to start reviewing the disclosed information due to its volume. They may miss out on the pertinent information and concentrate on immaterial information. Undoubtedly, financial report users may opt to react to information excess by either downplaying information quantity or filtering only highly needed information and/or, in some cases, a total withdrawal. Users maintain a strategic distance from excessive information supply by keeping information to a minimum to conform to their constrained subjective ability (IAB, 2011). However, over the years, various associations and scholars have repeatedly overloaded financial statements and

the multifaceted nature of the revised independent audit report (Kirkpatrick, 2009). The volume of disclosed information is regarded as the most generous supporter of this issue, and this is because, in terms of decision-making, users are restricted because of their limited cognitive capacity to process and assimilate all information given to them through the expanded audit report (Klueber *et al.*, 2018). However, Simnett & Huggins (2014) argued that the expanded audit report is too complicated and mind-boggling and excessively standardised in terms of readability. Overall, it is too heavy to digest because of cognitive overload, regardless of whether the audited report is increasingly itemised. The inclusion of additional information in the form of KAMs can also affect the view of users of the audit, to be precise it will affect their perception of audit quality, and the accuracy and similarity of assurance degree amid financial statement components. Church & Shefchik (2011) concluded that the audited report was essentially symbolic rather than informative.

Peyper (2017) also highlighted problems after the first year of the standard adoption, stating that it is challenging and time-consuming to communicate with managers and those charged with governance (TCWG) in order to find common ground on which risks were of most relevance to be classified as KAMs. In addition, the same author stated that auditors have difficulty articulating KAMs in the report in a comprehensible way. Similarly, negotiations with the management and Board Audit Committee on the content of KAMs before finalising the auditor's report can also trigger delays in issuing

the audit report. In fact, IAASB (2012) demonstrates that the timing of the publication of audited annual reports may be affected by the more iterative process before completion of the audit. Cade & Hodge (2014) disseminated the impact of the correspondence transparency on managers after extending the audit report with alumni of a prominent US university as participants. Their findings discovered that additional disclosure in the audit report on accounting estimate subtleness diminishes management's willingness to share private information with their auditors. Consequently, this results in counter-productive consequences as opposed to the expected addition of value.

Other researchers, however, have criticised KAMs' implementation, arguing that it may result in additional review costs due to extra review efforts in the form of added procedures to respond to higher commitment and notoriety risks associated with KAMs disclosure. Besides, it may also create extra quality control processes and increase consultations at the highest level of engagement team with the audit committee and senior management (IAASB, 2012). KAMs may also affect the review's productivity, creating further review slack. The reality is that the efforts required to determine, get ready for language correspondence, and archive KAMs are likely to occur in the last stages of the review (PCAOB 2013).

Few studies were conducted on the effect of KAM or CAM (Critical Audit Matters) disclosure in the audited report and its potential consequences (see table 21 in appendix for summary table of KAM studies). Studies such as

(Altawalbeh & Alhajaya, 2020; Velte & Issa, 2019; Almulla & Bradbury, 2018; Gutierrez *et al.,* 2018; Sirois *et al.,* 2018; Lennox *et al.,* 2018; Bédard *et al.,* 2018; Carver and Trinkle, 2017; Köhler *et al.*, 2016; Boolaky & Quick, 2016; and Christensen *et al.*, 2014) have examined the effects of KAMs disclosure on the market reaction and investors' behaviour. The study of Christensen *et al.* (2014) was among the first to show that the disclosure of KAMs has a potential influence on the financial statement users' decision. The authors experimented with graduates from business schools in the US, representing non-professional investors. Their findings demonstrated that investors receiving a KAM-like paragraph about management estimates' uncertainty were more likely to avoid investing in the firm than investors receiving a standard audited report "information effect" or investors receiving similar information through managers' footnotes "source credibility effect". Nevertheless, their results also showed that this KAM effect was minimised by the inclusion of a resolution paragraph containing auditors' insurance for critical matters.

Similarly, Sirois *et al.*, (2018), in their experimental study where they asked graduates from an accounting department in Canada assuming the position of the bank loan officer to investigate KAMs' influence on the user's attention to information within financial statements, using the innovative technology of eye-tracking. The authors found that KAMs have an attention-directing impact, such that KAMs maximise user attention to KAM-related information in the disclosure of financial statements. In addition, they

concluded that the inclusion of KAMs contributes to a reduction in the amount of attention paid to sections of the financial statements that KAMs did not cover. They suggested that KAMs can help investors navigate the financial report efficiently and concentrate their attention on relevant issues. The study of Altawalbeh & Alhajaya (2020) examined the investors' reaction towards KAMs disclosure in Jordanian listed public shareholding companies using event study testing. Their results revealed that KAMs disclosure has significantly influenced the investors' decision and their findings suggested that the implemented KAMs have informational value to investors. These results contradict Bédard *et al.'s* (2014) findings, which revealed that such information disclosure was far more emblematic than informative.

In the same line, Köhler *et al.* (2016) analysed the communicative value of the extended auditors' report with KAMs between professional and non-professional investors for a sample consisting primarily of German users. Their findings show that professional investors' investment assessment of a company's economic situation is affected by variations in KAMs disclosure. Conversely, Boolaky & Quick (2016) undertook another German study to investigate the influence of KAM disclosure on the expectation of bank directors of the quality of financial reporting and credit approval decisions. However, no effect of KAM disclosure has been identified. Meanwhile, Carver & Trinkle (2017) investigated the impact of KAM disclosure on non-professional investors' perception of audited report readability, their evaluations

of management credibility, and their valuation judgements. Their findings indicate that the disclosure of KAMs results in a less readable report that did not lead to incremental changes in investors' valuation judgments (neither directly nor through its effect on readability). Nevertheless, they observed a negative effect of KAM disclosure on the perception of management's credibility of investors when earnings merely exceed the analysts' forecast.

Lennox *et al.* (2018) analysed the expanded reporting model in the U.K using long-window and short-window tests; they examined market reactions following the disclosure of risks in the audited report to evaluate whether investors consider the new disclosure as informative. Their findings indicate that the new disclosures were reliable and consistent, but that they lack incremental information content, since most of the risks were already informed to users before those risks were disclosed by the auditors. Furthermore, Gutierrez *et al.* (2018) performed archival research to investigate the implications of additional information disclosed in the audit report on investors' reaction, audit quality, and audit fees. Their results showed no evidence for an incremental short market reaction using a difference-to-difference research design. Their findings regarding investors' reactions were consistent with the conclusions by Lennox *et al.* (2018), that KAM disclosure does not affect investors' behaviour. In contrast, Almulla & Bradbury's (2018) findings show that KAMs are related to investors' uncertainty. Surprisingly, investigating the first year of KAM implementation in New Zealand, they perceive that investors

do already evaluate the risks in the year before the KAM disclosure was implemented.

On the other hand, some scholars investigated whether the KAM disclosure requirement influences auditors' behaviour. Reid *et al.* (2019) reported that KAM disclosure might affect the audit because management may adopt a more appropriate and acceptable accounting behaviour because of the auditor disclosure threat. Additionally, auditors can feel more accountable and responsible for their work and conduct a better job as a result. Despite this, several studies provide initial evidence of the connection between the expanded audit report and audit-related outcomes. For example, several studies (Asbahr & Ruhnke, 2019; Almulla & Bradbury, 2018; Bédard *et al.*, 2018; Gutierrez *et al.*, 2018; Li *et al.*, 2018; Ratzinger-Sakel and Theis, 2018; Reid *et al.*, 2019) focused on auditors' response towards the effect of disclosed KAMs on audit fees, audit quality and auditor judgement. The study of Reid *et al.* (2019) was one of the first studies to investigate the association between the disclosure of KAMs and audit-related outcomes. Their study focuses on the U.K, where their findings show that the new reporting model results in a substantial improvement in financial reporting quality without detecting a significant increase in auditing costs (neither audit fees nor audit delays). Although these results may be influenced by other elements of the new reporting model, the study offers initial evidence of the beneficial effects of KAMs on audit quality.

Conversely, Gutierrez *et al.*, (2018) also focused on the U.K context; their findings were slightly different regarding audit-related outcomes. The authors found no significant connection between the expanded auditors' report and audit quality or audit fees.

Simultaneously, the study of Almulla & Bradbury (2018) provides initial evidence from New Zealand offering inconsistent perceptions. Their findings show no incremental effect of the new reporting model on either audit delay, audit fees, or absolute abnormal accruals. On the contrary, Li *et al.* (2018) stated that the implementation of the new audit reporting standards had been followed by an enhancement in the audit quality (measured by a reduction in absolute abnormal accruals) and a substantial increase in audit fees, indicating that while the new audit reporting model results in improved audit quality, this benefit comes at a cost. Bédard *et al.*, (2018) concentrated more on the disclosure of Justification of Assessment (JOA) which is the same as KAM in the French setting. Their findings showed negative efficiency effects, for example, increased audit fees and longer audit report lag in the first year of the disclosure, but not in the subsequent years. Remarkably, in subsequent years JOAs' disclosure has a negative association with financial reporting quality, which was measured by discretionary accruals, although not in the first year of the disclosure. Nevertheless, these results are inconsistent with the findings reported by Gutierrez *et al.* (2018), and Reid *et al.* (2019).

Although the above studies provide significant preliminary archival shreds of evidence, additional experimental studies in Germany (Asbahr & Ruhnke 2019; Ratzinger-Sakel & Theis 2018) examined auditors' responses to the anticipated KAMs disclosure. The results of both studies showed that there is less professional scepticism among auditors who are asked to consider KAMs than when they do not consider them, suggesting adverse effects of KAMs on the performance of the auditor's judgement.

In the course of improving the reporting requirement's disclosure, the auditor's legal responsibility was a frequently debated controversy, particularly in the United States (Tysiac, 2013). According to this argument, many scholars believe that reporting KAMs may result in an increase in jurors' auditor liability judgments when auditors have failed to detect a material misstatement. On that ground, several studies (e.g., Asbahr & Ruhnke, 2019; Ratzinger-Sakel & Theis, 2019; Kachelmeier *et al.*, 2019; Vinson *et al.*, 2019; Brasel *et al.*, 2016; Gimbar *et al.*, 2016a; Brown *et al.*, 2016; Kachelmeier *et al.*, 2015; Backof *et al.*, 2014) examined the relationship between the disclosure of KAM or CAM on the auditors' liability and auditors' judgement. Concerning the preliminary behavioural evidence regarding auditor liability, studies shows that the KAM section on subsequent litigation either minimises or does not affect auditor liability (Gimbar *et al.*, 2016b). Other studies, however, found that, under certain circumstances, KAM disclosure will increase auditor liability.

For instance, Gimbar *et al.* (2016a) argue that, as a function of accounting standard precision, the effect of a KAM on auditor liability actually varies. Studies (e.g., Kachelmeier *et al.* 2018; Brasel *et al.* 2016) found that KAMs disclosure can actually minimise auditors' liability. Conversely, the study of Brown *et al.* (2016) shows that disclosing KAMs does not affect auditors' liability, suggesting that the concern about the legal risks of the disclosure of KAMs is probably unwarranted. Relatedly, the findings of Backof *et al.*, (2018) show that disclosing KAMs in the audited report increases jurors' negligence assessment, but this effect can be mitigated by explaining the concept of reasonable assurance. Also, Vinson *et al.* (2019), in their experiment regarding long-term effects of disclosing KAMs, found that eliminating a KAM that is reported for many years, compared to a KAM that is reported for one year, results in higher negligence assessments due to higher expectations of the auditor's foreseeability of the misstatement, which in turn increases auditors' liability. Studies that have examined the effect of a KAM section on auditor judgment indicate that the new reporting requirement may be at the cost of the auditor's performance (Ratzinger-Sakel & Theis, 2019). Accordingly, both Asbahr & Ruhnke (2019) and Ratzinger-Sakel & Theis (2019) essentially argue that KAMs disclosure will serve as a moral licence for an auditor to acquiesce to the client's desired accounting treatment.

Finally, another stream of behavioural literature (e.g., Fuller et al. 2021; Reid et al. 2019; Bentley et al. 2018; Klueber et al. 2018; Cade and Hodge 2014)

examines how the anticipated KAMs' disclosure impacts management reporting practices. For example, Fuller et al. (2021) investigate the impact of the KAM disclosure on managers' behaviour. Their findings reveal that managers respond to KAM disclosure by increasing their own disclosure of the matter, and the extent of this impact is directly influenced by the strength of the audit committee's oversight. The same authors also highlight that managers react with higher disclosures as auditors raise the level of detail exhibited in their KAM reporting. Furthermore, when auditors disclose specific and detailed KAMs, managers are more likely to disclose quantitative information that helps financial statement users assess the risk associated with critical accounting estimates. Correspondingly, Gold et al. (2020), in their experimental studies concerning the impact of KAM disclosure on reporting quality, find mixed results, e.g., less aggressive financial accounting behaviour. Reid et al. (2019) also find that the new reporting regime significantly improves financial reporting quality (as measured by absolute abnormal accruals, the tendency to just meet or beat analyst forecasts, and a significant increase in earnings response coefficients) without detecting a significant higher audit cost.

Likewise, Bentley et al. (2018) examined how the expectation of KAMs-like auditor disclosure influences management decision-making. Their findings show that when managers anticipate a KAM disclosure, they are more likely to reflect on it and be less likely to hedge, which may encourage risk-increasing activities. This impact is mitigated when a disclaimer associated with

the scope of the auditor's assurance role is included in the KAM report. Klueber et al. (2018) conducted an experimental study by asking management about their financial reporting choices and investigating whether earnings management activities are reduced due to the anticipated KAM disclosure. Their findings show that KAMs' disclosure can potentially reduce earnings management in the financial statement if the KAM section contains firm-specific information. This suggests that if the information precision of KAM is high, the inclusion of the KAM section in the audited report will serve as a beneficial mechanism for improving management financial reporting quality. Interestingly, their findings suggest that management discloses less private information about their accounting choices with auditors when told that auditors will report those choices publicly, a potentially unfavourable effect of the KAM regime. Auditors' anticipated disclosure of audit procedures should not have such adverse effects. In contrast, Bédard et al. (2019) find that in subsequent years but not the first year of the disclosure of JOAs in the French setting, which, as discussed, are similar to KAMs, is negatively associated with financial reporting quality (as proxied by discretionary accruals). Li et al. (2018) also reported that the introduction of the new and revised auditor reporting standards was followed by an improvement in the audit quality (as proxied by a reduction in absolute abnormal accruals).

In conclusion, the above studies indicate that KAM disclosure can have an impact not only on shareholders and auditors but also on management

reporting and decisions, particularly with regards to earnings management. However, it should be noted that most of the existing studies investigating the relationship between EM and KAM disclosure are experimental in nature, which limits their ability to empirically test whether auditors' disclosure with KAMs actually affects earnings management. On the other hand, the few archival studies conducted so far have mainly focused on accrual-based earnings management, using discretionary accruals to examine the empirical relationship between EM and KAMs, while neglecting other forms of EM such as real activity EM.

This study aims to address this gap by evaluating the impact of KAMs on different types of earnings management practices, specifically accrual-based and real activity EM, in the U.K., utilising the quantile regression method. Furthermore, the studies mentioned earlier on KAMs, and EM have significantly contributed to the accounting and auditing literature by providing theoretical foundations for understanding the complexities of financial reporting quality and the role and effectiveness of auditing practices. They have made noteworthy theoretical contributions by drawing upon various theories such as agency, accountability, economic, and stakeholder theories to comprehend the underlying mechanisms and implications.

By applying these and other relevant theoretical frameworks, researchers can further enhance their understanding of KAMs and EM, thus contributing to the accounting and auditing literature. Consequently, this

research endeavour will expand upon the existing literature by incorporating additional theoretical perspectives into the current study, thereby offering valuable insights into the motivations, mechanisms, and consequences associated with these phenomena.

Furthermore, the existing literature examining the effect of KAMs on financial reporting quality has primarily focused on assessing the quantity of KAMs (measured by factors such as the number, length, and readability of KAMs) independently, as well as their impact on accrual-based earnings management (EM). Despite an extensive search of the literature, no study has analysed the effect of KAM quality on EM practices, considering the specificity of KAM risk. Early evidence from U.K. audit reports suggests that disclosed KAMs vary in terms of word count and the level of detail provided regarding the associated risks (Financial Reporting Council [FRC], 2016). These findings align with concerns expressed by investors and regulators that KAM communication might eventually lead to standardised disclosure, thereby reducing the informational value of KAMs.

Hence, the content specificity of KAMs becomes crucial, and the lack of evidence regarding the determinants of this specificity motivates the present study to contribute to the literature by examining the effect of KAM quality on EM practices using two variables: account-level risk KAMs and entity-level risk KAMs. This study argues that describing the risk of misstatement in a precise and specific manner enhances the quality of disclosure and increases

the informative value of published accounts. Therefore, the language used by reporting auditors to describe material misstatements in the financial report is utilised as a proxy for the quality of KAMs.

To increase the sensitivity of the archival research, this study will also incorporate other accounting variables. Additionally, upon reviewing the literature on earnings management and KAMs, it was discovered that no study had investigated the impact of both the quantity and quality of KAMs on EM. Thus, this research aims to provide a better understanding of the relationship between KAMs and accounting practices, such as earnings management. However, the interaction between the quantity and quality of KAMs in relation to earnings management has yet to be extensively explored. To address this gap, this study adopts a comprehensive approach that simultaneously considers the number of KAMs (quantity) and their quality (measured by entity-level and account-level risks) to examine their joint impact on EM practices. Furthermore, by incorporating measures of both accrual-based and real-based earnings management activities, the current study offers a more nuanced understanding of the relationships among KAM quantity, quality, and earnings management.

Addressing this research gap would not only enhance the academic literature on auditing and financial reporting but also yield practical implications. The findings could assist auditors, standard setters, and regulators in developing more effective approaches to KAM disclosure and evaluation.

Moreover, the insights gained from this research could inform companies in improving their financial reporting practices and mitigating earnings management activities.

3.5 The Association Between Key Audit Matters and Earnings Management

The finalised ISA701 was the most important proposal and a significant move towards improving the audit report's informative value. ISA 701 requires auditors to disclose KAMs in the audit report of listed firms through the KAMs section. The KAM paragraph includes information on the higher material misstatement risks or significant risks with significant auditors' judgements concerning complicated accounting estimates, including the effects of major transactions or events and policies. According to IAASB, the preparation of financial statements involves many estimates and judgements. The chairman of IAASB, Arnold Schilder, stated that presently, hard numbers play a smaller role, but words and assessments play a bigger role. For example, the process of valuation currently needs much more explanation which requires assumptions. Depending on the used assumptions, the valuation might come with different possible outcomes, which will be translated into one single figure that will be included in the profit and loss statement or the balance sheet. However, such a figure does not give information on the estimates' uncertainties and the other possible outcomes for this item (Backhuijs & Roelofsen, 2014). This uncertainty is an extra attribute of the recorded amount in the financial statement (Camfferman & Eeftink, 2006), due to the importance of assumptions

and estimations. Backhuijs & Roelofsen (2014) labelled the section on estimations' uncertainties and critical policies as the most important financial statement elements.

The disclosure of information regarding estimation uncertainties and critical accounting policies are regulated by IAS 1 (Para: Presentation of Financial Statements). According to IAS 1.125, firms are required to disclose information about major estimation uncertainty sources and the assumptions that firms make in the future at the end of the period of reporting, which are likely to contribute to a material adjustment of the carrying amounts of liabilities and assets affected in the next financial year. Furthermore, IAS 1.127 explains what type of estimations one should take into consideration, such as subjectivity or complexity of judgements. In addition, IAS 1.122 also indicates that an entity shall report the judgements in the summary of important accounting policies or other notices, other than those concerning estimates taken by management in the process of implementing the entity's accounting policies and having the most significant effect on the recognised amounts in the financial statements.

In the audit, the judgement and the audit of estimates occupy a significant role. According to PWC (2016), of all existing auditing standards, half is related to professional judgement. For example, Standard 540 precisely discusses the audit of estimates, and Standard 260 mentions explicitly the basis for financial statements and estimates as issues to be conveyed by the auditor

to those who are charged with governance. Therefore, in many cases, it can also be assumed that the most significant accounting policies and estimates will be included in the section of key audit matters. Additionally, a confrontation between the critical accounting policies and estimates reported by the firm and the KAMs reported by the auditor would also provide the users of the financial statements with relevant information (Brouwer *et al.*, 2016). The same authors stated that KAM usually corresponds with accounting policies and estimates in the notes. In their study, they found a total of 62 of KAMs reported are associated with issues that the firm also recognises as being significant policies and/or estimates. This result is consistent with the fact that a large portion of the reported KAMs is related to balance sheet items, since significant accounting policies/estimations are also based mainly on the processing and valuation of balance sheet items (Brouwer *et al.*, 2016).

Carcello's (2012) survey found that investors' most desirable improvement included auditors' management estimates and judgments based on the proposed ISA 701. Thus, significant accounting estimates may be an important area of emphasis, since they reveal some uncertainty about the company's revenues, valuations, liabilities, receivables, inventories, tangible and intangibles assets impairments, provisions, and business combinations, etc. A post-adoption survey by the U.K (FRC) amid 150 audited reports in the U.K demonstrated that the five most predominant KAMs were goodwill, asset impairment, taxation matters, misrepresentation in revenue recognition, and

controls. In addition, the publication performed by Deloitte (2017) involves the analysis of the expanded audit report among 50 firms listed on the Swiss Market Index. Their findings show that 62% of KAMs reported are associated with intangible assets and goodwill, and a significant proportion is related to revenue recognition, tax matters, and provisions (Deloitte, 2017, p.4). Such risks require complex accounting estimates and significant auditors' judgement. These estimates also have a potential impact on the company's cash flows, which is a crucial criterion for users' decision-making in evaluating the company's future performance (Gutierrez *et al.*, 2018).

Velte & Issa (2019) declared that the disclosure of KAMs is associated with management decisions, including earnings management. This is because top management can select among various accounting policies and decide on estimates of accounts, which might affect the risk of material misstatements (Mahmoud, 2020). Managers can also obfuscate accounting information disclosure about account estimations, e.g., manipulating investors' perceptions of an organisation's performance (Teoh & Zang, 2014). Additionally, Jabbar (2018) admitted that managers exploit some flexibilities permitted by accounting policies and particular estimates activities to engage in earnings' management to influence the results of the financial statement. For example, managers might engage in earnings' management by exploiting loan loss provision (LLP) for expected loan impairment, assuming that if there is a sign of impairment, managers make an estimate for the loss based on the outstanding

cash flows, which gives managers the discretion to manipulate the LLP recognised in the statement of income (Loew & Mollenhauer, 2019). The same authors stated that incorporating information in the financial statement about assets' actual value, rather than its historical cost, is always desirable compared to the information gap. This assumes that assets in illiquid markets are exposed to management manipulation since there is no observable market price, and the models used for assets' valuation (e.g., market to market model) increases earnings' manipulation risk, which will directly influence the earnings' quality.

Santos *et al.* (2020) performed a study analysing the relationship between KAMs and earnings' management. Their findings show that most types of KAMs include estimates and/or risks associated with earnings' management practices, whether by an entity's accruals or operational activities. They found that the most predominant KAMs types were revenue recognition, contingencies, and assets recovery, which together accounted for 66% of KAMs reported. The authors also found a positive and significant connection between the number of KAMs reported and both accruals and discretionary revenues. In contrast, they found a negative and significant association between the number of KAMs reported and earnings' management proxied by operations through discretionary expenses. The study of Gold *et al.*, (2020) examined the impact of KAMs on financial reporting behaviour; their results show that, in the presence of goodwill-related KAM, managers' tendency to opt for an aggressive financial reporting decision (choosing a higher goodwill amount) is

significantly reduced compared to the absence of this KAM. This effect persists even in the case when the KAM description is disclosed with non-firm-specific content. Thus, their results indicate that the inclusion of KAMs serves as a beneficial tool for improving financial reporting quality by lessening aggressive managerial behaviour. In his study, Mahmoud (2020) found that KAMs are likely to increase real earnings' management activities to some level, as limited to the abnormal cash flow from operations proxy. Thus, his study demonstrates that increasing real earnings' management activities are a possible unintentional consequence of KAMs' disclosure.

However, management's motivation to practice earnings' management through allowed accounting policies and personal estimates is to earn some personal interest through direct or indirect rewards because these rewards are granted based on the firm's earnings performance (Toumeh & Yahya, 2017). Management discretion over the stated earnings and its impact on managers' compensation leads to a potential problem of agency (Bukit & Iskandar, 2009). According to the agency theory, auditors are appointed as an external party to resolve the agency conflict between managers and investors and reduce the degree of information asymmetry. Therefore, the auditors' role is to communicate KAM in the audit report to improve the communicative value and promote transparency which, in turn, will reduce the conflict of interest and limit the managerial discretion in accounting estimates (Lambert *et al.*, 2012). In addition, according to the theory of stakeholders, external auditors aim to

increase stakeholders' confidence in the financial statement through audit reporting, which is part of the audit quality that characterises auditors' ability to detect material misstatement, as audit quality cannot be perceived by stakeholders. Thus, the audited report with KAM is the key information mechanism to lower the expectation gap concerning the purpose and the scope of the audit, because stakeholders will possess more auditing information that will help them in their decision-making (Velte & Issa, 2019).

Moreover, the classification of significant matters as KAMs depends on auditors' judgement due to its subjectivity, such as managers' judgement of significant accounting estimates. Furthermore, auditors should disclose those significant matters and justify how they arrive at their conclusions, and this is built upon accountability theory. This means that auditors should assume responsibility and accountability for the disclosure of KAMs (Reid *et al.*, 2019). Therefore, it is probable that auditors' judgements could lead to errors in determination, which hold auditors accountable for any future costs that those errors impose on the users of the financial statement and their clients (Prasad & Chand, 2017). This might potentially increase auditors' litigation exposure and reputation loss risk as they assume accountability for disclosing new information (Mao *et al.*, 2019). Auditors' exposure to risks of legal actions and damaged reputation would potentially affect managers' accounting choices, discretionary decisions, and accounting estimates' disclosure. In this case, auditors will maximise their effort to detect more material misstatements and

disclose them through the KAM section (Carcello & Li, 2013). Thus, this study suggests that more strict liability regimes will steer to higher audit quality, which will influence the quantity and the quality of KAMs reported.

Auditors are not only exposed to risks of litigation and reputation but also are subject to pressures exerted by the institutional environment. Auditing regulations and standards are examples of coercive pressures that auditors must comply with, to maintain their organisational legitimacy. Based on legitimacy theory, auditors need to gain credibility through legitimacy by producing high-quality auditing to avoid audit failure (Dye, 1993). In the case of audit failure, audit firms are exposed to increased liability. According to this argument and the theory of institutional and legitimacy, this study suggests that institutional pressures will oblige the auditors to conduct higher quality audits which, in turn, will affect the quantity and the quality of KAMs disclosed in the audit report.

In summary, the new audit report with KAMs has attention directing impact on the financial reports (Bédard & Bera, 2018). Nevertheless, the reported KAMs' content is merely based on auditors' judgment after the discussion with the board audit committee and management. Thus, it is prone to bias due to external pressures which could include institutional pressures, investors and other stakeholder pressures, legitimacy pressures, and scarce resources pressures. It is also vulnerable to bias due to the human factor involved, which may include lack of appropriate auditing expertise, poor knowledge of business auditing, and personal relationship between auditee and

auditor. As mentioned earlier, all these drivers could impact the quantity and quality of the content of KAMs, which will affect management reporting behaviour.

3.6 Summary

This chapter provides an overview of the Key Audit Matters' literature in terms of its definition and dimensions. This chapter focuses on the benefits and costs of KAMs' disclosure from prior literature, as well as the impact on shareholders and other stakeholders. It also discusses the relationship between KAMs and EM, showing that KAMs contribute to transparency, accountability, clarity, and improved communication between auditors, management, and stakeholders. Their inclusion in audited reports is a significant step toward enhancing the relevance and value of the audit process. By offering deeper insights into the audit engagement and highlighting areas of judgment and risk, KAM help establish trust and confidence in the financial reporting ecosystem.

Chapter four: Theories and Hypotheses Development

4.1 Introduction

The current chapter is dedicated to presenting the theoretical framework that forms the basis of this study, as well as developing hypotheses that have emerged in the literature to explain the relationship between EM, KAM, and selected control variables. The argument is structured as follows: Section 4.2 establishes the theoretical foundations and their corresponding predictions by drawing upon various theories. Section 4.3 formulates the relevant hypotheses, and Section 4.4 provides a summary of the key points that have emerged from the chapter's discussion.

4.2 Theoretical Framework

Brandell (2008) advocates that using multiple theoretical perspectives would clarify, connect, and convey research results. Consequently, the argument in this study is underpinned by a combination of several perspectives on the impact of KAM disclosure on earnings management. These include (i) agency theory, (ii) institutional theory, (iii) legitimacy theory and (iv) stakeholder's theory. In the following subsections, In the following subsections, the basic aspects of each theory and how each framework relates to the main objectives of this study are briefly described.

4.2.1 The Theory of Agency

Agency theory is one of the most prominent theoretical perspectives utilised in business and management research (Payne & Petrenko; 2019). The

agency theory primarily focused on the relationship between principal and agent, which could occur between several stakeholders, including various management levels, investors, employers, and government (Wallace, 1980). However, Jensen & Meckling (1976) stated that the principal-agent relationship mostly exists between company owners (shareholders) and managers. Agency theory tries to explain a loss in wealth and value that happens whenever one party (the agent) acts for another (the principal). This involves delegating the authority to make decisions to the agent through a series of contractual agreements, such as the situation where shareholders (the principal) hire managers (the agent) to operate their firms (Eisenhardt, 1989). For instance, the theorem provides a means of forming a contract between shareholders, as principal, and managers, as the agent, that will contribute to the agent's optimum performance on behalf of the principal. When corporates are operated by managers on behalf of their owners, the principal-agent relationship arises due to the control and the separation of the ownership (Fama & Jensen, 1983). This relationship's underlying premise is the presumption that both managers and owners are opportunistically inclined and intend to maximise their self-interest. In this case, the management possesses more information about the business as compared to its owners, as these shareholders are not involved in the firm's daily activities. Therefore, the agent has the advantage of information over the principals. In other words, there is an imbalance in information between principal and agent that causes a gap between managers and owners,

thus creating the situation known as asymmetry information (Watts & Zimmerman, 1979).

According to the agency perspective, the fact that managers have access to the vastly more comprehensive management accounting information available within an organisation gives rise to two major agency problems that can be categorised into a moral hazard and adverse selection problems (Dobson, 1993). Moral hazard arises when managers, as an agent, who are involved in the day-to-day running of the business, have incentives as the means to conceal a firm's real financial situation by misrepresenting the actual results reported to deceive the shareholders, as principals, regarding the health of the firm (Godfrey *et al.*, 2003). That means that managers intend to hamper shareholders' ability to observe or infer the extent of effort exerted by management (Gottlieb & Moreira, 2014). In such a scenario, there is an anticipated temptation that mangers may get away with behaviour that contravenes their employment contract, since shareholders are incapable of assessing the firm's real picture. In contrast, an adverse selection problem arises when unevenness of information distribution between agents and principals occurs. As a result of this asymmetrical information, shareholders may be able to observe the effort expanded by managers. Still, they cannot determine whether the managers' action is optimal and carried out under a contractual agreement (Dobson, 1993). For instance, managers may take a costly step to distort the firm's reported performance to achieve personal gains or reduce

losses, influence taxes, or meet or beat the financial analysts' expectations. In contrast, shareholders consider the possibility of these manipulations but fail to completely infer the value of the real reported earnings due to the ambiguity of the management's ability to manipulate earnings (Man & Wong, 2013).

When managers have private access to superior information compared to shareholders, they may choose to take advantage of this situation to misrepresent work carried out regarding outcomes by adopting various choices and estimates that shareholders may not be familiar with (Lin *et al.*, 2016). Due to the presumption of agency conflict between the agent and principal, managers engage in earnings management deceitfully to reach their own goals rather than optimising the firm's value. The existence of asymmetrical information between managers and owners is a fundamental condition for earnings' management (Trueman & Titman, 1988). Consequently, managers release financial reports that do not represent the firm's exact economic situation, and investors make non-optional investment decisions (Davidson *et al.*, 2004). It has been increasingly argued that managers' ability to exercise discretion is likely to impose costs on accounting information's users (Lasdi, 2013). Hence, earnings' management could be a sort of agency cost caused by asymmetrical information (Sun *et al.*, 2010; Zahra *et al.*, 2005). Subsequently, firms involving earnings management practices will bear a greater risk of low credibility in their reports. Their shareholders may lack confidence in their managers, leading to concerns about the transparency and reliability of

information (Ragan, 1998). Such firms might find it difficult to attract potential investors and/or to maintain a listing on the stock market, or they might even be sued by the public on the grounds of their unreliable reports. A simple agency model suggests that principals lack reasons to trust their agents due to information asymmetries and self-interest. Thus, principals will seek solutions to resolve agency problems by adopting mechanisms to align agents' interests with principals and minimise the potential for information asymmetries and opportunistic behaviour (ICAEW, 2005). For instance, the agency problems and opportunistic behaviour prompt owners/shareholders, who are after all the capital providers for the business, to seek some assurance through corporate governance that managers are following their commitment with the contractual agreement. Corporate governance is most often referred to as "how to ensure the managers follow the interests of shareholders" (Vives, 2000). The primary goal of corporate governance is to promote fairness, create a transparent relationship between different stakeholders' behaviour, and reduce the agencies' costs underpinning the various principal agent relationships (Owusu, 2021, Lemmon & Lins, 2003). Kanagaretnam *et al.* (2007) argued that firms with a higher corporate governance level of control have better earnings' quality and lower information asymmetry. Correspondingly, Becht *et al.* (2003) advocated that the control of corporate market encourages managers to keep high performance to prevent getting replaced. In contrast, Claessens & Yurtoglu (2013) affirmed that the lack of an efficient corporate governance mechanism

triggers opportunistic managerial behaviour. Accordingly, Lehmann & Vismara (2020) stated that, due to the lack of transparency, the agency problems caused by moral hazard and adverse selection could lead to corporate governance dysfunction within an organisation.

Shareholders can also elect the board of directors as one of the primary protectors of corporate governance to act on their behalf (León, 2011). Typically, shareholders would exercise control of corporate affairs through the board of directors, and the board, in turn, will monitor top management to ratify major decisions (Molano, 2011; Olin, 2005). The board of directors is regarded as the most distinctive and significant internal tool for monitoring (Shleifer & Vishny 1997), whose duties derive from the corporation's legal structure, including evaluating managers' performance and reporting management performance to shareholders (Klipper, 1998). Gul *et al.* (2013) considered internal governance structures as the board of directors enhance transparency and accuracy of the financial report and constrain earnings management. In other words, the board of directors are instrumental in how well a firm fulfils its obligations towards financial reporting (ACCA, 2017). Directors are agents of their organisations and, thus, have specific duties and responsibilities to the firm, as a legal entity, and not to individual shareholders or any other third party outside of the firm (Okike, 2019). In the UK, the reporting of financial accounts is a legal requirement for companies. However, the directors of firms that fail to disclose or misrepresent their accounts are criminalised, unlike in the US,

where directors are held legally responsible for the accounts their company disclosed (Solomon, 2020). Directors make themselves accountable to the shareholders through the annual report. The annual report is important in relation to corporate governance because it is the communication channel between directors and shareholders (Okike, 2019). Agency theory assumes that the board of directors have the statutory powers needed to restrain managers from engaging in earnings' mismanagement and reducing the agency cost caused by information asymmetry (Saona *et al.*, 2020).

On the other hand, for shareholders to access relevant information regarding managers' efforts, they should either rely on the information obtained from managers themselves or incur monitoring costs (Dinga, 2011). An example of monitoring costs would include the audit function, which is an agency expense incurred to ensure that principals have confidence in their agents who are appointed to act in their best interest (Chen, 2010). Audit function in the form of external audit, internal audit and audit committees serve as mechanisms that assure financial reporting quality and improve corporate transparency (Solomon, 2020). Rodgers *et al.* (2019) claimed that audit function plays the most significant role in corporate monitoring by providing a financial statement with an independent and professional assurance service. External auditors play the monitoring role on behalf of funds' providers and, thus, can be regarded as a critical participant in the governance process (Cohen *et al.*, 2004). Lin & Liu (2009) stated that an external audit is a crucial

component of corporate governance's mosaic since it attests the management's accounting information credibility. According to Wallace (1980), the value of auditing lies in the fact that it enhances transparency through the quality of financial information that companies convey to investors and other stakeholders. Previous literature in accounting (Gomraiz *et al.*, 2013; Chung *et al.*, 2013; Biddle *et al.*, 2009) uses financial reporting quality as a critical monitoring mechanism for firms' management, which curbs the opportunistic management behaviour and, thus, improves firms' transparency. Mechanisms of transparency in the form of auditing, accounting, financial reporting, and corporate disclosures have taken their position in corporate governance research (Owusu & Weir, 2016; Healy & Palepu, 2001; Bushman & Smith, 2001). However, agency theorem identifies a variety of governance mechanisms aimed at realigning managers' and shareholders' interests in order to reduce agency costs (Owusu & Weir, 2018). But a current perspective of many experts is that corporate governance mechanisms might not be sufficient to resolve the whole problems of transparency. Nevertheless, they have been considered from an agency theory perspective through which transparency in the form of information disclosures to shareholders is a central mechanism to align the interest of both shareholders and management (Brennan & Solomon, 2008).

Inefficiencies in the information market called for more sound regulations in relation to information disclosure to promote transparency to

safeguard against agency cost (Khan, 2018). Agency theorists propose that the better flow of quality and timely information means that shareholders are more knowledgeable about the company's activities and financial situation. Such should compel management to be more accountable to company shareholders, which, in turn, reduces agency costs (Ribstein, 2005). Therefore, some sort of support in the form of mandatory disclosure was needed from relevant regulatory bodies and the legal authorities. Since 1999, the Organisation for Economic Co-operation and Development (OECD), in combination with other standard setters, has continually produced policy documents and codes of best practice to improve corporate transparency (Richero & Ferrigno, 2016).

One of the most recent corporate governance reforms introduced by the Financial Reporting Council (FRC) in the UK to improve transparency is the provision of Key Audit Matters (KAM) in the financial statement. The KAM initiative aims to enhance the communicative value of auditor engagements and promote transparency by ensuring that all stakeholders have access to timely and relevant disclosures regarding company risk and management strategies. The KAM section of financial reports provides shareholders with valuable information about the key risks and uncertainties faced by the audited entity, enabling them to better evaluate management's performance and decision-making, thus aligning the interests of principals and agents. Auditors, by disclosing KAMs, act as independent intermediaries, providing assurance to shareholders and other stakeholders regarding the reliability of financial

statements. The communication of KAMs increases the transparency and credibility of the audit process, reducing information asymmetry and agency costs. Shareholders can rely on the audit report, including the disclosed KAMs, to monitor management's actions and hold them accountable for their stewardship of the company.

Moreover, the specificity of KAMs is relevant as it serves as a mechanism to address agency problems. By providing specific KAMs, auditors enhance transparency and accountability, thereby reducing the agency costs associated with information asymmetry. Specific KAMs enable shareholders to better evaluate management's performance and decision-making, leading to improved corporate governance. Reporting KAMs in the financial statements serves as an additional monitoring mechanism that helps mitigate conflicts of interest by addressing two anomalies caused by information asymmetry: moral hazard and adverse selection. This, in turn, helps curb opportunistic managerial behaviour. Therefore, according to agency theory, including specific information through the KAM section is hypothesised to contribute to the reduction of earnings malpractices.

4.2.2 Institutional Theory

John Meyer and Brian Rowan introduced the institutional theory in the late 1970s to emphasise how the governance arrangements and interconnection between organisations are influenced by their societal and institutional environment (Daddi *et al.*, 2016). Institutional theory is concerned with

working on an economic phenomenon within its entire surrounding environment that includes political, social, religious, cultural, civilisation and technological factors. According to this theorem, organisations are subjected to an institutional framework to which they must adapt to survive (Nell *et al.*, 2015; Hearn, 2015; Süß &Kleine,2008; Björkman *et al.*, 2007; DiMaggio & Powell, 1991). The institutional theory considers such behavioural adaptations as a response to pressures to obtain legitimacy under the umbrella of rationality (Suddaby *et al.*, 2013). This process of homogenisation of organisational practices can be defined as institutional "isomorphism," which can be referred to, according to DiMaggio & Powell (1983), as "a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions".

DiMaggio & Powell (1983) suggested that organisations achieve institutional isomorphism via three forms of pressures: memetic, normative, and coercive. Under memetic isomorphism, organisations adopt other organisations' practices that are perceived as successful in dealing with uncertainty about their actions, via the imitation or reproduction of organisational structures, routines, and activities to maintain market competitiveness without questioning their claims and legitimacy (Oliver, 1991). Under the normative isomorphism, organisations need to conform and adhere to the external norms and rules and adopt changes related to the professional environment to achieve stability and organisational legitimacy

(Deephouse & Suchman, 2008). Finally, under the coercive isomorphism, the pressure is exerted on organisations by institutional constituents, and mostly from institutions that affect the organisation's survival (Kholeif, 2010). Regulations and guidelines developed by the government and other institutional bodies (e.g., London Stock Exchange (LSE) and professional bodies) are examples of strong and direct coercive pressures, whereas incentives to comply with guidelines could be seen as soft and direct pressures (Klecun *et al.*, 2019). Cultural expectation and capital markets can also be viewed as an indirect form of coercive pressure. Other coercive isomorphisms include those exerted by funds' providers where coercive pressures increase as the degree of need for funds increases (Riahi & Khoufi, 2019). Taken together these isomorphisms have the potential to homogenise company practices and shape their goals and directions (DiMaggio & Powell, 1983). Several studies showed that mimetic, coercive, and normative isomorphisms typically steer organisations to be convergent in their behaviours (Brandau *et al.*, 2013; Huo *et al.*, 2013; Ahlstrom & Bruton, 2010; Björkman, 2008; Farndale & Paauwe, 2007).

Various aspects of institutional theory offer the background for research on the accounting professional convention and regulations (Kitiwong & Sarapaivanich, 2020; Degeorge *et al.*, 2013; Francis & Wang, 2008; Hope *et al.*, 2008; Suddaby *et al.*, 2007, Cooper & Robson, 2006). Judge *et al.* (2010) suggested that institutional theory is a practical framework for predicting the adoption of new standards, since accounting information must be perceived as

legitimate and trusted by its users. According to institutional theory, corporations are bound to rules and regulations, such as reporting requirements, which they must comply with. Failure to comply with these requirements would open organisations and managers up to liabilities and penalties (Kury, 2007). It is important to note that corporations do not work in isolation, and they operate in interaction with their external environment. Therefore, corporate governance's role is to create harmony with the environmental expectations that make governance mechanisms fulfil ritualistic roles that help gain social acceptance and safeguard legitimacy (Cohen *et al.*, 2007).

From an institutional perspective, firms engaging in greater transparency through information disclosure practices required by accounting standards will strategically improve the congruence of corporate goals and norms with those of society, promoting sustainable corporate operations by enhancing corporate reputation (Ntim, 2013). For example, firms' decision to comply with the newly instituted auditing standard ISA701 (Key Audit Matters) to promote transparency might have been motivated by coercive pressures exerted by powerful interested parties (e.g., standards setters) as they directly influence organisations' mission statements. The implementation of the Key Audit Matters regulation is driven primarily by the legal pressures exerted on external auditors and those charged with corporate governance by the authorities that act either in an independent manner or under the auspices of the government (IFAC, 2017).

Audit firms in the UK are bound to follow ISA standards and guidelines and are subject to sanctions imposed by the Financial Reporting Council (FRC) for non-compliance. The exertion of such coercive pressure by authoritative bodies exposes auditors to more outstanding litigation and reputational risks. However, auditing firms have long-established brand names and reputation and would be expected to maintain this status by delivering better quality audits and issuing more accurate reports. Besides, auditees will tend to choose an auditing firm with an established reputation (Oxera, 2006). The nature of these incentives has become an important aspect of the coercive isomorphism literature of the factors influencing auditor behaviour and independence (DYE, 1993). According to Pinto & Morais (2019), the provision of a KAM section incentivises auditors to review firms' activities more thoroughly to maintain their reputation and reduce their liability to lawsuits by investors and other users of accounting statements. Therefore, this study under the institutional theory (coercive isomorphism) hypothesises that the extent of audit firm's exposure to reputational and litigation risks should oblige auditors to report accurate information and promote transparency through the reporting of key auditing matters (KAM) as required by the ISA701 convention. Such transparency in financial reporting should act as a check on opportunistic managerial behaviour (Mahmoud, 2020).

4.2.3 Legitimacy Theory

The most widely adopted theoretical perspective in the social and environmental accounting literature to explain corporate incentives for reporting is the theory of legitimacy (Deegan, 2002). The idea of legitimacy is originated from the notion of organisational legitimacy. The theorists Dowling & Pfeffer (1975, p. 122) have labelled legitimacy theory as a position or status that exists when the value of an entity's system is consistent with the value system of the larger societal system in which the entity is operating. The existence of disparities, actual or potential, between the two values systems will cause a threat to the entity's legitimacy. Also, legitimation is the process which leads to an organisation being perceived as legitimate (Deegan 2006). The central assumption of legitimacy theory is complying with the entity's social contract, that allows the recognition of its objectives. Any breach of the social contract will have adverse effects on the organisation's ongoing survival (Islam & Deegan, 2010). According to Suchman (1995), the theory of legitimacy is the instrument that manages stakeholders' perception of the needs for attaining or regaining the organisational legitimacy that offers organisations the right to perform their actions in consensus with the stakeholders' interest. Contrarywise, organisations have no right to exist unless their values are perceived as congruent with society. Therefore, society allows organisations to continue operations to the extent that they meet its expectations (Magness, 2006).

Since the aim of accounting is providing the society with information in the form of disclosures that help in their decision-making (e.g., satisfy social interest), the legitimacy theory has been integrated into the research of accounting as a means of explaining why, when, what and how certain items have been addressed by corporate management in their communication with the users of financial statements (Magness, 2006). Organisations and their accounting systems are operating in a political, social, and economic context. Thus, their continuing existence depends on achieving and maintaining social approval such as legitimacy (Lindblom, 1993; Richardson, 1987). Given that the theorem is based on societal perception, corporate management is obliged to reveal details about their activities through information disclosure seeking to be perceived as legitimate (Cormier & Gordon, 2001). According to O'Donovan (2002), corporate disclosures are believed to be significant attributes in losing or attaining the corporation's legitimacy. Similarly, Archel *et al.* (2009) emphasised that the corporation's legitimacy is influenced by disseminating information to the stakeholders through the annual report. Therefore, the annual report is the most recognised and accepted corporate communication apparatus that has been identified as a vital source of legitimation (O'Donovan, 2002; Dyball, 1998). By its nature, the annual report cannot be assumed to be a neutral device. Its content is principally determined by top management and reflects management values and beliefs (D'Aveni & MacMillan, 1990; Staw *et al.*, 1983). However, society's perception of

corporate information disclosed in the annual report changed dramatically after the recent corporate scandals that took a toll on users' confidence and destabilised their faith in the financial statement. As a result, corporate stakeholders have called for a greater transparency level in corporate reporting (Bernardi & LaCross,2005). Corporations act in response to such pressures by adopting practices and structures that are considered socially acceptable and legitimate, thus producing homogeneous structures and practices (Powell & DiMaggio, 1991; Scott, 1987). Corporate management attempts to safeguard its legitimacy by ensuring that their activities are perceived as functioning within the norms and bounds of their respective societies to transmit to outside parties as legitimate (Deegan and Unerman, 2011). The demonstration of more extensive commitments by corporations is perceived as motivated by a strategic motivation to ensure the corporation's survival, rather than by a desire to embrace morally responsible behaviours (Deegan & Blomquist, 2006). The legitimacy theory claims that corporate management needs to respond to changing social expectations by complying with their social contract if they are deemed legitimate. Otherwise, the news media can be remarkably effective at disseminating information to society of corporate performance aspects that are unknown. The revelation or exposure of the undisclosed information by the media, both business and regular press, would, in turn, create legitimacy problems for corporations (Castelo & Lima, 2006). Consequently,

corporation's management will seek to minimise and/or eliminate the gap of legitimacy by disclosing information (Zeghal & Ahmed, 1990).

The main assumption of legitimacy theory in the accounting field is that corporations comply with the norms and bounds, such as accounting standards and disclosure requirements, to fulfil the organisation's social contract. For instance, as part of restoring society's confidence and promoting transparency in the UK, the Financial Reporting Council has implemented the so-called ISA 701 (Key Audit Matters) to be adopted by listed companies (FTSE350). This accounting standard obliges auditors and those charged with governance to work together to communicate through the KAM section the areas of higher assessed risk of material misstatement, or significant risks identified per ISAs standards. The principal justification for the inclusion of the KAM section would produce useful and accurate information for the financial statement users. Therefore, this study hypothesises that, in the presence of the ISA701, the corporation management will attempt to achieve legitimacy by adhering to the accounting standards and appearing to be doing the right things which, in turn, will evoke a more critical and thorough evaluation of their accounting choices and practices, which could ultimately result in better financial reporting quality.

4.2.4 The Theory of Stakeholders

The stakeholder theory was developed in the middle of the twentieth century by

Freeman (1984). This theory underlines the interconnected relationships between a corporation and its stakeholders, unlike other theories such as stewardship and agency theory that showed their narrowness. It only concentrates on the shareholders, considering shareholders the only source that would facilitate the firm for further investigation (Afza & Nazir, 2014). Freeman (1984) encouraged stakeholders' engagement other than shareholders who influence or are influenced by organisations. According to Solomon (2020), stakeholders hold a "stake" rather than a simple "share" in the firm. The stakeholder relationship has been portrayed as an exchange, where stakeholder groups provide contributions to corporations and expect their own interests to be met through inducements (March & Simon, 1958). Crane & Matten (2010) considered stakeholders as groups with claims, rights, ownership, and interests in a corporation and its activities. Freeman (1984) argued that a company should not only be responsible for creating value for its shareholders but should also provide gains for the other interested parties in the society in which they operate. According to Firdaus & Fitriasari (2019), the stakeholder theory has both managerial and ethical perspectives. The managerial perspective seeks to explain when corporate management wishes to achieve certain stakeholders' expectations (specifically those with power, e.g., funds providers). On the other hand, the ethical perspective contends that stakeholders, including employees, customers, suppliers, government, and professional regulatory bodies etc.,

should be treated fairly by the organisation when reporting on the firm's activities in order to ensure their survival and success in the long-term.

The stakeholder theory provides a much better explanation of corporate governance's role in improving the balance between the interests of its varied stakeholders in such a way that each stakeholder achieves some degree of satisfaction (Abrams, 1951). Moreover, Wang & Dewhirst (1992) emphasised that the board of directors could not neglect their responsibility to protect stakeholders' interests. Similarly, Hillman *et al.* (2001) stressed that an efficient audit committee strengthens corporate governance practices that eventually work well for all corporate stakeholders' benefits. Dey (2008) explained that corporate governance mechanisms, including audit committee and board of directors, are positively related to the stakeholder's welfare and firm's performance. It is expected that corporate management should provide all types of stakeholders with full and timely disclosure of relevant information. For instance, regulatory authorities partially rely on organisations' disclosure to confirm compliance with regulations, and the stakeholders rely on comprehensive and timely financial information provided by corporate management to make investment decisions (Epstein & Rejc, 2006). According to Firdaus & Fitriasari (2019), firms see accurate and timely information as a critical element that corporate management could use to gain a diverse group of stakeholders' support and approval. Therefore, corporate management should

be incentivised to use their discretion to increase the level of the information reported to avoid the risk of being rejected by society (Sun *et al.*, 2010).

Current accounting principles perceive stakeholders as mere users of financial statements. As a result, researchers of earnings' management primarily concentrate on the techniques and the level to which corporate management deceive stakeholders via their earnings' management activities (Loy, 2016). Since earnings' management activities harm the collective interests of stakeholders (Prior *et al.*, 2008), an independent third party is called in, such as external auditor, to attest to the validity of financial reports and help promote corporate governance (Gantz, 2013). Thus, the external auditor role exists as the concept of a public watchdog. According to Hill & Jones (1992), external auditors act as agents for shareholders and other stakeholders. Therefore, the involvement of external auditors is expected to increase stakeholders' confidence in the financial statement. DeAngelo (1981) claimed that the auditing report is part of audit quality because it represents the auditors' ability to perceive material misstatements and report any contractual agreement breach. However, the audited report's informational value is mostly affected by the gap between stakeholders' expectations regarding the audit's purpose and scope (Liggio, 1974). The expectation gap is defined as the difference between what society thinks auditors do and what society would like auditors to do (ACCA, 2019). According to Ruhnke & Schmidt (2014), there are several possible sources for the expectation gap, such as the complicated nature of an

audit function; retrospective evaluation of auditors' performance; conflicting roles; the time lag in responding to changing expectations, etc. Gold *et al.* (2012) explained the phenomenon of expectation gap by noting that users of financial statements often expect an absolute external audits quality level as well as an assurance of the absence of financial distress or fraud. It follows that stakeholders lack awareness about audit risk, which is the risk of issuing an unqualified auditing opinion by the external auditor with considerable financial reporting errors. Since external auditors are considered economic agents, a lower level of audit reporting would result in lower quality and performance incentives. As stakeholders cannot perceive auditing quality, the audited reports are the key information instrument (Velte & Issa, 2019). However, international regulations on disclosure reveal that previous audit reporting standards were not practical for consumers, suppliers, and the general environment to make proper decisions because they do not include firm-specific information about the auditing procedures and results (Bédard *et al.*, 2016).

To improve the audited report's communicative value and lessen the expectation gap between corporations and their financial statement users, auditing regulators have implemented a new reform called ISA701 whereby auditors must disclose key audit matters (KAMs) in the financial report under the KAM section. The audited reports with KAM disclosure will ensure that audit and financial reporting quality conform to stakeholders' interests (Ittonen, 2012). Accordingly, Njenga (2019) argues that the KAMs introduction in the

audited report would provide a diverse range of stakeholders with more insights into the organisation and, thus, stakeholders would be better informed about corporate management activities. Previous research emphasises that transparent and precise audit reporting will lower the expectation gap and boost stakeholder confidence (Gimbar *et al.*, 2016; Gold *et al.*, 2012).

Therefore, the stakeholder theory hypothesises that such a reform in auditing (e.g., KAM disclosure) would contribute to reducing all major sources of expectation gap and information asymmetry between stakeholders and corporate management which, in turn, will limit managerial discretion (Fuller, 2015).

4.3 The Development of Hypotheses

Following the preceding section on the theoretical framework, this section develops the hypotheses that have evolved in the financial accounting literature to explain the association between EM as a dependent variable and the selected regressors, included KAM (see Figure 2). The argument here is organised under two main sections, namely (i) variables of primary interest and (ii) control variables.

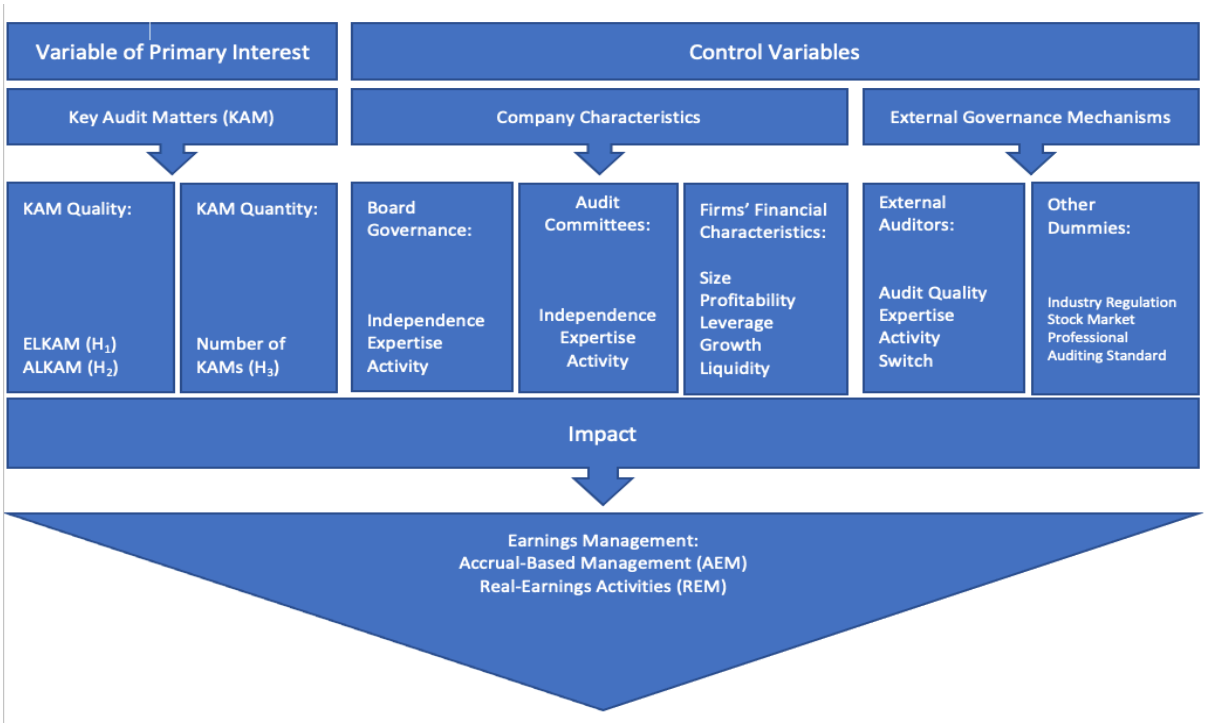


Figure 2 shows the study's hypotheses developed to examine the impact of key audit matters, company characteristics and external governance characteristics on earnings management.

4.3.1 Variables of Primary Interest

The study's main purpose is to assess managerial reporting choices in the presence of KAM disclosure. Specifically, this study will investigate the impact of KAM on two measures of earnings management: (i) accrual-based earnings management and (ii) real activities earnings management. Therefore, the variable of primary interest are the KAMs outlined in the audit report.

5.3.1.1 Key Audit Matters

As discussed in the literature review Chapter 2 (Section 2.6), managers have a wide range of incentives to manipulate accounts in their favour by taking advantage of the information imbalance that exists between them and the users of the financial statement. For instance, managers can use different EM methods that are more convenient for them without breaching the accounting rules, such as accrual-based EM, real activity EM and classification shifting. These EM practices allow managers to make accounting and operational choices that would influence the level of operations and/or the manipulation of accounting numbers. For example, managers can manipulate information and present it so that losses are minimised to increase the current profit or raise losses when a profit target is achieved and/or even smoothing the results by decreasing the financial index's volatility (Scott, 2011). Consequently, managers release financial reports that do not represent the firm's exact economic situation, which in turn will deceive the shareholders about the firm's real financial situation, and, therefore, investors make non-optional investment decisions (Davidson *et al.*, 2004).

To safeguard shareholders and other stakeholders against such opportunistic behaviour and agency problems caused by information asymmetry, agency theorists propose better quality and timely information flow to guarantee that shareholders are more knowledgeable about the company's activities and financial situation. Subsequently, shareholders could form an

accurate picture of the firm's performance through financial reporting quality (Liou & Yang, 2008). Therefore, regulators called for more sound regulations concerning information disclosure to promote transparency (Khan, 2018). Despite that, many initiatives concerning the disclosure of financial and non-financial information have been proposed in recent years, with the common goal of improving the quality of the information provided (Lee, 2017; Kim *et al.*, 2012) and making this information more useful to a broader range of financial statement users (Christensen *et al.*, 2017; Leuz & Wysocki, 2016). Audit standards setters share these aspirations to benefit not only stakeholders but also society in general. Thus, the recently introduced KAM (ISA701) by the accounting standard setter aims to enhance auditor engagement's communicative value and promote greater transparency by ensuring that all stakeholders have frequent and relevant information on corporate risk and management techniques. This additional information on the company's current and prospective conditions was supposed to narrow the expectation gap in the agency theory framework, among other things.

Since it was introduced, the KAM section has provided new information regarding material misstatement risks to financial reports' users. This study proposes that the quantity and quality of reported KAMs is another monitoring tool to mitigate the conflict of interest between managers and stakeholders by combating information asymmetry, which, in turn, will curb the opportunistic managerial behaviour. Thus, to assess whether the disclosed KAMs affect

managerial reporting options the primary question of the research is developed as follows:

"How does the inclusion of key audit matters in the financial statement impact on the management reporting behaviour?".

Key Audit Matters Quality

To assess the impact of KAM quality on earnings management, this study follows Sierra-Garcia *et al.* (2019) and Lennox *et al.* (2018) and distinguishes two variables for the specificity of KAM risk. The first variable is proxied by account-level risk KAMs (ALKAM) and represents the number of key audit matters arising from accounting-level risks, while the second is approximated by entity-level-risk KAMs (ELKAM) and captured by the number of key audit matters relating to firms' risk as a whole. Since financial markets rely heavily on the specific information disclosed in the audit report (Trpeska *et al.*, 2017), this study argues that the description of risk misstatement in a precise and specific form improves disclosure quality (and hence informative value of published accounts). Hence, the specificity of language used by reporting auditors to describe the material misstatement in the financial report is used to approximate the quality of KAM. Nonetheless, much literature on the quality of textual disclosure (e.g., Hope *et al.*, 2016; Campbell *et al.*, 2014; Kravet & Muslu, 2013) focused on investors' decision-making and found that high specificity in risk disclosure generates greater investor responses because they are better able to comprehend, assess, and verify disclosures with

greater precision. For example, Campbell *et al.* (2014) demonstrated that specificity in risk disclosure is incrementally valuable for investors when evaluating firms' accounting choices. This finding is consistent with information-processing research that suggests individuals place greater emphasis on information that reduces cognitive effort and, as a result, facilitates the absorption of information into decision-making (Bozanic *et al.*, 2018). According to Hirshleifer & Teoh (2003), individuals make trade-offs when processing information and, as a result, are frequently unlikely to encode information that does not immediately capture their attention and/or takes significant processing. Nevertheless, while the above studies focus on the effect of specificity in risk disclosure on investors' reactions, there is no empirical evidence on how the level of information precision in risk disclosure, such as KAM specificity, affects financial reporting behaviour.

Drawing on the textual disclosure literature findings, the researcher argues that the quality of audit process is influenced not only by the auditor's style of reporting and technique used but also by the nature and complexity of the disclosed KAMs themselves (Gambetta *et al.*, 2022). However, early evidence from audit reports in the United Kingdom indicates that disclosed KAMs differ in terms of the quality of KAM disclosed (FRC, 2016). Therefore, Sierra-García *et al.* (2019) and Lennox *et al.* (2018) identified those KAM characteristics that differentiate risks at the accounting versus entity levels, showing that the information value of KAM depends on whether the issues

disclosed concern the accounting-level-risk or entity-level-risk. Their findings demonstrated that entity-level-KAMs are not precise and typically disclosed in a more difficult-to-read format than accounting-level-KAMs audit processes, given that entity-level-risk factors are a more challenging area to audit than accounting-level-risk factors, presumably due to the greater inherent complexity of the former. Conversely, the auditing process performed to address accounting-level-KAMs is typically more standardised since it concerns specific General Accepted Accounting Practices (GAAP) on the valuation, recognition, and disclosure of the accounting item in question. These risk factors are more likely to be reported in generic or standardised terms, which investors might find confusing. Hence, they should be related to high earnings management values due to their indistinctness (i.e., opaqueness). This implies that auditors are less likely to use generic language when describing the performance of a company in the financial report. Consequently, it is expected that such specificity in KAMs would be associated with lower levels of earnings management due to the clarity and informational value they provide. Additionally, stakeholder theory suggests that transparent and precise audit reporting can help bridge the expectation gap and enhance stakeholder confidence (Gimbar et al., 2016). As KAMs introduction in the audited report would provide a diverse range of stakeholders with more insights into the organisation and, thus, stakeholders would be better informed about corporate management activities Moreover, agency theory posits that including specific

information through the KAM section can address agency problems and potentially reduce earnings malpractices.

Therefore, this study argues that the type of KAM addressed in the audited report and the manner in which it is described determine the level of specificity. Based on this discussion, the following two hypotheses are proposed:

H_1: "There is a negative relationship between the level of earnings management and the KAMs relating to account-level-risks".

H_2: "There is a negative relationship between the level of earnings management and the KAMs relating to entity-level-risks".

Key Audit Matters Quantity

The second independent variable of primary interest in the study is the quantity of key audit matters (KAM) disclosed. To assess the impact of KAM quantity on EM, this study follows previous studies (e.g., Sierra-Garcia *et al.*, 2019; Lennox *et al.*, 2018 and Bédard *et al.*, 2014) and uses the variable of NB_KAM, which represents the total number of KAMs disclosed in the KAM section in the firm's audit report for each year. However, the introduced reform ISA701, does not specify the number of key audit matters (KAM) to be disclosed in the audited report due to differences in the business and the industrial environments, as well as disparities in the size and complexity of the audited firm. Therefore, auditors should make adequate and reasonable

disclosure based on the auditees' actual situation and their judgement capacity (Li, 2020). In general, the larger the audited entity's size and the more complicated the business, the more KAMs are disclosed, and vice versa. On the other hand, the notion of moderation should be emphasised in the disclosure. If the quantity of KAMs disclosed is too large, it will not reflect the "most significant matters." If the quantity is insufficient, the new standards will not be able to play their role in improving the transparency of audit work and the relevancy of audited report content. According to Li (2020), high-quality auditing has a deterrent impact, making audited firms fearful and, so, limiting EM behaviour. This is because KAM disclosure strengthens the communication with the management layer, causing the management layer to pay more attention to whether the financial statement is in accordance with prevailing accounting standards.

Also, from an agency theory perspective, a higher quantity of KAMs may serve as a mechanism to mitigate agency problems and reduce earnings management. When auditors disclose a greater number of KAMs, it enhances transparency and accountability, reducing information asymmetry between principals (shareholders) and agents (management). Shareholders can gain more insight into the key risks and uncertainties faced by the audited entity, enabling them to better evaluate management's performance and decision-making. This increased transparency and monitoring can help align the interests of principals and agents, making it more difficult for management to engage in

earnings management practices that may not be in the best interests of shareholders. Besides institutional theory also plays a role in the relationship between KAM quantity and earnings management. The institutional environment, including regulatory bodies, professional standards, and industry norms, can influence the expectations and requirements for KAM disclosure. Higher institutional pressures for transparent and accountable financial reporting may lead auditors to disclose a greater quantity of KAMs. By conforming to institutional expectations and norms, auditors demonstrate their legitimacy and credibility within the profession. This institutional pressure, in turn, may act as a deterrent to earnings management as auditors are more likely to scrutinize and report on key areas of risk and potential manipulation. Therefore, both agency theory and institutional theory suggest that a higher quantity of KAMs can contribute to deterring earnings management. The increased transparency, accountability, and alignment of interests between principals and agents provided by a greater number of KAMs make it more difficult for management to manipulate financial statements for personal gain. Additionally, institutional pressures for disclosure and transparency further reinforce the deterrent effect by setting expectations and norms that discourage earnings management practices. Based on the argument here, the following hypothesis is proposed:

H_3: "There is a negative relationship between the level of EM and the total number of disclosed KAMs".

4.3.2 Control variables

The main purpose of this study is to empirically assess the effect of key audit matters on earnings management. Additionally, this research has employed various control variables that might impact financial reporting quality. These variables are classified into two main categories. The *first* category is company characteristics, and the *second* category is external governance mechanisms, and their explanation, as follows:

4.3.2.1 Company Characteristics

The control variables related to the category of company characteristics used in the current study involves (i) board governance characteristics (BC), (ii) audit committee characteristics (ACC) and (iii) firm's financial characteristics (FC).

(i) Board Governance Characteristics

This study will investigate the impact on managerial reporting behaviour of those corporate governance characteristics recommended by the Sarbanes-Oxley Act (2002)[2] . The principles of the corporate governance code (Section B) stipulated that the board of directors should have appropriate skills (expertise), independence and knowledge of the industry achieved through active involvement in a wide range of activities. This should enable directors to

[2] The Sarbanes-Oxley Act (2002) not only imposes the independence of members of corporate governance but also stipulates that the members should have far-reaching experience (expertise) in the field of finance and must be effective members.

discharge their respective responsibilities and duties effectively. Therefore, this study concentrates on three main board characteristics: independence, expertise, and activity.

Board Member Independence

The board of directors is regarded as an important attribute of corporate governance because it is responsible for monitoring the integrity and the quality of the firm's financial reports and controlling managerial actions such as earnings manipulation, thereby lowering agency costs (Liao *et al.*, 2018, Garner *et al.*, 2017), as delegated by shareholders (Fama & Jensen, 1983). The important role of the board of directors is discussed in the Cadbury Report (1992). This latter has brought to attention the effectiveness of the board of directors as an important corporate governance mechanism (Fuzi *et al.*, 2016; Salem et al., 2023a; Gerged et al., 2023). The most important contribution of the board is to formulate the organisation's strategy and exercise proper supervision function throughout the firm's operations (Zinkin, 2010). Thus, their independence may play an essential monitoring role in the financial reporting process. Board member independence refers to a board of director member who has no material relationship or/and financial interest with the company and is not a member of its executive team or involved in its day-to-day operations. The composition and percentage of independent directors on the board are important factors that might affect the board's ability to monitor the firm's managers (Ezeani et al., 2023; Fields & Keys, 2003; Komal et al., 2021; Obenpong Kwabi et al., 2022; Owusu et al., 2022;

Salem et al., 2023b). From an agency theory perspective, more independent directors are more likely to increase monitoring and, as a result, demand higher earnings quality (Alves, 2014). According to Liu *et al.* (2016), corporate governance through the independent board of directors increases information transparency and the quality of non-financial information, thus reducing agency problems between shareholders and managers. For example, studies (e.g., Hossain & Hammami, 2009; O'Sullivan *et al.*, 2008; Kwabi et al., 2023a) evidenced a positive correlation between information disclosure and the board of directors' independence.

Furthermore, earnings management and corporate governance literature confirms that independent board members are positively associated with the effectiveness of the firm's governance, and there is a negative relationship with fraud and discretionary accruals. Consequently, studies (e.g., El Diri *et al.*, 2020; Al Azeez *et al.*, 2019; Zalata & Roberts, 2016; Qu *et al.*, 2015; Waweru & Riro, 2013a; Jaggi *et al.*, 2009; Garcia-Osma, 2008; Abbott *et al.*, 2004) provided evidence that companies having a higher proportion of independent board members reduces the extent of manipulation of the earnings. For example, Beasley (1996) claimed that companies with a lower proportion of non-executive directors on the board are likely to commit fraud. In the same line, studies (e.g., García-Meca & Sánchez-Ballesta, 2009; Mather & Ramsay, 2006; Kao & Chen, 2004; Kwabi et al., 2023b) concluded that companies with a higher proportion of independent boards tend to have less earnings

management. For instance, Epps & Ismail (2009) reported negative associations between abnormal accruals and the percentage of outside directors on the board. Similar results were also reported by Ebrahim (2007), Farber (2005), Xie *et al.* (2003) and Klein (2002). Likewise, Peasnell *et al.* (2005, 2000) concluded that the likelihood of income increasing accruals decreases with increased board independence. Garcia-Osma (2008) also studied whether the board of directors' independence is efficient in constraining and detecting myopic Research and Development (R&D) cuts in the U.K. The findings indicate that more independent boards constrain the R&D expenditure manipulation. This suggests that the board of directors' independence can better protect shareholders from managerial opportunism and improve earnings quality by mitigating managerial self-interest and monitoring and controlling financial statements.

Based on the above discussion, this study expects that boards with a higher proportion of independent directors have a propensity for better monitoring, which will improve earnings quality. Thus, this study examines the effect of the board of directors' independence (IBOD) (computed as the number of independent non-executive directors divided by the total number on the firm's board of directors) on financial reporting in the presence of the key audit matters, hypothesising that board independence enhances the earnings quality by limiting the extent of real earnings management and discretionary accruals. Therefore, the study expects a negative relationship between the level of EM

and the board of directors' independence in the presence of disclosed KAM in the U.K

Board Member Expertise.

Board financial expertise is seen as another component of board characteristics that may have an impact on earnings management (EM) (Siam *et al.*, 2014). A board member with financial expertise may be more familiar with how earnings can be controlled and may take the required measures to limit earnings manipulation (Garcia, 2008). To monitor the financial reporting process, directors on the board must have the proper background and accounting skills to control manipulation and promote transparency regarding information disclosure (Siam *et al.*, 2014). According to Xie *et al.* (2003), accounting and financial qualifications and experience include all relevant forms of professional qualification (e.g., ACCA, CIMA, and CFA) and formal education (e.g., BSc degree in accounting and finance) as well as work experience (e.g., working as chief financial officer, finance director, financial controller or auditor). However, empirical studies show that financial expertise is an important determinant of financial reporting quality. Relatively few existing studies examined this issue and reported mixed results on the association between board financial expertise and EM. For instance, studies (e.g., Latif & Abdullah, 2015; Siam *et al.*, 2014; Alzoubi & Selamat, 2012) reported an inverse relationship between board members' financial expertise and EM. It mitigates earnings manipulation practices in listed firms.

Correspondingly, Xie *et al.* (2003) indicate that firms governed by a board of directors with accounting and financial backgrounds are less likely to engage in earnings manipulation. They also claimed that boards with a varied set of accounting skills are better at limiting EM. Similarly, Liu & Tsai (2015) documented a significant negative relationship between board member expertise and real-activity EM. Additionally, Cohen *et al.* (2002) and Carcello *et al.* (2002) concluded that a higher level of board financial expertise leads to higher monitoring incentives. Therefore, directors are more likely to demand high quality auditing work, which, in turn, curbs earnings manipulation. Conversely, Ahmed (2013) inspects the effect of the board of directors' characteristics and EM. His findings revealed that the board members' expertise and earnings manipulation are positively associated. Similarly, Metawee (2013) showed the same results, that there is a positive relationship between board financial expertise and the level of EM.

In summary, most of the research mentioned above accept that boards of directors with specific skills and experience are valuable in monitoring management. Accounting and financial skills help boards of directors better understand financial statements and financial reporting challenges. It can be assumed that there is a link between board financial expertise and EM. In line with EM and corporate governance literature, this research uses the expertise of the board of directors (BOEX) variable to assess the impact of the board of directors' financial expertise on reporting quality in the presence of the key audit

matters section, which is measured as the proportion of experienced board members of the total members of the board. However, based on the mixed findings and inconsistent results reviewed above, this study expects a negative relationship between the level of EM and the board of directors' expertise in the presence of disclosed KAM among the U.K listed firms

Board Member Activity.

The U.K Code of Corporate Governance stipulates that every firm listed on the London Stock Exchange (LSE) is expected to have a board of directors who act on behalf of shareholders to coordinate managers' activities. Thus, accountability and transparency of board members are fundamental aspects of a well-functioning corporate governance system. One of the aspects of the board of directors' effectiveness is the intensity of their activities, measured by the average number of meetings attendance held in the year. The board members are expected to meet very often. According to Ronen & Yaari (2008), the code of corporate governance in each country specifies the minimum number of meetings that the board of directors must hold during the year. However, the conduct of board meetings in the U.K is almost entirely unregulated by the companies' act. There is no statutory requirement to hold board meetings. Nevertheless, the original U.K Cadbury Report (1992) and the subsequent U.K Corporate Governance Combined Code (2003) recommended that firms must hold at least three to four meetings per year to discharge their duties effectively (Zalata & Roberts, 2016). Nonetheless, holding a board

meeting regularly is the best practice, ideally monthly, to review the previous month's financial results against budgets and determine actions for the next period. According to Conger *et al.* (1998), these meetings provide greater opportunities for discussion and exchange of ideas about supervising and counselling the top management team.

Furthermore, Vafeas (1999) was one of the first to emphasise that the frequency of board meetings is a crucial element of strong corporate governance practices that may have significant implications for firms' economic results. According to Lipton & Lorsch (1992), a higher frequency of meetings will almost certainly result in better performance because the number of board meetings can be thought of as a metric of supervisory effectiveness or efficacy and, thus, must impact business results. In this sense, many studies (e.g., Kharashgah *et al.*, 2019; Alotaibi & Hussainey, 2016; Qu *et al.*, 2015; Habbash, 2010) indicate that active members of the board with regular meetings have a better likelihood of properly performing their monitoring functions and controlling managerial behavioural concerns such as conflict of interest, financial reporting integrity, and earnings manipulation. Likewise, Conger *et al.* (1998) recognised two other benefits of a higher frequency of board meetings, including higher board effectiveness and reducing the level of EM. However, prior studies on the frequency of board meetings and earnings manipulation provided mixed results. For instance, studies (e.g., García Lara *et al.*, 2020; Anglin *et al.*, 2013; Habib & Hossain, 2013; Xie *et al.*, 2003) reported

that the frequency of board meetings is negatively associated with earnings mismanagement since a higher frequency of board meetings allows directors to address complicated issues that may arise in the company and tackle them on time. In contrast, Obigbemi *et al.* (2016) documented a positive relationship between earnings mismanagement and board meeting frequency in corporations operating in countries with weak corporate governance systems. At the same time, Uzun *et al.* (2004) reported no statistically significant difference in the frequency of board meetings between firms that engaged in fraud and those that did not.

Building on previous research, this study adopts the number of board meetings held in a year as a measure of board activity. The variable "BOA" is employed to investigate the influence of board meeting frequency on earnings management (EM) in the context of key audit matters (KAMs). Based on the preceding discussion, this study hypothesizes a negative relationship between the extent of EM and the level of board of directors' activity when KAMs are disclosed among U.K listed firms.

(ii) Audit Committee Characteristics

As mentioned earlier, this study will assess the effect on managerial reporting behaviour of those corporate governance characteristics recommended by the Sarbanes-Oxley Act (2002). The principles of the corporate governance code (Section B of the Code 24) recommended that the

audit committee members are all independent under provision B.1.1 of the Code (24) and at least one member of the audit committee has recent and relevant financial experience (expertise). In addition, the guidance on audit committees recommends enough meetings to meet the audit committee's role and responsibilities. Such should enable audit committees to ensure that shareholders' interests are properly protected in relation to financial reporting, risk management, and internal control over that reporting. Therefore, this study focuses on three main audit committee characteristics: independence, expertise, and activity.

Audit Committee Independence

Based on the explicit hypothesis indicated by numerous research stating that weak governance mechanisms and earnings management (EM) are positively interrelated (Amar, 2014), many studies intended to investigate the relationship between the existence of an audit committee and the quality of financial reporting (Carcello & Neal, 2003). According to Wild (1996), firms that form an audit committee see an improvement in their earnings response coefficients. This finding is most likely due to market participants' expectation of better financial reporting due to the establishment of an audit committee. McMullen (1996) found that the risk of errors, irregularities and other indicators of unreliable financial reporting is lower for firms with an audit committee. However, there is a stream of research in the literature that examines the relationship between audit committee characteristics and the financial reporting

quality, where audit committees' independence has attracted significant interest from practitioners and academics who have stressed the importance of this feature on audit committee effectiveness (Mardessi & Fourati, 2020). For instance, in a meta-analysis of 27 studies, Pomeroy & Thornton (2008) showed that the audit committee's independence is the most selected audit quality standard and that there is a consensus that it increases the quality of financial reporting. This is because the audit committee receives authority from the board of directors to oversee a firm's financial activities, making it a type of monitoring tool that improves the quality of information flow among stakeholders (Nazir & Afza, 2018). The independence of the audit committee is regarded as one of the most important mechanisms of corporate governance that positively affect the quality of information disclosure (Nekhili *et al.*, 2016; Madi *et al.*, 2014). Therefore, a growing strand of research (e.g., Nekhili *et al.*, 2016; Bazrafshan *et al.*, 2015; Madi *et al.*, 2014; Robinson & Owens-Jackson, 2009; Pomeroy & Thornton, 2008; Bradbury *et al.*, 2006; Yang & Krishnan, 2005; Felo *et al.*, 2003; Klein, 2002; Siddiqui & Podder, 2002) have investigated the relationship between audit committees' independence as a major feature and managerial financial reporting decisions.

However, there are competing arguments regarding the direction of this relationship in the extant literature. For example, Klein (2002) finds that companies with high audit committee independence (measured by the proportion of independent directors on the audit committee) are positively

associated with discretionary accruals EM, suggesting that independent audit committee members constrain opportunistic managerial behaviour. This was also confirmed by Davidson *et al.* (2005), who discovered that companies with a majority of independent audit committee members have much lower abnormal accruals. Still, this outcome did not hold true for companies with completely independent audit committee members. In the same way, Sun *et al.* (2014) found that additional independent directorships in audit committee members are positively related to real activity EM measured by abnormal cash flows from operations, abnormal production costs and abnormal discretionary expenses. At the same time, Rajeevan & Ajward (2019) point out an insignificant effect of the audit committee's independence on real activity EM proxies. Similarly, Habbash's (2019) findings show an insignificant effect between the audit committee independence and EM indicators. In its synthesis of audit committee effectiveness, DeZoort *et al.* (2002) suggested that audit committee independence is associated with a lower incidence of financial reporting problems, as did Dhaliwal *et al.* (2010). Conversely, Beasley (1996) found a negative relationship between the incidence of fraudulent financial reporting and the percentage of outside directors on the audit committee. Most of the studies mentioned above propose that the audit committee, their independence, and the full board of directors are associated with the quality of auditing practices and a firm's financial reporting.

Corporate governance and EM literature documented evidence that the independence of audit committees is related to high audit quality and negatively affects EM practices (e.g., Bradbury *et al.*, 2006; Peasnell *et al.*, 2005; Beasley, 1996; DeFond & Jiambalvo, 1991; among others). Therefore, and in line with the corporate governance and EM literature, the current study predicts a significant negative association between the independence of the audit committee and EM in the U.K context. In addition, this study uses the independence of the audit committee (INDAC) as a control variable that might affect EM practices and the disclosed KAM. Besides, this study measures the variable of audit committee independence as the number of independent non-executive directors on the audit committee divided by the total number of audit committee members in the firm.

Audit Committee Expertise

In the last decades, regulators and institutions emphasised the importance of integrating new directors who are "fresh thinkers" and directors with accounting and financial expertise in the audit committees (Mardessi & Fourati, 2020). In a survey study, DeZoort (1997) found that members of audit committee should have sufficient expertise in oversight of areas related to auditing, accounting, and the law. In addition, Zaman *et al.*, (2011) and DeFond *et al*., (2005) claimed that financial expertise is critical to the effectiveness of an audit committee because the committee must perform a wide range of duties that necessitate a high level of accounting/financial sophistication. Nonetheless,

various studies have explicitly investigated the effects of individual audit committee characteristics on the quality of financial reporting. For instance, the research of Mangena & Pike (2005) indicates that audit committee expertise promotes financial disclosure, and that expert capability fosters earnings quality, where such expertise in the face of increasingly complex information (Beasley *et al.*, 2009). Accordingly, Chen & Komal, (2018) argued that audit committee expertise assures financial reporting quality and enhances the information's credibility and quality. The Sarbanes–Oxley Act of 2002 highlighted the importance of audit committee financial expertise with the purpose of increasing financial reporting quality. The profound knowledge of financial accounting and other related accounting skills empowers the committee members to effectively carry out their work (Agwor & Onukogu, 2018). Studies (e.g., Krishnan & Lee, 2009; DeFond *et al.*, 2005; Raghunandan *et al.*, 2001) showed that the audit committee members who are financially expert could perform their monitoring roles with more effectiveness in detecting material misstatements. In contrast, audit committee members who lack financial expertise may be unable to assure the quality of the audit (Turley & Zaman, 2004). Besides, Dhaliwal *et al.* (2010) denoted that the existence of expert members on the audit committee is vital to boost their monitoring role, which promotes the quality of corporate disclosure.

Furthermore, various studies (e.g., Agwor & Onukogu, 2018; Krishnan & Visvanathan, 2008; Carcello *et al.*, 2006; Bedard & Johnstone, 2004)

documented evidence that a reduction in earnings management (EM) practices occurs when an expert member is among the audit committee. Additionally, (Xie *et al.*, 2003) contended that audit committee members must be financially sophisticated in order to limit managers' inclination to engage in earnings manipulation. Furthermore, Krishnan & Visvanathan (2008) claimed that a positive relationship exists between the ratio of audit committee members and accounting expertise. Therefore, a larger number of members with financial expertise on the audit committee strengthens internal control processes and minimises fraudulent practices. Following Krishnan & Visvanathan (2008)[3], this research adopts the audit committee expertise (AUCEX) variable to control its effect on both EM and KAM, which is measured as the proportion of experienced audit members of the total members of the audit committee. Therefore, and based on the discussion above, this study predicts a negative relationship between the level of EM and the audit committee expertise in the presence of disclosed KAM in the U.K.

Audit Committee Activity

Audit committees are essential members of the corporate governance mosaic whose main aim is to improve market transparency and restore confidence in the investment community by guaranteeing the reliability of the accounting information disclosed by companies (Méndez & García, 2007).

[3] Krishnan & Visvanathan (2008) argue that, in comparison to other experts, accounting experts face increased exposure to state lawsuits in the post-SOX era, which may provide further incentives for accounting experts to promote sound accrual policies.

Their primary responsibility is, thus, to examine corporations' internal audit systems, protect the external auditors' independence, and evaluate and control corporate governance, information transparency, and conflicts between managers and shareholders (Owolabi & Dada, 2011). To perform these responsibilities effectively, audit committees must meet regularly to review the audit process and internal control mechanisms and evaluate financial reporting. The U.K.'s Cadbury Report, for instance, recommends a minimum of two meetings per year. The first meeting would be to approve the external auditors' future audit plan, and the second meeting would be to examine the audit's subsequent outcomes. To approximate audit committees' effectiveness, this study uses meeting frequency to measure the level of their activities. As per Menon & Williams (1994), the number of audit committee meetings frequency is seen as an indicator of audit committee effectiveness, since an inactive audit committee is less likely to perform its monitoring duties effectively. In contrast, Abbott *et al.* (2004) concluded that a high level of audit committee activity (measured by the number of meetings held in the year) is significantly related to a lower incidence of financial reporting misstatement, as the audit committee members that meet more frequently may be more effective in preventing financial misstatement as they have greater opportunities to discuss financial reporting problems. That being said, many theoretical and empirical studies (e.g., Ghosh *et al.*, 2010; Lin & Hwang, 2010; Abbot *et al.*, 2004; Xie *et al.*, 2003) have evidenced a positive relationship between audit committees'

meeting frequency and the quality of a firm's accounting information. For example, Lin & Hwang (2010) reported a significant positive effect of an active audit committee on the quality of financial reports. He stated that audit committees that meet more frequently are more likely to be proactive and demanding when it comes to assuring the quality of earnings. In the same line, Ghosh *et al.* (2010) established a positive relationship between audit committee meeting frequency and earnings management, validating Vafeas's (2000) and Jensen's (1993) results. On the other hand, Lin *et al.* (2006) and Xie *et al.* (2003) show a negative relationship between earnings management level and the number of audit committee meetings. Nonetheless, it is equally evident that effective control is unlikely to occur if an audit committee meets only once a year, if at all (Deli & Gillan, 2000; Collier & Gregory, 1999). On the other hand, previous research has been insufficient in demonstrating the influence of audit committee meetings on financial reporting quality. For example, the study of Bedard & Johnstone (2004) finds no significant connection between aggressive earnings management and audit committee meetings frequency in U.S. firms. Their findings are corroborated by Yang & Krishnan (2005), who also find no effect of audit committee meetings frequency on quarterly earnings management.

Following previous research, this study considers the number of audit committee meetings held during a year to capture the audit committees' activity and uses the variable (AUCA) to examine the impact of the frequency of audit

committee meetings on EM in the presence of key audit matters. Based on the above discussion, and due to the ambiguous results of the impact of audit committee meetings frequency on EM, the study hypothesises a negative relationship between the level of E.M. and the audit committees' activity in the presence of disclosed KAM among the U.K. listed firms.

(iii) Financial characteristics

Firm characteristics, including financial ones, are defined as internal organisational factors that emerge within the organisation's internal environment and can be controlled, including management influences and firm competencies (Zou & Stan, 1998). Firms' financial characteristics play an essential role in explaining and understanding earnings quality because they influence firms' external and internal decisions (Shehu, 2004) and are important in restraining firms' managers from manipulating the accounting information (Mutende *et al.*, 2017). Therefore, aside from considering the impact of key audit matters on different types of earnings management (EM) utilised by firms, it is also of particular interest to investigate how firm-specific financial characteristics affect EM. Thus, this study complements the literature by assessing the effect of the following set of attributes of financial characteristics, namely size, profitability, growth, liquidity, and leverage on accrual-based EM and real activity EM.

Firm's Size

An important aspect of research into corporation activities must include the firm size (Zadeh & Eskandari, 2012). Due to asymmetrical details, agency theory emphasises that the larger a firm is, the higher the monitoring and agency costs would be. Larger firms have stronger motivations to disclose more information in their financial statement (Souissi & Khlif, 2012). According to Watson *et al.* (2002), larger firms, particularly listed firms, will have easy access to direct financing based on their amount of disclosed information because it helps to reduce the degree of uncertainty about the firm's performance. Various studies (e.g., Oliveira *et al.*, 2011; Amran *et al.*, 2009; Aljifri, 2008; Abraham & Cox, 2007; Depoers, 2000; AbdElsalam & Weetman, 2003) have tested a positive relationship between information disclosure (various kinds) and firm size. For instance, the studies by Lang & Lundholm (1993) and Kasznik & Lev (1995) showed a positive and significant relationship between information disclosure and firm size; this is based on the possibility of economies of scale (Field *et al.*, 2005). Likewise, the study of Watson *et al.* (2002) proved that the cost of information disclosure by larger firms' is much cheaper than for smaller firms. Some direct costs to be borne by information disclosure include the cost of gathering and disseminating the information. This exercise may also lead to competitive disadvantage as an indirect cost (Field *et al.*, 2005).

On the other hand, previous studies find a negative relationship between firm size and the manipulation of earnings (Lakhal, 2015). Given their size, bigger firms are more likely to be under close scrutiny by outsiders (financial analysts, shareholders, lenders, among others) than small firms (Barton & Simko, 2002). Thus, large firms are more likely to adopt aggressive accounting policies, which causes them to engage in income-increasing practices (EM). Accordingly, Watts & Zimmerman (1990) stated that the government scrutiny and political cost are high for larger firms; thus, these firms are more likely to engage in income-decreasing earnings management. Recent empirical studies (e.g., Pyo & Lee, 2013; Kim *et al.,* 2013; Yip *et al.,* 2011; Gargouri *et al.,* 2010; Chih *et al.,* 2008, Siregar & Utama, 2008) have supported the negative relationship between firm size and earnings manipulation. This perspective contends that, since larger firms are often forced to disclose their financial information, they are less likely to exploit earnings. Consistent with previous studies such as Jaggi *et al.* (2009) and Dimitropoulos & Asteriou (2010), this study uses firm size (FSIZ) as a control variable, which is measured as the natural logarithm of total assets at the year-end and expects a negative relationship between the level of EM and firm size in the presence of disclosed KAM among the U.K. listed firms.

Profitability

This study finds that profitability is an important variable that might impact earnings management and information disclosure (KAM). Firms'

managers would have lower incentive to manipulate earnings when the actual profitability is low or high to smooth (increase or decrease) their income and give investors a signal about future earnings growth (Prencipe *et al.*, 2008). According to Kaznik (1999) and Dechow *et al.* (1995), a firm's profitability has been found to be associated with EM. For instance, studies (e.g., Boulila *et al.*, 2014; Kiattikulwattana, 2014; Sun *et al.*, 2014; Yang, 2013) have documented a negative and significant relationship between a firm's profitability and EM practices. In addition, the study of Wu *et al.* (2016) documented that firms with higher profitability are less inclined to accounting earnings manipulation.

Regarding information disclosure and transparency, it was argued that firms with high profitability are motivated to be transparent and disclose information. This is because it improves investors' confidence and raises the firm's manager's compensation (Rouf & Al Harun, 2011). Accordingly, Escamilla-Solano *et al*. (2019) argued that profitability exerts the greatest effect on information transparency. In this sense, the study of Cormier & Magnan (1999) shows that firms in excellent financial position appear to report information in a more detailed manner than 125 firms in a bad financial position. However, previous empirical studies in EM and transparency have used return on assets "ROA" to measure a firm's profitability because ROA is highly significant in explaining the firm's value (Kothari *et al.*, 2005; Carter *et al.*, 2003). Following prior research (Wang *et al.*, 2016; Doukakis, 2014; Filip & Raffournier, 2014), this study uses return on assets (ROA) as an indicator for

profitability, which is measured by net income divided by lagged total assets. The higher the ROA of firms, the more effectively the firms use their assets in creating high earnings. High ROA creates opportunities for corporate managers to manipulate earnings by maximising earnings to acquire large bonus amounts (Narsa, 2020). Based on the discussion above, this study hypothesises a negative relationship between the extent of EM and the level of board of directors' activity when KAMs are disclosed among U.K listed firms.

Growth

Firm growth opportunities are of great importance for management, depending on how accounting discretion is used (Gorganli & Vakilifard, 2014). Managers pay close attention to the potential quality of information accounting, as well as its implications for users and society prior to its disclosure. It is argued that firms with higher growth are expected to have higher asymmetric information between stakeholders and managers, which encourages them to report more information through their financial statement to decrease this gap (Gul & Leung, 2004). Additionally, firms are inclined to increase voluntary disclosure to boost their ability to access funds at a lower cost and attract more investors (Khurana *et al.*, 2006). Various empirical studies (e.g., Ntim & Soobaroyen, 2013; Laidroo, 2009; Hyytinen & Pajarinen, 2005) have documented evidence that firms with higher growth opportunities are more likely to disclose information in their report compared to firms with low growth, due to their need for external finance. The situation of the firm has varying

effects on the sensitivity of managers to the accounting numbers reported. According to Skinner & Sloan (2002), the market may severely penalise growth firms due to a negative earnings surprise. As a result, growth firms are highly motivated to meet earnings benchmarks to avoid increasing capital costs or maintain access to capital (Gorganli & Vakilifard, 2014). Moreover, growth firms are interested in earnings smoothing through accruals because earnings volatility may increase the risk of the examined firm (Beaver *et al.*, 1970). In addition, Dimitropoulos & Asteriou (2010), Huang *et al.* (2009) and Haniffa *et al.* (2006) documented that fast-growing firms are more likely to be involved in EM. This may have a negative impact on the capital costs needed to fund new projects (Minton & Schrand, 1999). In the meantime, managers of non-growth firms need less cash to finance new projects, thus being more independent. As a result, a negative relationship between the firm's growth opportunity and accounting discretion is expected. Following previous studies (e.g., Srinidhi *et al.*, 2011; Thiruvadi & Huang, 2011; Peni & Vähämaa, 2010), this study uses market-to-book ratio (MBV) as a proxy to control for a firm's growth and predicts a negative relationship between the level of EM and firm growth in the presence of disclosed KAM among the U.K listed firms.

Leverage

Leverage corresponds to a firm's debt structure and is used to evaluate its financial risk (Dimitropoulos & Asteriou, 2010). It is also used to measure its capacity to guarantee total liabilities with the firm's total assets (Narsa,

2020). Previous literature in accounting has used leverage as a proxy for debt covenant violation (Elayan *et al.* 2008). Consequently, this study foresees that a firm's leverage is an essential variable that might impact earnings management (EM) and information disclosure (KAM). According to Gavious *et al.* (2012), a firm's manager may understate liabilities or overstate assets to escape debt covenant violations. The firm commits fraud in the form of EM, which entails increasing reported earnings to increase the firm's bargaining power in debt negotiations, alleviate creditors' concerns, and obtain credit line loosening (Narsa, 2020). For instance, empirical studies in EM (e.g., Vakilifard & Mortazavi, 2016; Wasiuzzaman *et al.*, 2015; Habbash *et al.*, 2014; Jiang *et al.*, 2008) have documented evidence of a positive relationship between the level of leverage and EM practices. This positive relationship between financial leverage and EM is justified by the fact that firms in financial distress or difficulty have an incentive to manipulate reported earnings upwards to avoid debt covenant valuation and increased financing costs (Watts & Zimmerman 1990). However, Choi *et al.* (2013), Chih *et al.* (2008), DeFond & Jiambalvo (1994), and Dechow & Skinner (2000) found that firms with higher financial leverage ratios tend to manage discretionary accruals downwards. They argued that managers might intensify the EM monitoring, resulting in a negative relationship between EM and financial leverage. In addition, the finding of Vakilifard & Mortazavi's (2016) study indicate that firms' managers tend to become involved more in real activity EM than accrual-based EM once

leverage is increasing. This result highlights that focusing only on accrual-based EM underestimates the total EM activities.

Regarding information disclosure, Huafang & Jianguo (2007) argued that firms with higher leverage ratios face higher monitoring costs. As a result, managers are willing to disclose information in their financial statements as an instrument for decreasing the monitoring costs (García-Meca & Sánchez-Ballesta, 2009). In addition, managers of highly leveraged firms are likely to disclose more information to signal to creditors that the firm can satisfy its debt criteria and attract investors (Elzahar & Hussainey, 2012). Following previous studies (e.g., Ming-Feng & Shiow-Ying, 2015; Du *et al.*, 2015, Ghosh, 2007; Hu & Zhou, 2000), this study measures leverage (LEV) as the total liabilities divided by total assets and expects a negative relationship between the level of EM and firm leverage in the presence of disclosed KAM among the U.K. listed firms.

Liquidity

Liquidity is critical in meeting day-to-day business operations and financing future projects. Managers are willing to disclose liquidity in financial statements to attract creditors, investors, and customers (Hassan & Farouk, 2014). According to Borio (2000), liquidity is referred to as the ability of the market to absorb large volumes of transactions without causing extreme price instability. Various financial indicators, including liquidity ratio, are related to earnings manipulation (Aduda & Ongoro, 2020; Salah, 2018; Ajina & Habib,

2017; Nekhili *et al.*, 2016; Riahi *et al.,* 2013; Kim *et al.*, 2011). For instance, Riahi *et al.* (2013) denotes the connection between earnings management and market liquidity. This latter can minimise EM for at least two reasons (Li & Xia, 2021). First, a liquid stock market improves the discipline of management by facilitating block formation and direct intervention by institutional investors (Hadani *et al.*, 2011; Edmans, 2009). Meanwhile, increased liquidity encourages short sellers to obtain firm-specific information, and their informed trading contributes to improved price efficiency (Holden & Subrahmanyam, 1992). More informed stock prices increase the likelihood and speed with which the market discovers a company's earnings manipulation (Fang *et al.*, 2016; Massa *et al.*, 2015). Thus, ex-ante, stock liquidity reduces managers' incentives to manipulate reporting results (Li & Xia, 2021). Second, stock liquidity incentivises managers to engage in earnings manipulation by influencing the structure of managerial compensation. According to Jayaraman & Milbourn (2011), this effect is due to the increased importance of equity-based compensation in total executive compensation. This allows managers to manipulate profits to boost short-term stock prices, allowing them to gain private benefits from inflated stock prices (Bergstresser & Philippon, 2008).

In general, EM practices degrade the disclosure and quality of earnings reports. The current agency theory emphasises that firms link between stock market liquidity and disclosure quality of accounting information (Lambert *et al.*, 2007; Kim & Verrecchia, 2001; Leuz & Verrecchia, 2000). In turn, this

increases information asymmetry and decreases trading liquidity. Given that firms' earnings management activities can reduce the quality of earnings information, this can have a major impact on stock liquidity and the cost of capital (Ascioglu *et al.*, 2012). In addition, Elzahar & Hussainey (2012) and Wallace *et al.*, (1994) denoted that firms with high liquidity ratios are more likely to disclose accounting information as evidence of their ability to fulfil short-term obligations when compared to their competitors with low liquidity ratios. According to Ng (2011), earnings quality is positively related to liquidity. Managers' detailed disclosure is associated with reduced information asymmetry and increased liquidity (Diamond & Verrecchia, 1991). Furthermore, Ascioglu *et al.* (2012) show that firms with higher earnings management have lower liquidity. On the contrary, LaFond *et al.* (2007) find that innate smoothing is positively interrelated with liquidity. Following empirical EM and accounting information disclosure literature, this study uses liquidity (LIQ) as a control variable, which is measured as the ratio of current assets divided by current liabilities at the end of the financial year. Based on the above plausible and mixed arguments, a negative relationship is expected between the level of EM and firm liquidity in the presence of disclosed KAM among the U.K listed firms.

5.3.2.2 External Governance Mechanisms

The control variables related to the category of external governance mechanisms used in the current study involve (i) external auditors' characteristics (EXC), (ii) industry regulation (IND), (iii) stock market regulation (STM) and (iv) professional auditing standards (AS).

(i) External auditors' Characteristics

The primary purpose of appointing external auditors is to provide firm's shareholders with an expert and an independent opinion on whether the firm's annual accounts reflect a true and fair view of the firm's financial position and whether they can be relied on to make decisions. Due to the increased complexity in accounting and auditing processes, audit firms' emphasis the need for quality independent audit, audit expertise and extensive technical accounting activities. Such should enable external auditors to discharge their respective responsibilities and duties effectively. Therefore, this study concentrates on four main external auditors' characteristics: Big Four, expertise, activity, and external auditors' switch.

External Auditors (Big Four)

In accounting, independence is one of the most crucial aspects of the auditors and auditors' independence is part of the foundation of the public's trust in the auditing profession and, thus, the cornerstone of the accounting profession (Lindberg & Beck, 2004). Because auditor independence substantially impacts audit quality (Rahmina & Agoes, 2014), if auditors lost

their independence, audit quality would suffer, diminishing the public's trust in the profession (Chang *et al.*, 2019). However, independent auditors are more able to express their own professional judgement on the fair presentation of a client's financial statements without being influenced by the client, which could jeopardise their independence (Tobi *et al.*, 2016). Therefore, the main motive for corporations to engage auditing firms is their independence, which adds credibility to information disclosure and enhances stakeholders' confidence (Olagunju, 2011). An auditor's independence may be jeopardised if the auditing firm succumbs to pressure from larger clients. However, the threat may be mitigated by a high reputation and legal risk. In the event of an audit failure, an auditor may be susceptible to legal action, which could affect the auditor's reputation and potentially cause the auditor to lose fees from other clients (DeAngelo, 1981). Big auditing firms such as Big N auditors (Big 4 in this case) have greater reputational concerns than non-Big N counterparts, and, thus, the former is posited to provide a higher audit quality (Francis & Wilson, 1988). These concerns have arisen from having greater regulatory scrutiny, higher litigation risk and more reputation capital to protect (DeAngelo, 1981) and are expected to be more competent. For instance, their large size enables them to attract and retain higher-quality audit inputs, especially in terms of human resources and expertise (Sirois *et al.*, 2016), which, in turn, causes them to have a big market share and enjoy larger economic scales when compared to non-Big N auditors (Watts & Zimmerman, 1981). Consequently, the vast customer

base of Big N auditors makes them less financially dependent on any given client, therefore, strengthening their independence. Many studies have investigated the consequence of economic dependence on financial reporting quality. For example, the studies of Kanagaretnam *et al.* (2010) and Gaver & Paterson (2007) have supported the notion that auditing firms tolerate less earnings manipulation in larger clients.

While studies such as Ndubuisi & Ezechukwu (2017), Sirois *et al.* (2016), Koh *et al.* (2013), Francis (2004), and Francis & Wilson (1988) suggest that auditors belonging to the Big 4 have a better financial reporting quality. This declaration is also supported by Van Tendeloo & Vanstraelen (2008), as they stated that companies audited by Big N auditors had lower levels of results manipulation than those not audited by a Big N firm. Along the same lines, the study conducted by Eshleman & Guo (2014) evidenced that the Big N undertake high-quality conduct audits.

Following previous research, this study considers the categorical variable BIG 4 to identify the auditing firm among those habitually utilised by FTSE 350 firms. According to a consultancy[4] about the big four conducted in 2018, the Big 4 currently undertakes extensive auditing work for the FTSE 350 and more than 600 businesses included in the main large and mid-cap indices

[4] More details are available at: https://www.consultancy.uk/news/19466/big-four-rivals-outlinerecommendations-for-changing-uk-audit-market.

in five of the largest European countries. The Big 4 companies are, namely, KPMG, PwC, Deloitte, and EY. Therefore, to investigate the impact of external auditor's independence on earnings management, this research uses the dummy variable Big 4 to capture auditor's independence (EXAIND) that takes the value of 1 when a listed firm is audited by KPMG, PwC, Deloitte, or EY, and 0 otherwise[5]. This study expects a lower level of earnings management and a higher number of KAMs disclosed by the auditors of the Big 4 due to their litigation and reputation risks. Based on the above discussion, and due to the indistinct results of the impact of auditor's independence on EM, the study proposes hypothesises is a negative relationship between the level of EM and the external auditor's independence in the presence of disclosed KAM among the U.K listed firms

External Auditors' Expertise

Audit firms frequently highlight the value of sector specialisation (expertise) in producing high-quality audits (Gaver & Utke, 2021). For instance, Ernest & Young proclaim that "We believe that having the professionals develop a deep understanding of industry specific issues improves the quality of the audits" (Ernest & Young, 2017). Due to its importance, researchers have paid close attention to industry specialisation in public company audits. According to Gaver & Utke (2021), understanding whether,

[5] All firms in the sample are continually audited by the Big 4, only three firms in the sample switched from a non-Big 4 to Big4 and only one firm switched from a Big 4 to a non-Big 4.

and how, industry expertise affects audit quality and disclosure is critical for public companies choosing auditors who are concerned about the quality of their audits. Initial research in this field (e.g., Reichelt & Wang, 2010; Balsam *et al.*, 2003) found that audit firms with industry expertise have higher earnings reporting quality. Though sector expertise cannot be observed at the company or auditor level, researchers have utilised an audit firm's market share within an industry to measure industry specialisation (Eshleman & Guo, 2020). Prior studies in the auditing area control for auditor specialisation that is obtained as a share of the sales-based industry market, utilising a simple proportion (Sierra-Garcia, 2019). Auditors are regarded as specialists in a particular industry if they are leaders in that industry, which is usually defined as having more than 30 percent of the market share. This is done by employing three various measures, which are assets, sales, and audit fees (Audousset-Coulier *et al.*, 2015; Neal and Riley, 2004). This study will follow Sierra-Garcia (2019) and uses sales to define the auditors' industry specialism. The variable (EXAEX) is used to assess the effect of KAMs disclosed by auditors' industry specialists on EM, which takes the value (1) when the incumbent auditor is an expert in the industry where their clients operate and the value (0) otherwise. This study expects a higher number of KAMs disclosed by auditor industry specialists due to their better understanding of the industry and client, which may curb the misbehaviour of financial reporting. Consequently, this study predicts is a

negative relationship between the level of EM and the external auditor's expertise in the presence of disclosed KAM in the U.K.

External Auditors' Activities

As a part of audit activities, in accordance with the U.K ISA 701 after the introduction of Key Audit Matters (KAM), external auditors exercise professional judgment and uphold professional scepticism throughout the auditing process. Therefore, the external auditors' objective is to obtain reasonable assurance by issuing a report that includes the auditor's opinion about whether the financial statement is free from material misstatement and whether they are due to error or fraud. During the auditing process, auditors are required to identify and assess the risks of material misstatement of the auditee's financial statement. Hence, they are required to design and perform auditing procedures responsive to the risk of material misstatement and pull together all the sufficient and appropriate audit evidence to provide a basis for their opinion (FRC, 2019)[6]. In addition, external auditors are expected to assess the propriety of accounting policies utilised, as well as the reasonableness of accounting estimates and related disclosures made by the management, and evaluate the content, the structure, and the overall presentation of the financial statements, among others. This includes disclosures and whether the financial statement accurately represents the underlying transactions and events in a manner that

[6] https://www.frc.org.uk/auditors/audit-assurance/auditor-s-responsibilities-for-the-audit-of-thefi/description-of-the-auditor's-responsibilities-for

achieves fair presentation. To perform the above tasks, audit firms are entitled to fees for their services, which the auditee pays in compensation for their effort. According to Choi *et al.* (2009), audit fees are costs charged to reflect the cost of the effort performed by public auditors, including the risk of litigation. The level of audit fees paid to the auditors is usually related to their exerted effort, which depends on clients' size and risk (Shakhatreh *et al.*, 2020). Audit fees may differ from one client to another and from one engagement to another for the same client (Judd *et al.*, 2017), considering the complexity of the audit procedure, risk of the engagement, professionalism required and other professional factors (Onaolapo *et al.*, 2017). The audit fees are attributed to the contract between the auditing firm and the auditee considering audit services and periods (Simunic, 1980). Gandia & Hughet (2020) maintained that higher audit fees might be perceived as a result of the auditor's more effective monitoring as well as expertise (higher fees per hour) and a consequence of the audit effort (more work hours). Thus, audit fees can reflect the level of the auditor's activity. In other words, more audit fees imply more effort (effectiveness) for external auditors and vice-versa. Therefore, this study uses the audit fees paid to auditors as a proxy to capture the level of activity of external auditors.

Some researchers believe that, after the introduction of KAM, audit fees will increase by increasing the audit costs (Li, 2020). Because auditors are required to expand the scope of the substantive auditing procedures, auditors

will be more cautious about audit risks. Conversely, some scholars found that the disclosure of KAM will not augment the audit fees because the disclosure of KAM is mandatory, which will not lead to an increase in audit fees. For example, Reid *et al.* (2019) used recent changes in U.K audit reports to find no empirical evidence of major changes in audit quality or audit costs when the new reporting system was implemented. Furthermore, Li (2020) stated that the impact of KAM on audit fees would also affect audit quality. This declaration is also supported by the findings of Onaolapo *et al.* (2017) and Kachelmeier & Valentine (2017), which show a significant positive impact of audit fees on audit quality. According to Watts & Zimmerman (1981), auditors with more auditing engagement (activities) will enjoy larger economies of scale, making them more efficient in monitoring the level of audit quality they deliver. This means higher fees lead to higher audit quality, which will improve the reporting quality. Consequently, this study expects a lower level of earnings management (EM) and a higher number of KAMs disclosed by the external auditor when audit fees are higher due to higher audit quality. Based on the above discussion, this research adopts the external auditor's activity (EXAAC) variable to control its effect on EM and KAM, measured as the total audit fees paid to the auditors for their auditing services. Hence, this study expects a negative relationship between the level of EM and the external auditor's activity in the presence of disclosed KAM among the U.K listed firms.

External Auditors Switch

The extant research on auditor switching focuses primarily on markets with relatively stable overall numbers of accounting firms competing for audits, but with increasing concentration and implied reductions in competition in the large client sector dominated by big international accounting firms (Wolk *et al.*, 2001). This characterisation also applies to the audit market in the United Kingdom. The ultimate mandatory audit firm rotation regulation in the FTSE 350 led to rapidly growing competition for the supply of audit services. Firms or management tend to retain or select auditors who best satisfy their needs in a competitive market (Beattie & Fearnley, 1998), resulting in a market with a high level of client–auditor alignment. Switching auditors is more likely to happen when the client and the auditor are not well-aligned. Changes in the client or the auditor's characteristics can cause a misalignment, which can be addressed by the auditor switch (Landsman *et al.*, 2009). However, consistent with studies (e.g., Hudaib & Cooke, 2005; Woo & Koh, 2001) it is indicated that firm's management changes are one of the most common reasons for switching auditors because managers are more inclined to auditors who are more accommodating with the application of their accounting policies and choices. It is posited that managers prefer auditors who are more flexible concerning their accounting estimates and choices (Bagherpour *et al.*, 2014). Previous research in auditing (e.g., Newton *et al.*, 2016; Lennox, 2000; Krishnan, 1994) evidenced that firms engage in opinion shopping that has the

potential to reduce audit quality. Reduced auditing quality provides less assurance that the financial statements are accurately reflecting the firms' underlying economic condition and increases the likelihood that the financial statements reflect management bias and contain material misstatements (DeFond & Zhang, 2014). In that case, this study expects audit switch to be associated with accounting estimates and choices, which, in turn, will influence earnings management and key audit matters. It uses the variable SWITCH which is a dummy variable that takes the value 1 if the client has changed its external auditor since the previous year and takes the value 0 otherwise. Hence the study hypothesises a negative relationship between the level of EM and the external auditor's switch in the presence of disclosed KAM among the U.K listed firms.

(ii) Industry Regulation

The mandatory submission of firms' non-financial and financial information to a government or concerned agency can be defined as statutory reporting. Generally, each industry has its own set of laws, regulations, and regulatory bodies that mandate reports. Since the U.K Companies Act of 1981, different standards for different companies' sectors have evolved to reduce the reporting burden in U.K companies (Liu & Skerratt, 2018). There are now distinct regimes for publicly traded companies in each industry. This strategy raises the question of whether earnings quality is comparable across sectors. According to Wasiuzzaman *et al.* (2015), the incentives to manipulate earnings

and the extent to which it is practised may vary due to the nature of the industries. Even though firms in different industries behave differently in terms of earnings management (EM) activities, most studies have looked at the overall picture to declare the absence or the presence of EM without considering the possibility that it is more prevalent in some industries and less prevalent in others. There is abundant evidence that the industry in which a company operates may significantly impact its EM activities. For example, Ujah & Brusa (2011) found that the degree and extent of managed earnings vary depending on which industry a firm belongs to. While much research on EM focuses on specific industries such as the manufacturing industry (Hassan & Ahmed, 2012), the banking industry (Shen & Chih, 2005; Yasuda *et al.*, 2004 and Ahmed *et al.*, 1999), and the oil industry (Al Azeez *et al.*, 2019; Byard *et al.*, 2007; Hall & Stammerjohan, 1997), they mostly investigate the firm characteristics influencing earnings mismanagement in these industries. However, concentrating on specific industries seems to indicate the emphasis needed to be placed on EM activities in some industries compared to others. Sun & Rath (2009) found the prevalence of EM proxied by discretionary accruals in six out of the nine industries they investigated. Accordingly, Nelson *et al.* (2002) found evidence of a significantly higher occurrence of EM attempts in the electronics industry. In contrast, Ashari *et al.* (2012) reported that income smoothers tend to come from industries with higher risks. These studies' findings, while insightful, cannot be easily generalised. Examining firms in a

regulated industry yields results for a single industry with distinct financial reporting issues. The studies above suggest that the tendency to manage earnings varies across industries; henceforth, the current study shifts from the firm level to the industry level to emphasise the similarities and differences in EM motivation across industries. It uses the industry regulation dummy variable (IND) to capture the variations in the governance systems in the following five industrial sectors (IND1, IND2, IND3, IND4 and IND5[7]) included in the regression model as control variables to capture the possible effects of sectoral practices on managerial behaviour. Based on the above discussion this study predicts a significant tendency to manage earnings across all industries in the presence of disclosed KAM among the U.K listed firms.

(iii) Stock Market Regulation

All London Stock Exchange (LSE) listing firms are bound to comply with the LSE rules and regulations and those that breach these requirements are disciplined. The general conduct rules cover misleading acts, prohibited conduct and practice system testing, and share price manipulation, among others. The Exchange's disciplinary process is covered by the compliance rules (procedures). If the Exchange believes a member firm has violated a rule, it may take disciplinary action against that firm and may issue a warning or/and impose

[7] IND_5 left out of the regression analysis to avoid issues associated with dummy variable trap.

a fixed penalty. The listing regime establishes two listing categories: premium and standard. Companies with a premium listing or seeking admission to the premium listing are subject to more stringent requirements and must adhere to the U.K's highest regulatory and corporate governance standards, which may result in a lower cost of capital due to increased transparency and investor confidence, through the establishment and maintenance of adequate financial reporting procedures.

In comparison, those with a standard listing must adhere to the minimum standards outlined in U.K legislation. However, firms in highly regulated markets suffer acute pressure from anti-trust authorities regarding market share and price controls (Prior *et al.*, 2008). According to the same authors' findings, managers attempt to compensate for the negative impact of earnings management (EM) through corporate social responsibility activities. This is especially true for highly regulated markets where the sectors are subject to intense political scrutiny and can gain economic benefits by reporting lower earnings to regulators. Though, investigating the relationship between the level of EM through discretionary accruals on a particular index may capture the market interest in a firm through the level of analyst coverage or trading volumes over a specific period (Habbash *et al.*, 2013). Arguably, firms listed on the FTSE 100 may exhibit less earnings manipulation than their counterparts listed on the FTSE 250, as the former are subjected to more intense analyst

scrutiny. In contrast, the intense coverage of firms listed on the FTSE 100 may encourage earnings manipulation to meet or beat forecasts.

Nevertheless, the market participants' expectations and the intense competitiveness along with political pressure in the FTSE100 may pressure managers to favour a particular type of EM practice. Based on the above discussion, the current study uses the stock market regulation (DUM_FTSE) variable as a dummy variable for the FTSE index that takes a value of 1 for the sample of large-capitalised FTSE 100 firms and 0 for small-capitalised FTSE 250 firms. Thus, the current study hypothesises a negative relationship between the listing index and EM in the presence of disclosed KAM among the U.K listed firms.

(iv) Professional Auditing Standards

The U.K's FRC, responsible for audit regulation in the U.K, introduced the so-called ISA 701 in 2013 as an early adopter. However, the adoption of ISA 701 by the U.K-listed entities was voluntary for the first three years of the introduction and entered into force for periods ending on or after 15 December 2015 for auditing financial statements. The notion of key audit matters (KAM) disclosure intends to improve the audited report transparency by maximising the information in the audited report's content to promote reliability, credibility, and quality to aid users of financial statement decision-making (FRC, 2016). The adopted ISA 701 of KAMs in the extended audited report also addresses

the auditor's responsibility to form an opinion on financial statements along with audit committees.

Therefore, the auditors' role is to communicate complex and subjective areas in the audit report, such as risks of misstatement after being discussed with audit committees, to improve the communicative value and promote transparency. This, in turn, will reduce the conflict of interest and limit the managerial discretion in accounting estimates (Lambert *et al.*, 2012). As a result, this will enable users of the financial statement to quickly identify areas where the auditors had concerns and what the auditors did to address these concerns (Cordoş & Fülöp, 2015). According to Velte & Issa (2019), the disclosure of KAMs is associated with management decisions, e.g., earnings management (EM), because firms' managers can select among various accounting policies and decide on estimates of accounts, which might affect the risk of material misstatements (Mahmoud, 2020). Managers can also obfuscate accounting information disclosure about account estimations, e.g., manipulating investors' perceptions of an organisation's performance (Teoh & Zang, 2014). Additionally, Jabbar (2018) admitted that managers exploit some flexibilities permitted by accounting policies to manipulate earnings to influence the results of the financial statement. For example, managers might exploit the voluntary adoption period to engage more in EM than during the compulsory period. Therefore, the current study uses the Professional Auditing Standards (AS) as a dummy variable for mandatory implementation, which

takes the value of 1 if the year of KAM disclosure is mandatory and the value of 0 if the year is voluntary. These external laws and standards require companies to adopt a certain type of accounting method. Thus, a negative relationship is predicted between the mandatory implementation period and EM in the presence of disclosed KAM among the U.K listed firms.

4.6 Summary

This chapter discusses the theoretical framework used in this study to address the relationship between Kam and EM. Since EM is perceived as an agency-related problem caused by information asymmetry, KAM is perceived as a monitoring mechanism available to stakeholders to mitigate the conflict and, thereby, to control managers' opportunistic behaviour. Given that the current study is concerned with the connection between KAM and EM, the agency theory is regarded as the main perspective to explain and interpret the results of this study. In addition, it develops the hypotheses that have evolved in the literature to explain the association between EM, KAM, and predicts the directions of the selected control variables.

Chapter Five: Measuring Earnings Management and Key Audit Matters.

5.1 Introduction

The main objective of the current study is to examine the impact of KAM disclosures on EM behaviour in non-financial firms listed on the U.K Financial Times Stock Exchange (FTSE). As mentioned in the previous chapter, the disclosure of KAMs is associated with management decisions, including earnings management, as managers have the ability to choose among various accounting policies that could affect the risk of material misstatements (Hosseinniakani et al., 2021). Managers employ various techniques, such as big bath and income smoothing models, to manipulate earnings with the aim of maximizing the firm's value, either to achieve stated performance targets or to serve private interests. However, most prior studies on U.K. case studies (e.g., Katmon & Al Farooque, 2017; Debbianita et al., 2016; Zalata & Roberts, 2016; Chi et al., 2011; Iatridis & Kadorinis, 2009; Van Tendeloo & Vanstraelen, 2008; Peasnell et al., 2005; Ferguson et al., 2004; Vander Bauwhede et al., 2003; Peasnell et al., 2000a) have focused on different types of earnings management, including accrual-based earnings management (AEM) and real activity-based earnings management (REM), in isolation. However, these studies do not fully capture the extent of earnings manipulation, as managers may use multiple earnings management techniques simultaneously. Therefore, this study utilizes both AEM and REM as the primary proxies to measure earnings management in U.K. non-financial listed companies.

This chapter justifies the authenticity of the dataset, explains the sampling distribution, and provides details on the calculations and classification of the earnings management metrics and KAMs that underpin this research. The two types of earnings management employed in this study, AEM and REM, are represented in charts to illustrate the underlying trends in earnings management behaviour between large-capitalized firms (FTSE 100) and small-capitalized firms (FTSE 250) during the study period. Additionally, it describes the major aspects of the research methodology adopted in this study, including the regression model used to examine the relationship between the earnings management output variables and independent variables, which include measures for KAM quantity and quality indicators, as well as the choice of control variables. Furthermore, it discusses the approaches used to validate the dataset and sample distribution, along with the underlying trends in the main variables of interest. The chapter also outlines the data analysis procedures and addresses econometric issues to ensure consistent correlation coefficients.

The arguments in this chapter are organized as follows: Section 5.2 provides a summary of the data collection process, sample size, and distribution. Section 5.3 describes the models used to calculate the accrual-based and real activity-based earnings management indicators employed in the study. Section 5.4 outlines the measures of KAM quantity and quality. Section 5.5 specifies the regression model used to investigate the relationship between earnings management, KAMs, and the selected control variables. Section 5.6

presents the data analysis procedures and addresses econometric issues, while Section 5.7 summarises the key points that emerge from the discussion in the chapter.

5.2 Data Collection and Sample Distribution

5.2.1 Data Collection

This study aims to investigate the responsiveness of earnings management practices of U.K listed companies to the presence of key audit matters in the audited report. Therefore, this study uses secondary data obtained primarily from the Thomson Reuters EIKON and Osiris databases. In addition, data on KAM disclosure is manually compiled from the audited financial statements published by each of the listed U.K firms on their websites and on the U.K Companies House website, which are freely accessible online to the general public.

5.2.2 Sample Size and Selection

To investigate the main research question on the impact of key audit matters on earnings management in the U.K, this study uses data from the six years from 2013 to 2018. There are three main reasons why these years were selected. *First*, this study aims to maximise the number of years used to investigate the relationship between earnings management (EM) practices and key auditing matters (KAMs) since the introduction of the ISA701. *Second*, the focus on U.K listed companies is because this market is highly developed and

informationally efficient, which, in turn, offers an excellent research arena to examine the responsiveness of EM procedures to the presence of KAMs. Besides, the U.K Financial Reporting Council (FRC) was amongst the early adopters of the standards in 2013. *Third*, evidence from the EM literature recognised the damaging consequences of the lack of interference in the formulation and enforcement of accounting conventions by the U.K government, low litigation costs and the preference for private loans by U.K listed companies (Ball *et al.* 2000). Altogether, these country characteristics were reputed to give managers of U.K listed firms the incentive and flexibility to opportunistically manage earnings for their personal interests. Therefore, an empirical study along the line proposed in this study will help to confirm whether the mandatory KAM disclosure policy instituted in 2016 help moderate such deceitful managerial behaviour.

The study sample comprises companies that continually listed on the Financial Times Stock Exchange (FTSE 350) index and whose published financial statements contain information on KAMs from 2013-2018. This study uses the index of FTSE 350 because it captures firms with the highest market capitalisation and are governed by the rules and regulations of the stock exchange, including the choice of the accounting reporting method. Failure to comply with these conventions would expose organisations and managers to liabilities and penalties (Kury, 2007). However, one potential problem of limiting of sample of study to this group of companies is that the data set only considers surviving firms (healthy firms) with existing observations and fails to

take into account firms that were delisted or went into bankruptcy. This practice could impart a "survivorship" bias to the results and limit the generalisation of the findings. According to Lin (2001), empirical analysis based on data on surviving firms will generate results that are skewed in favour of successful firms and may lead to abridged conclusions. Nevertheless, researchers in many academic fields face survivorship bias when investigating various phenomena occurring over time. For instance, in the accounting and finance field, survivorship bias commonly refers to the exclusion of firms from performance studies since they no longer exist. Many of these studies presume that firms go missing because they have failed to survive in the market. However, non-survival is not always a sign of failure (Morris, 2012). For example, in examining the financial results over an extended period for a sample of firms, one might observe that some firms might have dropped out of the list because they became extremely successful and were merged or acquired by a big rival company for its competitive advantage and not because they have failed. Nevertheless, there is a general perception that the survivorship bias effect cannot be very substantial (Brown *et al.*, 1992). Accordingly, Grinblatt and Titman (1989) reported that the survivorship bias effect accounts for only about 0.1 to 0.4 per cent of errors in empirical analysis. Therefore, it shall perceive that the bias caused by survivorship is small in magnitude compared to the total final observations in the sample.

The initial population of study comprises 350 firms. However, the final sample of firms in the dataset is obtained according to the following criteria:

The sample excluded firms in the financial services sector including banks and insurance companies, mainly due to their different financial statements characteristics (Li *et al.*, 2010). Also, the high level of leverage which is usual for finance companies is unlikely to have the same significance as for non-financial organisations, where a high level of leverage is more likely to imply distress (Fama & French, 1992). In addition, the sample excluded companies that are listed (Initial Public Offering) or incorporated after 2013, as well as companies with missing data for the key variables of interest. This sampling technique is expected to better reflect the behaviour of managers in the presence of KAM reported in financial statements. The final sample, thus, is composed of 201 firms with year-on-year data from 2013 to 2018. Table 2 summarises the data sample and its composition.

Table 2: Sample of Firms

FTSE 350	Total Firms	Total Observations	Percentage (%)
Initial Sample	350	2100	100%
Financial Service & Insurance Firms	(78)	(468)	22%
Firms with incorporation & IPO post-2013	(71)	(426)	20%
Final Sample (firm-year)	201	1206	58%

Note: This table reports the total sample during 2013- 2018 period based on the criteria mentioned in the previous section that includes 201 firms and 1206 firm-year observations.

Table 2 above illustrates the total number of companies in the final sample used in this study. It started with the initial population of 350 firms

which listed on the U.K stock exchange, (representing 100 percent). Then 78 companies of financial services and insurance, (equivalent to 22 percent), were excluded from the study's sample. A further 71 companies with incorporation or initial public offering post-2013, (representing 20 percent), were removed from the list, leaving a total of 201 companies which continually listed on the stock exchange, (correspond to 58 percent of the initial sample) in the final dataset.

5.2.3 Sample Distribution

The biggest difference between the two groups is their market capitalisation. Naturally, given the firms' size in each index, the FTSE 100 group is one of the world's most recognisable indices that accounts for 7.8 % of the world's equity market capitalisation and represents approximately 85% of the U.K equity market capitalisation. The companies listed on the FTSE100 represent the performance of the 100 largest U.K domiciled companies, known as "Blue-Chip" companies, that meet FTSE size and liquidity screening (Brzeszczyński & McIntosh 2014). Meanwhile, the FTSE 250 comprises mid-sized companies with a smaller market capitalisation equity market with price movements influenced by a wider range of companies. This index is designed to track the performance of the U.K market's mid-cap capital and industry segments, which are smaller and less liquid than the FTSE 100 Index. The FTSE 250 Index accounts for roughly 12.5% of the total market capitalisation of the U.K. Under the listing rules, premium listed companies of both indices are

required to apply the U.K Corporate Governance Code principles and comply with its regulations or explain how they achieved good governance by other means. Conversely, companies with a standard listing have the option of adhering to their domestic corporate governance code (Moore, 2009). The following table (3) represents the total number and percentage of the sample of each group.

Table 3: FTSE100 & FTSE250 Distribution.

FTSE 350	FTSE 100	FTSE 100 (%)	FTSE 250	FTSE 250 (%)	FTSE 350	FTSE 350 (%)
Initial Sample	100	100%	250	100%	350	100%
Financial Service & Insurance Firms	(17)	17%	(61)	24%	(78)	22%
Firms with incorporation & IPO Post 2013	(6)	6%	(65)	26%	(71)	20%
Final Sample	77	77%	124	50%	201	58%
Total Observations (firm-year)	462	38%	744	62%	1206	100%

Note: This table reports the total final sample of FTSE100 and FTSE250 during 2013- 2018 period.

The above table (3) shows that the first group of large-sized companies (FTSE 100) comprises 77 companies, representing 38% of the full sample, granting us a total number of 462 firm-year observations. In comparison, the second group of small-sized companies (FTSE 250) includes 124 companies, representing 62% of the full final sample, granting us 744 firm-year observations. The following charts (1) and (2) represent the composition of both groups with more details.

Chart 1: FTSE100 & Its Composition.

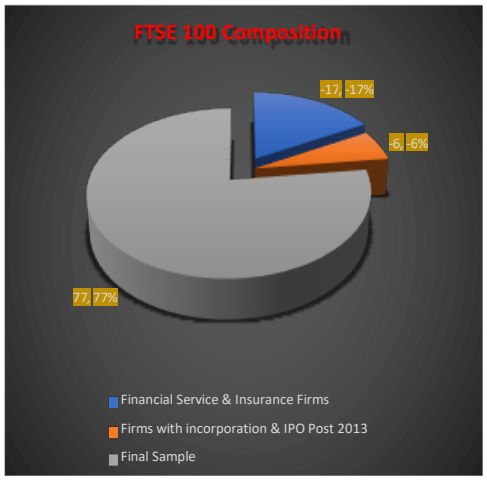
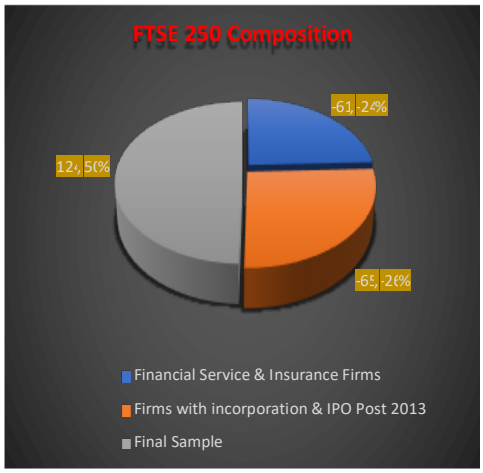


Chart 2: FTSE250 & Its Composition.



The above charts represent the two groups and their composition. The initial sample for the group FTSE 100 were 100 companies listed on the stock exchange. These were reduced to 77 companies, representing 77% of the final sample, after excluding companies from financial services and insurance activities, and companies with incorporation and initial public offerings after 2013, which both represent 23%. Furthermore, the initial sample for the group FTSE 250 was reduced by 50% after excluding companies with activities in financial and insurance services and companies with incorporation or an initial public offering post-2013, which represented 24% and 26%, respectively. The distribution in the study of the resulting 201 companies between small capitalised (FTSE 250) and large capitalised (FTSE 100) groups are comparable. It is also noticeable that the financial services and insurance companies are concentrated in the small-sized companies, with a total of 61 companies representing 18% of the total companies listed on the FTSE 350,

compared to their counterparts in large-sized companies. These total 17 companies which represents only 5% of the total companies listed in FTSE 350.

Furthermore, to identify the distribution of the final sample conforming to their operating sector, the resulting 201 non-financial companies are distributed according to their industry sector using the current Standards Industrial Classification 2007 (SIC 2007) adopted by the U.K Office for National Statistics (ONS). This is used to classify business establishments by the type of their economic activities which dominate their primary operation (see table (18) in appendix). The following table (4) comprises the total number of companies in the sample by industry, using the distribution of the companies across the industrial sectors based on their SIC 2007 assigned codes.

Table 4: Distribution of Industry and Firms in The Sample of Study

Industry	Final Sample
AGRICULTURE, FORESTRY AND FISHING?	1
MINING AND QUARRYING	17
MANUFACTURING	39
ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY	3
WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES	3
CONSTRUCTION	21
WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES	28
TRANSPORTATION AND STORAGE	13

ACCOMMODATION AND FOOD SERVICE ACTIVITIES	10
INFORMATION AND COMMUNICATION	18
REAL ESTATE ACTIVITIES	8
PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	21
ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	8
PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY	6
ARTS, ENTERTAINMENT AND RECREATION	5
Total	201

The above table (4) provides an illustration of the distribution of the resulting 201 firms listed on the FTSE 350 in terms of their operating sector and market capitalisation. The table shows that the manufacturing sector has the highest number of companies with 39 firms, representing 19 percent of the full study sample, followed by wholesale and retail trades with 28 companies, corresponding to 14 percent of the full sample. Next, both construction sector and professional, scientific, and technical activities represented totalled 21 companies each, equivalent to 10 percent of the sample, followed by information & communication, and mining & Quarrying sectors comprising 18 and 17 firms, representing 9 percent and 8 percent consecutively. Next, the transportation and storage sector had 13 companies, denoting 6 percent of the sample while the remaining industries make up 22 percent of the final sample. With regards to the groups, the following charts (3 and 4) demonstrate the

concentration of companies of FTSE 100 and FTSE 250 in their corresponding industrial sectors.

Chart 3: FTSE 100 by Industry

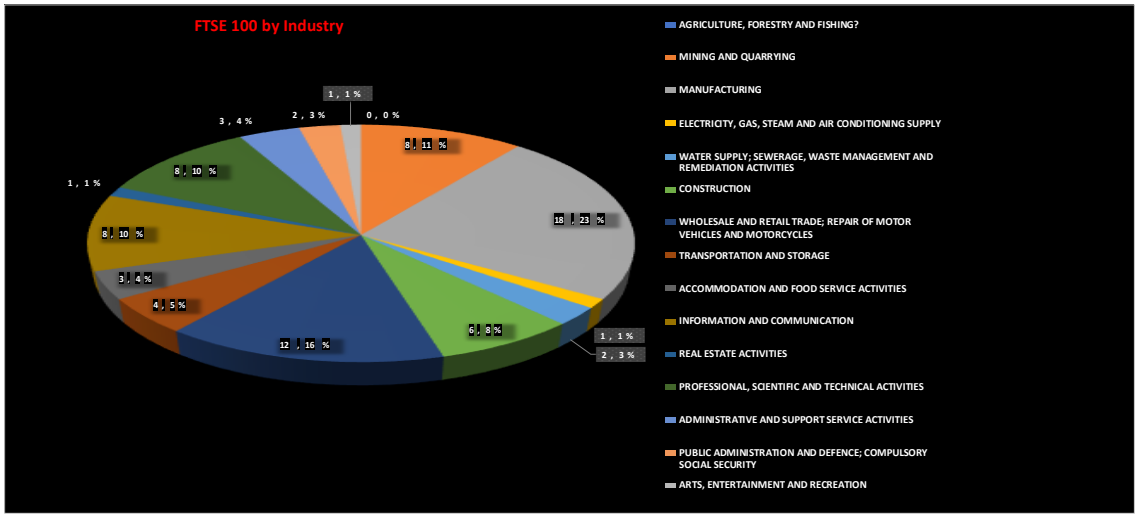
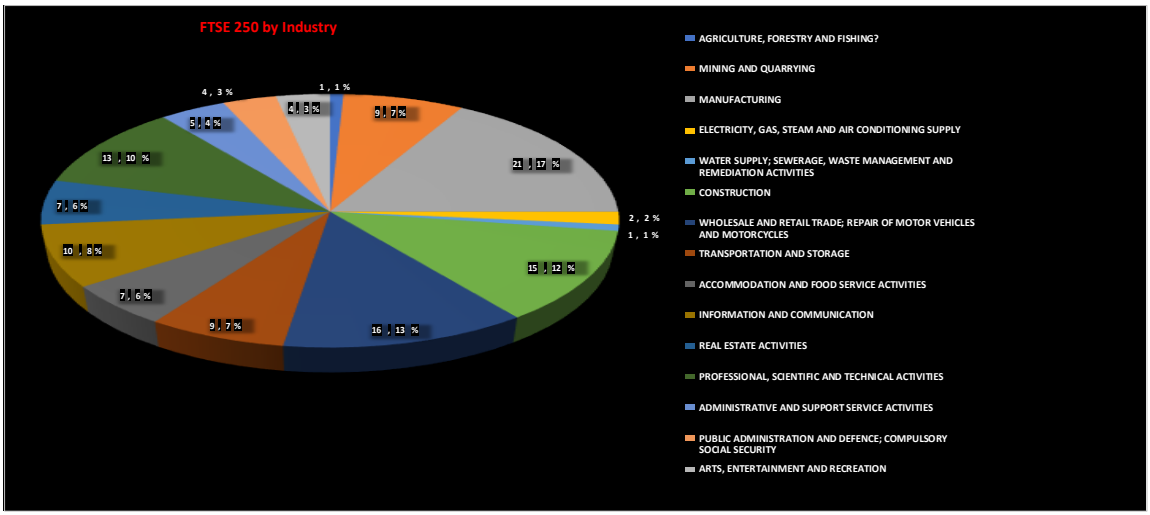


Chart 4: FTSE 250 by Industry



Charts 3 and 4 provide diagrammatic illustrations of the distribution of 201 firms in large- and small-capitalised groups in terms of their industrial sectors. The observable trends could be briefly explained as follows:

First, Chart 3 indicates that the entire study population in large-sized companies are clustered around five industrial sectors, which collectively account for 70 % of the total sample in the FTSE 100 group. This includes companies within the manufacturing industry, with 23 %; wholesale and retail trade sector, with 16%; mining & quarrying industry, with 11%; professional, scientific and technical activities, with 10%; and the information and communication sector, with 10%.

Second, chart (4) shows that the entire study population in small-sized companies are grouped around four industrial sectors, which account for 52% of the overall sample in the FTSE 250 group. They comprise companies with activities in the manufacturing industry with 17%, wholesale and retail trade sector with 13%, then professional, scientific, and technical activities with 12% and construction sector with 10%.

The dominance of the manufacturing and wholesales & retail trade sectors in both groups suggests that the empirical findings may be biased towards the accounting practices of companies in these specific industrial sectors compared to the other sectors. More specifically, the former mentioned sectors are exposed to intense competition, economic and political uncertainties, sophisticated consumers and rules, concentrated share ownership and high consumer visibility. Such high-profile businesses are heavily controlled and regulated by the government, subjected to rigorous scrutiny by social interest and political groups and international and domestic markets. As

a result, it is plausible to assume that companies in these industries are less likely to participate in earnings opportunistic management to avoid activist disruption and maintain their public image.

Furthermore, for ease of exposition, this research has re-grouped the 201 companies in the final sample of large and small capitalised groups, spread across five industries instead of fifteen industries, as illustrated in the following table (5).

Table 5: Distribution of Sample by Industry Index.

Industry Index	Component Sectors	Number of Firms	FTSE 100	FTSE 250
IND 1	Manufacturing	39	18	21
IND2	Agriculture, Forestry and Fishing, Mining and Quarrying Plus Construction	39	14	25
IND3	Wholesale And Retail Trade; Repair of Motor Vehicles and Motorcycles Plus Transportation and Storage	41	16	25
IND4	Electricity, Gas, Steam and Air Conditioning Supply, Water Supply; Sewerage, Waste Management and Remediation Activities, Accommodation and Food Service Activities, Information and Communication Plus Arts, Entertainment and Recreation	39	15	24
IND5	Real Estate Activities; Professional, Scientific and Technical Activities; Administrative and Support Service Activities Plus Public Administration and Defence; Compulsory Social Security	43	14	29
	Total	201	77	124

Table 5 depicts the distribution of firms within the five industrial indices used in the study, based on their component sectors. It is observable that the total number of firms in the sample is balanced, with an average of 40 firms in

each industry index. In comparison to both groups, the FTSE 100 group has 15 companies in each industry index on average, whereas each industrial index in the FTSE 250 has an average of 25 companies.

5.3 Earnings Management Measurement

The following subsections represent the measures of earnings management used in the subsequent empirical analysis. For instance, the accrual-based earnings management is proxied by discretionary accruals calculated using the modified Jones model (1995). Then too, the real based activity EM is approximated using measurements for the abnormal levels of cash flows from operations, production, and discretionary expenses using the Roychowdhury (2006) model. In addition, unlike other studies (e.g., Francis *et al.*, 2016; Dimitropoulos & Asteriou, 2010; Habbash *et al.*, 2010; Sun *et al.*, 2010) that capture only the magnitude of EM, this study captures the magnitude of earnings manipulation and its direction (negative or positive). The reason why the current study chooses to use the direction and magnitude of discretionary accruals is because managers are manipulating earnings in both directions: upwards and downwards (Habbash *et al.*, 2010).

5.3.1 Accrual-Based Earnings Management Measurement (Discretionary Accruals)

Accrual-Based earnings management is a method that involves changes in accounting methods to exhibit a favourable transaction stream in the published financial statement (Peasnell *et al.*, 2000a). Research discovered

considerable evidence of accrual-based earnings management prior to the passage of the Sarbanes-Oxley Act. For example, Payne & Robb (2000), declared that firms with pre-managed earnings that are lower than analysts' earnings expectations have higher positive abnormal, or discretionary, accruals. Accordingly, Kaznik & McNichols (2002) and Bartov *et al.* (2000) provided evidence consistent with accruals manipulation to meet or beat analysts' expectations.

Firms that engage in AEM can decrease or increase their income through nondiscretionary accruals. Accruals such as bad debt reserves, warranty charges, and inventory write-downs are examples of these non-discretionary accruals. However, discretionary accruals, on the other hand, are a source of concern since they are used to influence fluctuations in reported earnings. Non-discretionary accruals are based on the firm's economic performance, whereas discretionary accruals are based on managerial decisions that are constrained by accounting disclosure transparency with the aim of reducing incentives due to their aggressive behaviour in misrepresenting earnings (Dechow *et al.*, 1996; Dechow *et al.*, 1995; Jones, 1991).

Based on the discussion in Chapter 2 in the literature review (section 2.7.2), there are three models which are used to detect AEM practices (McNichols, 2002). These are the frequency distribution of earnings approach (Degeorge *et al.,* 1999; Burgstahler & Dichev, 1997), specific-accruals approach (Beaver & McNichols, 1998; Beneish, 1997; Beaver & Engel, 1996;

Petroni, 1992; McNichols & Wilson, 1988), and total-accruals approach (Kothari *et al.,* 2005; Kothari, 2001; DuCharme *et al.,* 2001; Erickson & Wang, 1999; Han & Wang, 1998; DeFond & Subramanyam, 1998; Dechow *et al.,* 1995; Jones, 1991; DeAngelo, 1986; Healy, 1985). However, the two first-mentioned approaches carry with them some serious limitations (see Section 2.7.2 for criticism). Many scholars believe that detecting EM through total accruals (discretionary accruals) has substantial advantages over the other two approaches (Beneish, 2001). The rapid expansion of accrual-based EM research can be attributed to three possible causes (Marinakis, 2011). *First*, accruals are the principal product of accounting standards (e.g., Generally Accepted Accounting Principles), and, if managers manipulate earnings, it is more likely that EM occurs on the component of accruals rather than the component of cash flow. *Second*, if EM is an unobservable component of accruals, it is less likely that shareholders can distinguish the effect of EM on reported earnings. *Third*, studying accruals reduces the problems related to the inability to measure the effect of various accounting choices on earnings (Watts & Zimmerman, 1990). These causes may explain why EM researchers prefer total-accruals models to measure EM through discretionary accruals.

The present study, therefore, will adopt the modified Jones model to estimate the discretionary accruals underpinning the current study. Besides, according to Chen *et al.* (2010), the modified Jones model is the most used method in the earnings management literature to measure Accrual-based

earnings management, with almost 30 percent of applicability (Callao & Wróblewski, 2017). In addition, it is considered as the appropriate model for separating the non-discretionary and discretionary accruals, as other models have limitations doing so. Thus, this thesis employs the modified Jones model (1995) to estimate the non-discretionary accruals. Therefore, the discretionary accruals are calculated by measuring non-discretionary accruals as a portion of total accruals. The model was estimated using three steps, as follows:

Step 1: Calculating total accruals

$$TACC_t = DCA_t - DCash - DCL_t + DDCL_t - DEP_t \qquad Eq.1$$

Where:

$TACC_t$	**Total accruals in the year t.**
DCA_t	Change in total current assets during the year t.
$DCash$	Change in total cash & cash equivalent in year t.
DCL_t	Change in total current liabilities in year t.
$DDCL_t$	Change in short-term debt included in total current liabilities in year t.
DEP_t	Expenses of depreciation & amortisation in year t.

Step 2: Estimating the Modified Jones Model, which is defined as follows:

$$TACC_t/A_{t-1} = \beta_1(1/A_{t-1}) + \beta_2(\Delta REV_t - \Delta REC_t/A_{t-1}) + \beta_3 PPE_t A_{t-1} + \varepsilon_t \qquad Eq.2$$

Where:

$TACC_t$	**Total accruals in the year t.**
A_{t-1}	Total assets in prior year (t-1).
ΔREV_t	Change in revenues in year t.
ΔREC_t	Change in receivables in year t.
PPE_t	Gross property plant & equipment in year t

β_1, β_2 and β_3	Coefficients or parameters to be estimated[8], namely betas.
ε_t	Residuals in year t.

Step3: Calculating the non-discretionary accruals.

Non-discretionary accruals (NDAC) are the estimates from the Ordinary Least Square (OLS). The model was estimated as follows:

$$NDACC_t/A_{t-1} = a_1 (1/A_{t-1}) + a_2 (\Delta REV_t - \Delta REC_t / A_{t-1}) + a_3 PPE_t/A_{t-1} + \varepsilon_t \quad Eq.3$$

Where:

$NDACC_t$	**Total non-discretionary accruals in year t divided by total assets in year t-1.**
A_{t-1}	Total assets in prior year (t-1).
ΔREV_t	Change in revenues in year t.
ΔREC_t	Change in receivables in year t.
PPE_t	Gross property plant & equipment in year t.
a_1, a_2 and a_3	Coefficients or parameters to be estimated[9], namely alphas.

Finally, the discretionary accruals (DACC) are calculated as the difference between the non-discretionary accruals and total accrual as follows:

$$DACC_{it} = (TACC_t) - (NDACC_t) \quad Eq.4$$

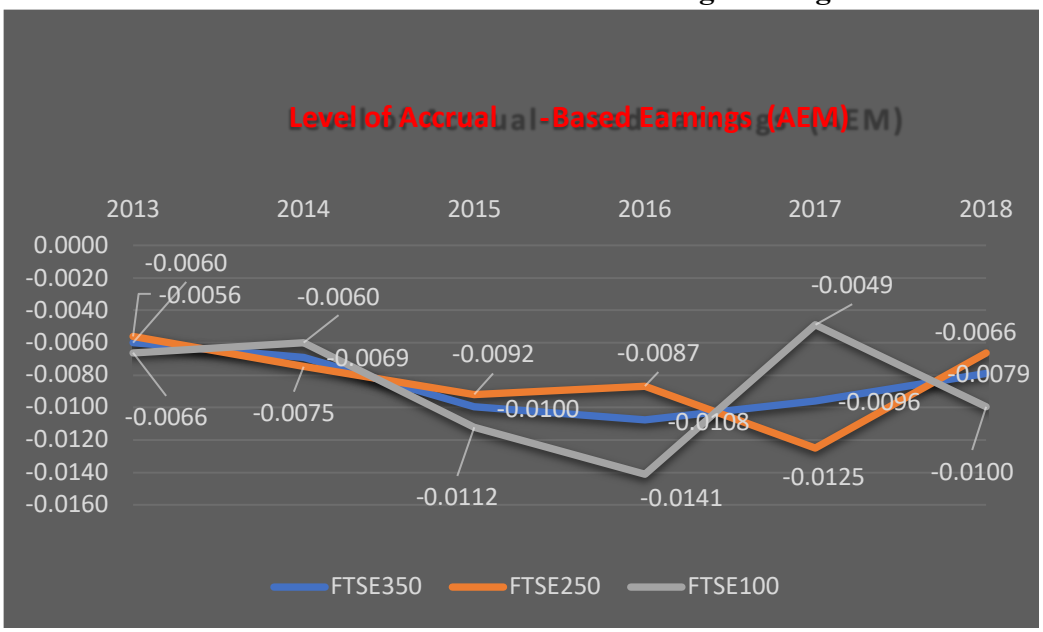
The following chart (5) exhibits the outcome obtained from estimating equation 4 employing the conventional Ordinary Least Squares (OLS). The chart presents the average mean values of the estimated

[8] Betas are coefficients or parameters to be estimated by means of Ordinary Least Squares Regression (OLS).

[9] Alphas are coefficients, or parameters to be estimated by means of Ordinary Least Squares Regression (OLS).

discretionary accruals using the modified Jones model (1995) for the full sample of FTSE 350, FTSE 100, and FTSE 250 between the years 2013 and 2018.

Chart 5: The Level of Accrual-Based Earnings Management



From the above chart (5), it is noticeable that the U.K non-financial firms do engage in accruals earnings management, as the reported mean of discretionary accruals (DACC) is 0.0085 for the whole group of FTSE 350 (see Table 6). The mean central tendency indicated by t-tests is significantly negative, this implies that the U.K listed firms engage in income decreasing (downwards). It is also observable that there is a minor difference in the level of accruals earnings manipulation among large-capitalised firms (FTSE 100) and small-capitalised firms (FTSE 250) (for means, see Table 6). With that being said, the mean value of the discretionary accruals (DACC) for large firms is (-0.0088), which is slightly higher than their small-sized counterparts, with a

mean value of DACC of -0.0083. This means that large-sized companies practise more earnings management through the discretionary accruals (income decreasing) than their counterpart small-sized companies. Arguably, this could imply that large-capitalised firms (FTSE 100) possess and manipulate larger assets than small-capitalised firms (FTSE 250), which, in turn, gives them more opportunities to practise accruals earnings manipulation. Furthermore, companies listed on the FTSE 100 may exhibit more accrual earnings manipulation than companies listed on the FTSE 250, as the former are subjected to more intense analyst scrutiny, which may encourage their managers to manipulate earnings through accruals by recording lower profits to meet or beat forecasts. Moreover, political pressure and market participants' expectations, as well as the FTSE 100's intense competitiveness, may compel managers to adopt some practices of accruals earnings mismanagement (Habbash *et al.*, 2013). However, the level of accrual earnings manipulating is also associated with the firms' characteristics and performance, and corporate governance characteristics such as audit committee and external auditors' characteristics (Almarayeh *et al*., 2020; Alkdai & Hanefah, 2012).

The outcome shown in Chart 5 also indicates that the level of earnings management through discretionary accruals has decreased from 2013 to reach its minimum in 2016; this period includes three years of voluntary disclosure of key audit matters, especially among large-sized firms (FTSE 100). This suggests that there may be a link between the adoption of key audit matters

(KAM) and the management of discretionary accruals. This is because, in 2013, the FRC in the U.K introduced ISA 701 for KAM implementation to be adopted by all companies listed on London Stock Exchange. Such reform in audit reporting standards is an attempt by regulatory authorities to enhance integrity and transparency in business processes, minimising the potential for exploitative managerial behaviour, such as earnings management. Therefore, the introduction of ISA 701 may explain the decrease of accruals earnings manipulation during the voluntary disclosure period. From 2016, which is the start of the mandatory implementation period of KAM, the DACC level increased drastically for the group of large-sized companies to reach its maximum level in 2017, then the manipulation of discretionary accruals for the whole group increased slightly from 2016 to 2018. This outcome conforms with the argument that some companies want to cover up poor performance by managing earnings through accrual manipulation, which tends to increase profits and, thus, improve company performance.

Overall, the practice of misrepresenting accounting earnings among all non-financial listed companies in the U.K after the introduction of KAM in 2013 indicates that the ISA 701 restrained managers from manipulating discretionary accruals as a tool of earnings misrepresentation.

Table 6: Descriptive Statistics by Group (FTSE)

Variable[10]	Obs	Mean	Std. Dev.	Min	Max
Accrual-Based Earnings Management Using the Modified Jones Model					
AEM_MJM FTSE 350	1206	-.0085	.039	-.521	.134
AEM_MJM FTSE 100	540	-.0088	.032	-.297	.071
AEM_MJM FTSE 250	666	-.0083	.044	-.521	.134
Real Earnings Activities Using the Principal Component Analysis					
REM_PCA FTSE 350	1206	-.009	1	-5.17	6.653
REM_PCA FTSE 100	540	-.089	1.183	-5.17	6.653
REM_PCA FTSE 250	666	.072	.816	-3.018	4.703
Key Audit Matters Quality					
AlKAM FTSE 350	1206	2.032	1.064	0	5
ELKAM FTSE 350	1206	1.698	1.227	0	7
AlKAM FTSE 100	540	2.246	1.185	0	5
ELKAM FTSE 100	540	1.824	1.29	0	7
AlKAM FTSE 250	666	1.859	.92	0	5
ELKAM FTSE 250	666	1.596	1.165	0	6
Key Audit Matters Quantity					
NB_KAM FTSE 350	1206	3.731	1.644	0	10
NB_KAM FTSE 100	540	4.07	1.789	0	10
NB_KAM FTSE 250	666	3.455	1.46	0	9
Board of Directors Characteristics					
IBOD FTSE 350	1206	58.318	14.961	0	100
BOEX FTSE 350	1206	57.3	17.004	0	100
BOA FTSE 350	1206	96.931	5.275	13	100
IBOD FTSE 100	540	61.487	14.1	4.854	92.86
BOEX FTSE 100	540	56.501	16.97	0	100
BOA FTSE 100	540	96.956	3.929	75	100
IBOD FTSE 250	666	55.749	15.155	0	100
BOEX FTSE 250	666	57.948	17.016	0	100
BOA FTSE 250	666	96.911	6.157	13	100
Audit Committees Characteristics					
INDAC FTSE 350	1206	50.832	19.778	0	100
AUCEX FTSE 350	1206	69.806	13.053	0	75.951
AUCA FTSE 350	1206	96.346	5.106	56.44	100
INDAC FTSE 100	540	51.274	19.752	.638	100
AUCEX FTSE 100	540	71.306	9.25	5.34	75.951
AUCA FTSE 100	540	96.401	4.835	56.44	100
INDAC FTSE 250	666	50.474	19.806	0	100
AUCEX FTSE 250	666	68.589	15.365	0	75.951
AUCA FTSE 250	666	96.301	5.319	56.47	100
Firm's Financial Characteristics					
SIZE FTSE 350	1206	14540407	40069765	63474.256	4.113e+08
PROF FTSE 350	1206	8.22	17.444	-53.54	236.78
LEV FTSE 350	1206	.257	.149	0	.94
GROW FTSE 350	1206	5.863	38.824	-116.095	895.232

[10] Note: All above variables are defined in Table 6A in appendix

LIQ FTSE 350	1206	1.597	1.324	.078	17.135
SIZE FTSE 100	540	28070582	56897823	353328.18	4.113e+08
PROF FTSE 100	540	6.078	7.553	-53.54	46.64
LEV FTSE 100	540	.286	.138	.019	.94
GROW FTSE 100	540	2.982	8.869	-116.095	45.384
LIQ FTSE 100	540	1.469	1.332	.181	12.306
SIZE FTSE 250	666	3569994.4	4027062.2	63474.256	22018394
PROF FTSE 250	666	9.957	22.325	-43.2	236.78
LEV FTSE 250	666	.233	.155	0	.939
GROW FTSE 250	666	8.199	51.53	-9.059	895.232
LIQ FTSE 250	666	1.701	1.309	.078	17.135
External Auditors' Characteristics					
EXAIND FTSE 350	1206	.977	.151	0	1
EXAEX FTSE 350	1206	.576	.494	0	1
EXAA FTSE 350	1206	22942.795	294629.07	0	7328003.7
SWITCH FTSE 350	1206	.081	.316	0	6
EXAIND FTSE 100	540	.998	.043	0	1
EXAEX FTSE 100	540	.567	.496	0	1
EXAA FTSE 100	540	44472.418	436438.95	46.824	7328003.7
SWITCH FTSE 100	540	.087	.282	0	1
EXAIND FTSE 250	666	.959	.197	0	1
EXAEX FTSE 250	666	.584	.493	0	1
EXAA FTSE 250	666	5486.344	47178.601	0	683348.73
SWITCH FTSE 250	666	.068	.251	0	1
Industry Regulation					
IND1 FTSE 350	1206	.194	.396	0	1
IND1 FTSE 100	540	.189	.392	0	1
IND1 FTSE 250	666	.198	.399	0	1
IND2 FTSE 350	1206	.194	.396	0	1
IND2 FTSE 100	540	.2	.4	0	1
IND2 FTSE 250	666	.189	.392	0	1
IND3 FTSE 350	1206	.204	.403	0	1
IND3 FTSE 100	540	.244	.43	0	1
IND3 FTSE 250	666	.171	.377	0	1
IND4 FTSE 350	1206	.194	.396	0	1
IND4 FTSE 100	540	.189	.392	0	1
IND4 FTSE 250	666	.198	.399	0	1
IND5 FTSE 350	1206	.219	.414	0	1
IND5 FTSE 100	540	.189	.392	0	1
IND5 FTSE 250	666	.243	.429	0	1
Stock Market (FTSE)					
DUM-FTSE	1206	.448	.497	0	1
Professional Auditing Standards					
DUM-MAN	1206	.501	.5	0	1
DUM-MAN	540	.502	.5	0	1
DUM-MAN	666	.5	.5	0	1

5.3.2 Real Activity Earnings Management Measurement

Real activity EM stems from management's intention to deceive stakeholders through the entity's day-to-day operational activities by making them believe that the threshold of real activity earnings has been beaten or met (Roychowdhury, 2006). Managers behave in such opportunistic manner to achieve perceive benefits or act as agents in value transfers between stakeholders. According to previous research (e.g., Ferentinou & Anagnostopoulou, 2016b; Zang, 2011; Gunny, 2010; Cohen & Zarowin, 2008), managers may prefer to engage in REM to manage their earnings rather than accrual earnings management because this latter attracts more scrutiny from regulators and auditors (Kassamany *et al.*, 2017; Cohen & Zarowin, 2010). Furthermore, auditors find it difficult to justify activities such as lowering maintenance expenditures and R&D, making REM more tempting to management.

Based on the definitions of real activity earnings management (REM) provided in Chapter 2 (Section 2.7.3), this study will follow the approaches popularised by Zang, (2012), Chi *et al.* (2011), Cohen *et al.* (2008) and Roychowdhury (2006) to measure REM as a second method to examine the level of earnings management in U.K non-financial firms. Consistent with these authors, abnormal levels of cash flows from operations, production costs, and discretionary expenses are used. According to Braam *et al.* (2015), firms that

practise real activities earnings management exhibit one or more of the following characteristics based on their sales levels: abnormally low cash flows from operations, abnormally high production costs, and/or abnormally low discretionary expenses. For instance, managers can engage in REM through cash flow from operations by accelerating the timing of sales that could be achieved through more lenient credit terms and increased price discounts. By introducing price discounts, managers would accelerate sales from the next year to boost total earnings in the current year, resulting in lower margins. This would subsequently result in abnormally high production costs relative to sales (Roychowdhury, 2006). Likewise, managers may decrease discretionary expenses to improve earnings in the short term. Discretionary expenses include research and development (R&D), advertising, and selling, general and administrative expenses (SG&A). Also, managers can boost earnings by overproducing inventories to report the lower cost of goods sold. Overproduction allows managers to spread fixed overhead costs across a larger number of units, lowering unit costs and improving margins (Cohen & Zarowin, 2010). Consequently, real activities manipulation is reflected in abnormal levels of cash flow from operations, production costs and discretionary expenses.

To calculate the abnormal levels of the three proxies for real earnings management, the following formula will be used:

Abnormal value = Actual value – normal value. **Eq.5**

The normal levels are unknown and will be estimated using a multiple regression model which will be explained below, per category.

5.3.2.1 Abnormal cash flow from operations (CFO)

The first proxy for real activity earnings management is the normal cash flows from operations (CFO) and is expressed as a linear function of sales and change in sales in the current period. To estimate the model, this study will run the following cross-sectional regression for each year and industry:

$$CFO_{it}/Assets_{i,t-1} = \beta_0 + \beta_1(1/Assets_{i,t-1}) + \beta_2(Sales_{i,t}/Assets_{i,t-1}) + \beta_3(\Delta Sales_{i,t}/Assets_{i,t-1}) + \varepsilon_{i,t} \quad \textit{Eq. 6}$$

Where:

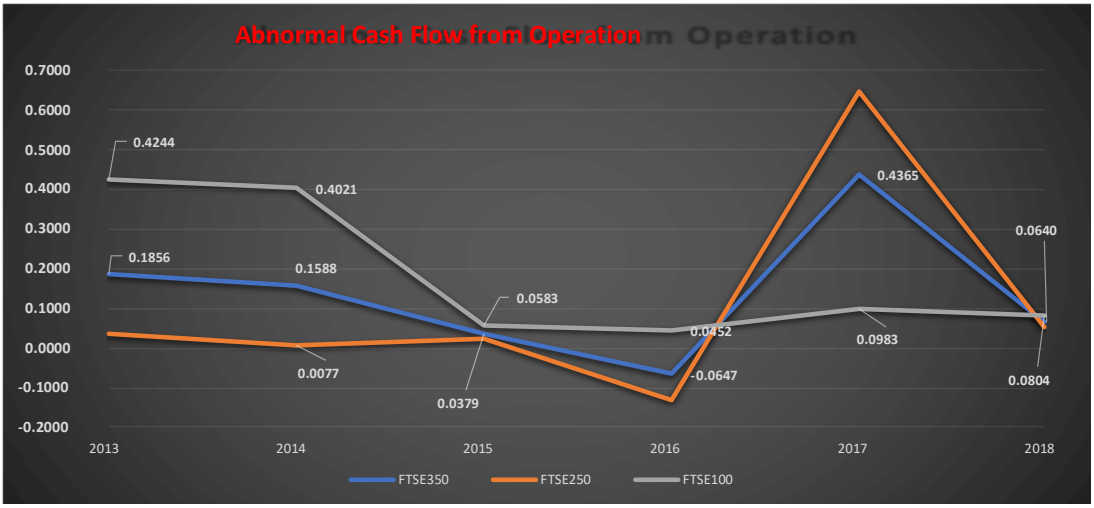
CFO_{it} Operational cash flows of firm 'i' in year 't'

$Assets_{it}$	Total assets of firm 'i' in year 't'.
$Assets_{i,t-1}$	Total assets of firm 'i' in prior year.
$Sales_{i,t}$	Total sales of firm 'i' in year 't'.
$\Delta Sales_{i,t}$	Change in sales ($S_t - S_{t-1}$) of firm 'i' in period 't'.
$\varepsilon_{i,t}$	Error or residuals.

The abnormal level of cash flow from operations (ACFO) is measured as the residuals (ε) from the above equation (Cohen *et al.*, 2010; Roychowdhury, 2006). The higher the residuals, the larger the amount of abnormal cash flow from operations, and the greater the increase in reported earnings through increasing sales. The following chart (6) illustrates the

magnitude and the direction of abnormal cash flow from operations of U.K non-financial companies.

Chart 6: Level of Abnormal Cash Flow from Operations



The graph in Chart 6 shows that the mean value of the abnormal level of cash flow from operations (ACFO) for the entire sample of non-financial firms listed in the FTSE 350 is 0.0479 (see Table 7), indicating that the average U.K non-financial firms engage in earnings manipulation by misrepresenting cash flows from sales operations. It is also observable that non-financial companies listed in the group FTSE 250 have a higher mean value than non-financial companies listed in the group FTSE 100 with mean values of 0.1848 and -0.0079, respectively. This means that small-sized companies practise more earnings management by misrepresenting cash flows from sales operations than their counterpart large-sized companies.

The outcome shown in the above chart (6) indicates that the level of EM through the misrepresentation of cash flows from sales operations has decreased from 2013 to reach its minimum level in 2016 in both groups. However, from

2016 onwards, while the level of engagement in EM through ACFO for large-sized companies has stabilised, the level of ACFO for small-sized companies has increased sharply to reach its maximum in 2017, starting to decrease in the following year to reach its minimum in 2018. Furthermore, by comparing the trends in both charts (5) and (6), it can be seen that non-financial firms tend to engage in mismanaging their earnings through discretionary accruals and abnormal cash flow from operations simultaneously with different levels. However, it seems that managers in the U.K, after the introduction of KAM in 2013, tend to switch from AEM to ACFO, especially after the mandatory period.

5.3.2.2 Abnormal discretionary expenses

The second proxy for real activity earnings management is the discretionary expenses. According to Roychowdhury (2006), discretionary expenses function as a model of "lagged assets" and "lagged sales", therefore, the study estimates the following model to derive 'normal' levels of discretionary expenses:

$$DISX_{it}/Assets_{i,t-1} = \beta_0 + \beta_1(1 / Assets_{i,t-1}) + \beta_2 (Sales_{i,t} / Assets_{i,t-1}) + \varepsilon_{i,t} \quad Eq.\ 7$$

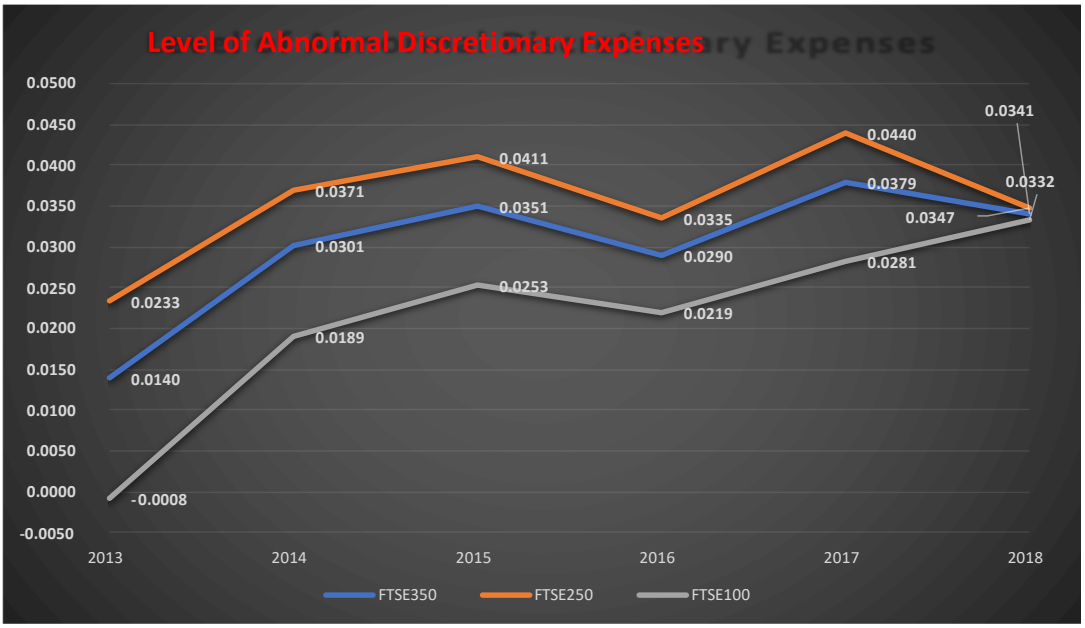
Where:

$DISX_{it}$ are the discretionary expenses of firm 'i' in period 't'.

$Assets_{i,t-1}$	Total assets of firm 'i' in prior year.
$Sales_{it}$	Total sales of firm 'i' in year 't'.
$\varepsilon_{i,t}$	Error.

Discretionary expenses are defined by Roychowdhury (2006) as the sum of advertising expenses, R&D expenses and selling, general and administrative expenses (SG&A). The abnormal level of discretionary expenditures (ADISX) is measured as the estimated residuals (ε) from the above equation (Cohen *et al.*, 2010; Roychowdhury, 2006). The residuals in Equation 6 are multiplied by -1 such that the higher the residuals, the larger the number of discretionary expenditures cut by firms to increase reported earnings. The following chart (7) illustrates the magnitude and the direction of abnormal discretionary expenses of U.K nonfinancial companies.

Chart 7: Level of Abnormal Discretionary Expenses



The graph in Chart 7 shows the estimation results of the metric model in the equation above (Eq.7). The outcome reveals that the mean value of the abnormal level of discretionary expenses for the full sample of non-financial firms listed on the FTSE 350 is 0.0092 (see Table 7). This means that the

sample's average non-financial U.K firms are more likely to manipulate earnings through abnormal discretionary expenses. In terms of comparing large-sized companies versus small-sized companies, it can be seen that the group of companies listed on the FTSE 250 have higher mean values than the group of companies listed on the FTSE 100, with mean values of 0.04314 and 0.02112, respectively. This indicates that companies in the first group manage their accounting earnings through ADISX more than companies in the second group, by employing techniques such as reducing expenditures of research & development, advertising and maintenance to improve their earnings, especially during difficult times. However, despite the fact that a reduction in discretionary expenses immediately impacts earnings improvement, it has long-term implications. For example, if a company drastically reduces its advertising budget, future sales revenue may suffer (Li, 2019b; Vorst, 2016). Likewise, a reduction in employee training expenditure may also harm the company's competitive edge, resulting in a decrease in future sales revenue (Ge & Kim, 2014b).

The results shown above indicate that both groups have increased the level of EM through ADISX in the first three years. Then, the level of ADISX slightly decreased in 2016 within both groups to grow in the following year 2017 to reach the maximum level by companies listed on the FTSE 250. However, from 2017 onwards, while the level of EM through ADISX decreased

in FTSE 250 companies, the level of ADISX in FTSE 100 companies increased to reach the same level as their counterparts, FTSE 250, in 2018.

Furthermore, the results from the graphs in Charts 5, 6 and 7 show that the level of abnormal cash flow from operations (0.0479) for the full sample is much higher than the level of the abnormal discretionary expenses (0.0092) and accruals-based earning management (0.0085). This implies that the sample's average non-financial U.K listed companies are more likely to engage in earnings manipulation through abnormal cash flow from operations rather than discretionary accruals and abnormal discretionary expenses.

5.3.2.3 Abnormal production costs

The third proxy for real activity earnings management is production costs and is defined as the sum of cost of goods sold (COGS) and change in inventories during the year (Roychowdhury, 2006). The normal level of production costs is calculated using the following regression model:

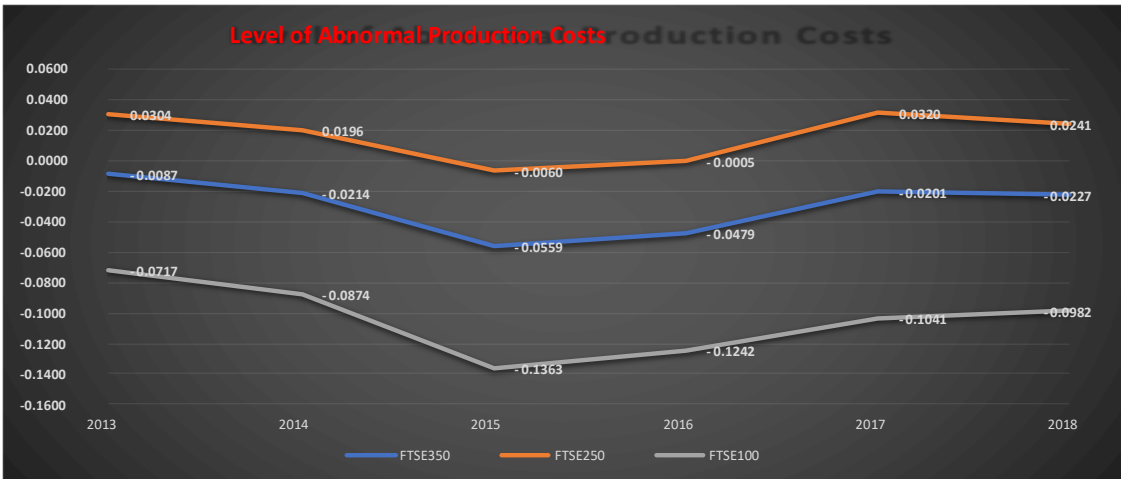
$$PROD_{it}/Assets_{i,t-1} = \beta_0 + \beta_1(1 / Assets_{i,t-1}) + \beta_2 (Sales_{i,t}/ Assets_{i,t-1}) + \beta_3(\Delta Sales_{i,t}/ Assets_{i,t-1}) + \varepsilon_{i,t} \quad \textit{Eq. 8}$$

Where:

$PROD_{it}$	Production costs of firm 'i' in period 't', which equals the sum of the cost of goods sold and change in inventory from year t-1 to t.
$Assets_{i,t-1}$	Total assets of firm 'i' in prior year.
$Sales_{it}$	Total sales of firm 'i' in year 't'.
$\Delta Sales_{it}$	Change in sales ($S_t - S_{t-1}$) of firm 'i' in period 't'.
$\Delta Sales_{i,t-1}$	Change in sales prior year of firm 'i' in period 't'.
$\varepsilon_{i,t}$	Error.

The abnormal level of production cost (APRODC) is measured as the residuals from the above equation (Eq. 8) (Cohen *et al.*, 2010; Roychowdhury, 2006). The higher the residuals, the greater the number of abnormal production costs, and the greater the increase in reported earnings through decreasing the cost of goods sold, which means a greater indication of real activities manipulation. The following chart (8) illustrates the magnitude and the direction of abnormal production cost of U.K non-financial companies.

Chart 8: Level of Abnormal Production Cost



The above chart (8) represents the estimated results of the metric model in the equation above (Eq.8). The results reveal that the mean value of the abnormal level of production costs for the full sample of non-financial firms listed on the FTSE 350 is -0.03079 (see Table 7). This implies that the sample's average non-financial U.K firms are more likely to manipulate earnings through abnormal production costs (APRODC). Managers employ techniques that encourage overproduction to spread fixed overhead costs across a larger

number of units, lowering unit costs and improving margins (Cohen & Zarowin, 2010). Notably, non-financial companies within the FTSE 250 have a higher mean value (0.01284) than the non-financial companies within the FTSE 100, which have a mean value of -0.10364. This indicates that small-capitalised companies manage their accounting earnings through APRODC more than large-capitalised companies. The results show that the level of APRODC moderately decreased over the first three years (2013-2015) in both groups in the sample. From 2015 onwards, the level of APRODC started to increase smoothly for two years to stabilise from 2017 to 2018 in both groups.

Furthermore, the outcomes from the graphs in Charts 5, 6, 7 and 8 show that the level of abnormal cash flow from operations (0.0479) for the full sample is much higher than the level of the abnormal discretionary expenses (0.0092), accruals-based earning management (0.0085) and the level of production costs (-0.03079). This suggests that the sample's average non-financial U.K listed companies are more likely to engage in earnings manipulation through abnormal cash flow from operations as the preferred method. The discretionary accruals and abnormal discretionary expenses are the second choice, and finally, the abnormal production costs are the last method. It appears that managers in U.K non-financial companies do not rely heavily on abnormal production costs as a technique to inflate their stated financial earnings because such a method of earnings manipulation is unsustainable, since the excessive stock of inventories could be an extra cost to store and insure. Moreover, it

could also become obsolete, resulting in significant future losses (Abad *et al.*, 2018; Braam *et al.*, 2015).

Table 7: Descriptive Analysis Abnormal (CFO, EXSP and PROD)

	Mean	Std. Err.	[95% Conf.	Interval]
ABNRML_CFO350	.0479103	.0044603	.0391453	.0566754
ABNRML_CFO250	-.0007898	.0040648	-.0087777	.007198
ABNRML_CFO100	.1847801	.0860522	.0156768	.3538833

Mean estimation — Number of obs = 462

	Mean	Std. Err.	[95% Conf.	Interval]
ABNRML_EXSP350	.0092	.0155646	-.0213864	.0397863
ABNRML_EXSP250	.043138	.0163309	.0110458	.0752301
ABNRML_EXSP100	.0211174	.0116826	-.0018402	.0440751

Mean estimation — Number of obs = 462

	Mean	Std. Err.	[95% Conf.	Interval]
ABNRML_PROD350	-.030794	.0159311	-.0621006	.0005126
ABNRML_PROD250	.0128423	.0224881	-.0313497	.0570342
ABNRML_PROD100	-.1036434	.0126624	-.1285266	-.0787603

5.3.2 Real Activity Earnings Management Using Principal Component Analysis

In accordance with Commerford *et al.* (2018), Zang (2012) and Cohen and Zarowin (2010), three aggregate proxies are constructed by summing the above proxies to obtain the total effects of real activity earnings management using the following equation:

$$\mathbf{REM_{AGG} = - ACFO + APRODC - ADISX \quad (Eq.9)}$$

The variable REM_{AGG} represents the aggregate real activity earnings management. The variables ACFO and ADISX are multiplied by -1 because it has been argued that these variables are negatively connected with earnings management. Then the variable APRODC is added to ACFO and ADISX variables after multiplying them by -1. A high REM_{AGG} value denotes aggressive earnings manipulation through real-world activities and is associated with lower earnings quality (Kuo *et al.*, 2014; Roychowdhury, 2006). However, the major weakness of the linear representation in the above equation (Eq.9) is the arbitrary use of equal combination coefficients for the three real activity earnings management variables. Such an application is unsatisfactory because it is extremely sensitive to extreme values (Badertscher, 2011), as the linear aggregation assumes that the three components of REM have the same weighting. This practice may yield correlation coefficients exhibiting substantial bias above the value of each component at the individual level (Clark & Avery, 1976). In addition, the supposition of a positive loading for the abnormal production costs metric, negative loadings for the abnormal cash flow from operations, and the abnormal discretionary expenses lacks a logical explanation. To eliminate the inadequacy of the method mentioned above and resolve the estimation concerns, this study will adopt the Principal Component Analysis (PCA) to create a single index of REM, a technique used to bring out strong patterns and emphasise variation in a dataset. PCA is a dimensionality reduction method that has four main parts: feature eigen decomposition,

covariance, principal component transformation, and choosing components in terms of explained variance. Therefore, the PCA can convert the set of correlated variables into a set of linearly uncorrelated variables based on the variance weights, thereby reducing the number of variables to their principal components (El Diri *et al.*, 2020).

The following chart (9) compares the trend in the level of accrual-based earnings management and real activity earnings management for the full sample of FTSE 350 between the years 2013 and 2018.

Chart 9: Levels of Real Activity and Accrual-based Earnings Management

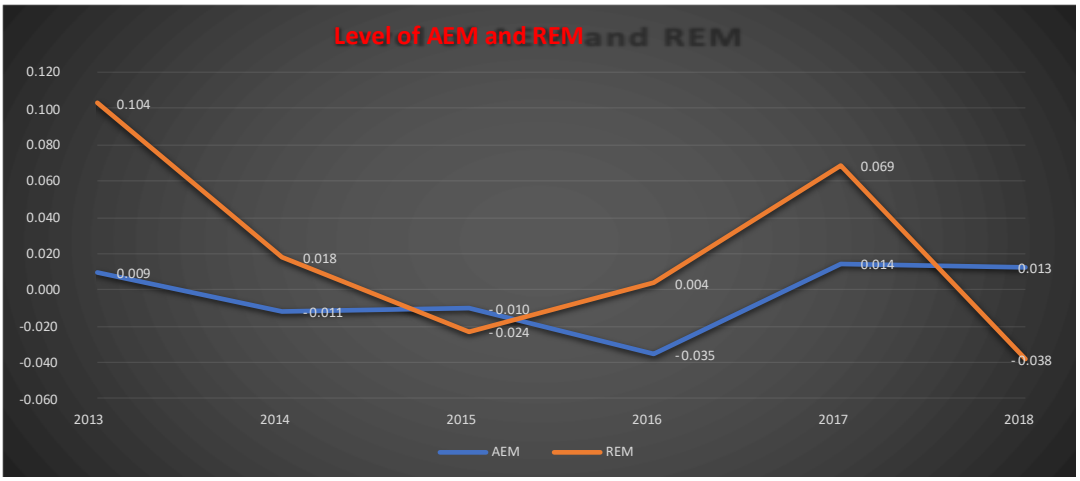


Chart 9 illustrates two graphs that represent the average mean values of the estimated accrual-based earnings management (AEM) and the estimated real activity earnings management (REM) for the full sample of FTSE 350. The AEM mean values were obtained from estimating Equation 4 employing the conventional Ordinary Least Squares (OLS) and using the modified Jones model (1995). The REM was obtained using the principal component analysis

for abnormal cash flows from operations, discretionary expenses, and production costs. However, the results uncover that the mean value of REM for the full sample of nonfinancial firms listed on the FTSE 350 is 0.0222, which is much higher than the mean value of AEM, which is -0.02. This signifies that the sample's average non-financial U.K firms are more likely to manipulate earnings through REM than AEM. However, from 2013 onwards it was noted that, the level of REM was greater than the level of AEM in most of the subsequent years until 2017, when it started to decrease sharply to reach the minimum level in 2018. This implies that most U.K firms' managers prefer to switch to real activity earnings management methods instead of discretionary accruals methods to mispresent their earnings. Prior studies (e.g., Ferentinou & Anagnostopoulou, 2016b; Zang, 2011; Gunny, 2010; Cohen & Zarowin, 2008) revealed that firms might prefer REM to misrepresent their earnings as AEM draws more attention from regulators and auditors. According to Kassamany *et al.* (2017), REM methods are unlikely to be detected as they are difficult for regulators and auditors to understand and scrutinise when compared to basic AEM. Additionally, previous studies (e.g., Ipino & Parbonetti, 2017; Ferentinou & Anagnostopoulou, 2016a) also found that managers switched from AEM to REM to mismanage their earnings after introducing IFRS. This may explain why managers of non-financial firms in the U.K have migrated from AEM to REM after the introduction of key audit matters in 2013.

5.4 Key Audit Matters Classification and Measurement

The main objective of this research is to investigate the impact of key audit matters (KAM) publications on earnings management behaviour of firms. Consequently, the researcher downloaded and analysed a total of 1206 audited reports published by the 201 non-financial firms which continually listed on the London Stock Exchange from 2013 to 2018. Each report was processed against some set criteria to identify the following aspects: auditee name, audit firm name, business sector, financial year-end, audit report date, audit firm network, the number of KAMs and the types of KAMs. All the key audit matters in each financial statement and other information relating to the characteristics of the internal audit committee and external auditing firm were manually collected and verified against the standards used by the Association of Chartered Certified Accountants (ACCA) in their research[11], where a total of 560 auditing reports across eleven countries and four continents have been examined (ACCA, 2018). The expanded selection of these countries by ACCA has provided an appropriate global representation level. In addition, in their classification of KAMs, the ACCA's research has comprehensively relied on the methodology used by the U.K Financial Reporting Council (FRC) in its reporting on the implementation of key audit matters in the U.K. According to FRC (2019), in their public consultation, the ACCA's research, in addition to

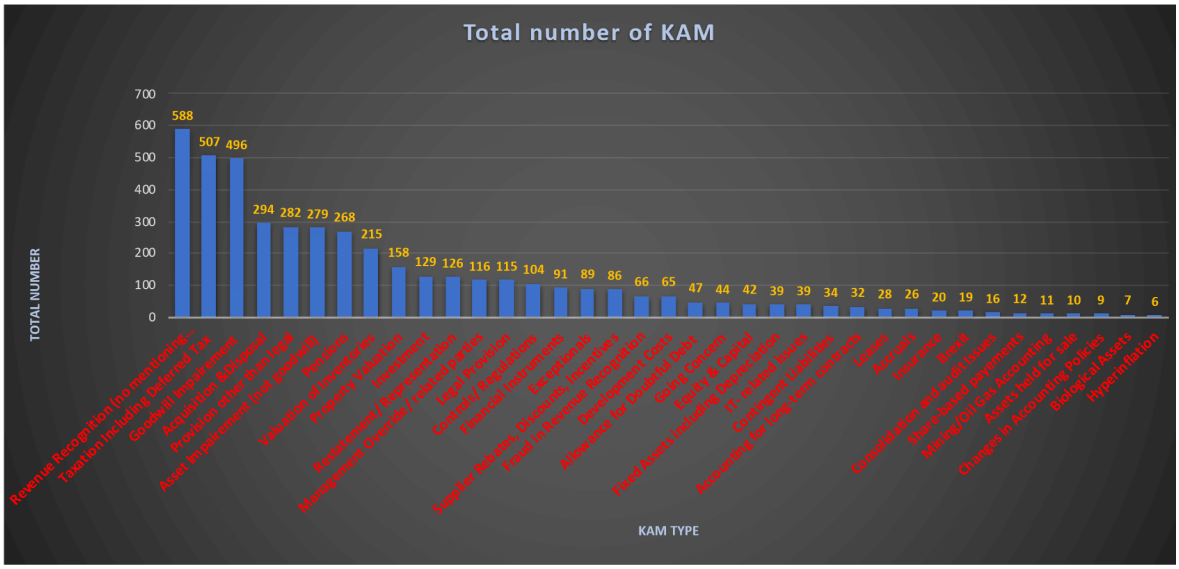
[11] Key audit matters: unlocking the secrets of the audit is available on: https://www.accaglobal.com/gb/en/technical-activities/technical-resources-search/2018/march/key-auditmatters.html.

KAMs and their classification being useful to investors, three additional benefits were identified relating to whether the disclosure of such KAMs encourage better (i) governance, (ii) audit quality, and (iii) corporate reporting. in addition, it has also been considered the extent to which the KAMs classification are consistent with, and complementary to, the International Federation of Accountants' (IFAC) report[12], where they have illustrated the type and classification of a wide range of risks of material misstatement. Subsequently, this study has obtained a total of 4515 KAMs (see Appendix Table 8) from 1206 audit reports, which were classified into 37 types[13] (see Figure 2) following ACCA's research and FRC methodology. The following chart (10) shows the distribution of the sample by the number of the type of KAM disclosed during the studied period.

[12] Auditor Reporting Standards Implementation: Key Audit Matters available on: https://www.ifac.org/knowledge-gateway/supporting-international-standards/discussion/auditor-reportingstandards-implementation-key-audit-matters

[13] This research has included Brexit in the list as a new type of KAM that affected some of the U.K companies.

Chart 10: Type and Total Number of KAMs



Note: This chart shows the 37 types of reported KAMs between 2013 – 2018 used in the study

Chart 10, above, illustrates the wide range of risks reported between 2013 and 2018, disaggregated between the FTSE 100 and the next FTSE 250 largest continually listed companies. This represents the total number of each individual risk type within the sample during the studied period. However, based on the emerging trend observed from the distribution of KAM in the above figure, it is noted that the top three recurring KAM topics that are predominant in U.K non-financial companies were revenue recognition, taxation and goodwill impairment, appearing in 13%, 11% and 11% of audit reports respectively, representing altogether 35% of the total of material misstatement risks. At the same time, acquisition and disposal, provision, asset impairment pension, valuation of inventories and property valuation were the

most referenced topics in U.K non-financial companies, representing altogether 33% of the total reported risks. In contrast, the rest of the 28 risk types are not dominant and represent an overall 32%, which means that auditors and the audit committee need to pay special attention to the most predominant and frequent risks affecting U.K companies, as those risks are critical risks with significant auditors' judgements concerning complicated accounting estimates (Carcello, 2012).

Furthermore, the impact of the type of key audit matter risk on earnings management must be considered in this study because of the possibility that certain types of risks and their magnitude have a different influence on the behaviour of EM. It is important to understand the extent to which the magnitude and type of these KAMs influence EM, because financial markets rely on the information disclosed in the audit report, as do decision-makers and the community at large (Danescu & Spatacean, 2018; Trpeska *et al.*, 2017). Hence, this study follows Sierra-Garcia *et al.* (2019) and Lennox *et al.* (2018) and distinguishes two variables for the specificity of KAM risk to examine their impact on accruals earnings management and real activity earnings management. The first variable is proxied by account-level-risk KAMs (ALKAM), and the second variable is proxied by entity-level-risk KAMs (ELKAM). The following two tables (9 and 10) illustrate the total number and type of material misstatement risks related to entity and account levels.

Table 9: Accounting-Level KAMs.

ALKAM	Total
Revenue Recognition (no mentioning fraud)	588
Goodwill Impairment	496
Asset Impairment (not goodwill)	279
Pensions	268
Valuation of Inventories	215
Property Valuation	158
Investment	129
Financial Instruments	91
Supplier Rebates, Discounts, Incentive	86
Fraud in Revenue Recognition	66
Equity & Capital	42
Fixed Assets Including Depreciation	39
Assets Held for Sale	10
Total	2467

Table 10: Entity-Level KAMs

ELKAM	Total
Taxation Including Deferred Tax	507
Acquisition & Disposal	294
Provision other Than Legal	282
Management Override/ Related Parties	116
Legal Provision	115
Controls/ Regulations	104
IT- Related Issues	39
Contingent Liabilities	34
Others[6]	557
Total	2048

Others includes the following KAMs:

- Restatement/ Representation
- Exceptional(s)
- Development Costs
- Allowance for Doubtful Debt
- Going Concern
- Accounting for long-term contracts
- Leases
- Accruals
- Insurance
- Brexit
- Consolidation and audit Issues
- Share-based payments
- Mining/Oil Gas Accounting
- Changes in Accounting Policies
- Biological Assets
- Hyperinflation

Table 9 represents the type, and the total number, of key audit matters risks related to account-level risks (ALKAM) included in the sample's audit report during 2013 and 2018. However, based on the emerging trend observed

from the distribution of each individual ALKAM in the above table, it is noted that the top two recurring ALKAM topics that are predominant in U.K non-financial firms during the studied period are revenue recognition and goodwill impairment, with the percentages of 24% and 20% respectively, representing 44% of the total of ALKAMs disclosed in the audit reports. At the same time, asset impairment excluding goodwill, pensions and valuation of inventories were the second most occurring accounting misstatement risks in the audit report in U.K non-financial companies, representing altogether 31% of the total reported ALKAMs. On the contrary, the rest of the eight ALKAMs are not frequent and represent an overall 25%.

Table 10 shows the type and the sum of the risks of misstatement related to the entity-level risks (ELKAM), based on the developing trend from the distribution of each individual ELKAM. It is observable that the most referenced ELKAM topic in the analysed reports during 2013 and 2018 is taxation, appearing in almost 25% of the reports of the sample. Concurrently, acquisition and disposal, and provision other than legal risks were the second most mentioned ELKAMs in the audited reports, with a percentage of 14% for each type representing 28% of the total ELKAMs. The rest of the risks, including “Others”, were the third most frequently declared ELKAMs, representing an overall 47% of risks related to entity-level disclosed in the audited reports during the studied period.

5.5 Model Specification

As previously stated, this study aims to examine the impact on EM of quality and quantity auditor pronouncements in the form of key audit matters disclosure for firms which continually listed on the London Stock Exchange from 2013 to 2018. The two types of earnings management (EM) used in this study are accrual earnings management (AEM) and real earnings management (REM). The AEM is considered the primary EM proxy, whereas the REM is used to check the robustness of the estimated basic correlation coefficients to variation in the definition of earnings management. To pre-empt the study's propositions and following other studies (e.g., Sierra-Garcia et al. (2019) and Lennox et al. (2018); Chen et al., 2007; Goncharov and Zimmermann, 2006; Bergstresser and Philippon, 2006; Cheng and Warfield, 2005), the following regression models are used.

Model 1: KAM Quality

$$EM_t = \beta_0 + \beta_1(ALKAM_t) + \beta_2(ELKAM_t) + \beta_3(IBOD_t) + \beta_4(BOEX_t) + \beta_5(BOA_t) + \beta_6(INDAC_t) + \beta_7(AUEX_t) + \beta_8(AUCA_t) + \beta_9(SIZE_t) + \beta_{10}(PROF_t) + \beta_{11}(LEV_t) + \beta_{12}(GROW_t) + \beta_{13}(LIQ_t) + \beta_{14}(EXAIND_t) + \beta_{15}(EXAEX_t) + \beta_{16}(EXAAC_t) + \beta_{17}(SWITCH) + \beta_{18}(DUM\_IND_t) + \beta_{19}(DUM\_FTSE_t) + \beta_{20}(DUM\_MAN_t) + e_t \quad \textbf{(Equation 10)}$$

Model 2: KAM Quantity

$$EM_t = \beta_0 + \beta_1(NB\_KAM_t) + \beta_2(IBOD_t) + \beta_3(BOEX_t) + \beta_4(BOA_t) + \beta_5(INDAC_t) + \beta_6(AUEX_t) + \beta_7(AUCA_t) + \beta_8(SIZE_t) + \beta_9(PROF_t) + \beta_{10}(LEV_t) + \beta_{11}(GROW_t) + \beta_{12}(LIQ_t) + \beta_{13}(EXAIND_t) + \beta_{14}(EXAEX_t) + \beta_{15}(EXAAC_t) + \beta_{16}(SWITCH) + \beta_{17}(DUM\_IND_t) + \beta_{18}(DUM\_FTSE_t) + \beta_{19}(DUM\_MAN_t) + e_t$$ **(Equation 11)**

Where the variables' measurements and definitions are explained in the following table:

Table 11: study's variables measurements and definitions.

Label	Variable	Description
Dependent Variables	**EM**	Represents earning management activities in a firm i for each year t, specifically, accruals-based earnings management (AEM) and real based activities earnings management (REM).
AEM		The value of discretionary accruals estimated using the modified Jones model (1995).
REM		The levels of real earnings activities will be examined by using abnormal levels of cash flows from operations, discretionary expenses, and production costs following the Roychowdhury (2006) and Cohen *et al.* (2008) models.
Independent Variables	**KAM**	Represents key audit matters disclosed in a firm's report in each year.
KAM Quality		The key audit matters quality represents a vector of key audit matters specificity covering risks of material misstatement related to account-level
		risks and entity-level risks disclosed in the audited report and their measurements as follows.
ALKAM		Measured as the total number of risks of material misstatement related to account-level risks disclosed in the firm's audit report for each year.
ELKAM		Measured as the total number of risks of material misstatement related to entity-level risks disclosed in the firm's audit report for each year.
KAM Quantity		The key audit matters quantity represents the magnitude of audit matters disclosed in the audited report. This is proxied by the variable (NB_KAM) which is measured as the total number of risks of material misstatement disclosed in the KAM section in the firm's audit report for each year.
NB_KAM		

Control Variables		
1- Company Characteristics (CC)		
1.1- Board Governance Characteristics (BC)		The BC symbol stands for board governance characteristics and represents vectors of the independence of board of directors, board expertise and board of directors' activity.
IBOD	Independence of Board of Directors	Measured as the number of independent nonexecutive directors divided by total number of directors on the board of the firm.
BOEX	Board Expertise	Measured as the proportion of experienced board members in accounting or related financial management of the total numbers of board members.
BOA	Board of Directors Activity	Measured as the average number of board of directors' meetings attendance held in a year.
1.2- Audit Committee Characteristics (ACC)		The ACC symbol stands for audit committee characteristics and represents vectors of independence of audit committee, audit committee expertise and audit committee's activity.
INDAC	Independence of Audit Committee	Measured as the number of independent nonexecutive directors on the audit committee divided by the total number of audit committee members.
AUCEX	Audit Committee Expertise	Measured as the proportion of experienced audit members in accounting or related financial management of the total members of the audit committee.
AUCA	Audit Committee Activity	Measured as the average number of audit committee meetings held in a year.
1.3- Firm's Financial Characteristics (FC)		The FC symbol stands for firm's characteristics and represents a vector of firm's characteristics including firm size, profitability, leverage, growth and liquidity.
SIZE	Firm Size	Measured by the Logarithm of total assets at the year-end.
PROF	Profitability	Measured by return on assets (ROA) which is calculated as net income divided by lagged total assets.
LEV	Leverage	Measures as the total liabilities divided by total assets at the end of the financial year.
GROW	Growth	Measured by market to-book ratio (MBV) which is used as a proxy to control for a firm's growth prospect.
LIQ	liquidity	Measured as the ratio of current assets divided by current liabilities at the end of the financial year.
2- External Governance Mechanisms (EGM)		

2.1- External Auditors Characteristics (EXC)		The EXC symbol stands for external auditors' characteristics and represents a vector of external audit characteristics including the independence of external auditors, auditors' industry expertise and external audit activity.
EXAIND	External Auditor's Independence	Represents external auditor's independence which is measured as a dummy variable of (Big 4) that takes the value of 1 when a listed firm is audited by KPMG, PwC, Deloitte, or EY and 0 otherwise.
EXAEX	External Auditor's Industry Expertise	Used to assess the effect of KAMs disclosed by auditors' industry specialist on EM, which takes the value (1) when the incumbent auditor is an expert in the industry where their clients operate and the value (0) otherwise.
EXAAC	External Auditor's Activity	Represents external auditor's activity which is measured as the total fees paid by the firm to the auditing company for their auditing services.
SWITCH	Dummy Variable for Switch	Takes the value 1 if the client has changed its external auditor since the previous year and takes the value 0 otherwise.
2.2- Industry Regulation (IND)		
DUM_IND		Dummy variable for industry and represents the set of industries. This study has included five industrial sectors (IND1, IND2, IND3, IND4 and IND5) in the regression model as control variables to capture the possible effects of sectoral practices on managerial behaviour.
2.3- Stock Market (STM)		
DUM_FTSE		Dummy variable for FTSE index which is a dichotomous dummy variable that takes a value of 1 for the sample of large-capitalised FTSE 100 companies and 0 for small-capitalised FTSE 250 firms.
2.4- Professional Auditing Standard (AS)		
DUM_MAN		Dummy variable for mandatory implementation which takes the value 1 if the year of KAM disclosure is mandatory and takes the value 0 if the year is voluntary. These external laws and standards require companies to adopt a certain type of accounting method.
3- Others		
Subscripts i and t		The subscript i and t indicate a panel data structure comprising information on a cross-section of a firm i observed throughout time t.
Constant term β_0		The constant term β_0; mean value of EM is when all the explanatory variables are equal to zero.

Coefficient vectors β_1, β_2, β_3 ….	The estimated coefficient vectors that measure the marginal contribution of the selected explanatory variable to the EM changes, assuming that all other variables' value does not change. Therefore, they give the slope of the association between EM and the corresponding individual variables, holding all the other independent variables fixed. For instance, in the **equation 10** betas represent the following: β_1, β_2: the estimated coefficient vectors that measure KAM quality. From β_3 to β_{13} represent the estimated coefficient vectors that measure company characteristics and
	from β_{14} to β_{19} represent the estimated coefficient vectors that measure external governance characteristics. In the **equation 11** betas represent the following: β_1: the estimated coefficient vectors that measure KAM quantity. From β_2 to β_{12} represent the estimated coefficient vectors that measure company characteristics and from β_{13} to β_{18} represent the estimated coefficient vectors that measure external governance characteristics.
Residual e_t	Represents a vector of residuals that are expected to be normally distributed independently and identically with mean zero and common variance.

5.6 Data Analysis Procedures and Econometric Issues

This section describes the major characteristics of the estimation method used in the analysis. Also, it highlights the econometric issues which were addressed to mitigate potential misspecification errors. The discussion is organised under (i) estimation approaches, (ii) econometric issues and (iii) robustness checks.

5.6.1 Estimation approaches

To investigate the impact of KAMs quality and quantity on EM, this study conducted preliminary data analysis involving descriptive statistics, univariate analysis, and correlation matrix.

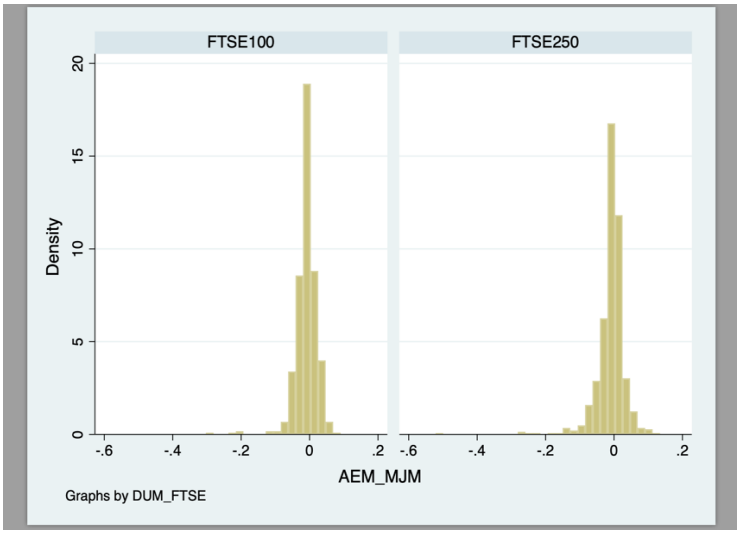
The descriptive statistical approach summarises data in terms of central tendency and distribution for a single variable in a coordinated form (Cooksey, 2020). The central tendency specifies the mean, median, standard deviation, minimum, and maximum values for each variable (Park, 2008). At the same time, the sample distribution is represented in terms of skewness and kurtosis (see Table 12). Kurtosis refers to the peakedness (flatness) of distribution, whereas skewness measures its symmetry, and both measures are used to determine the 95th percentile of data distribution normality. According to Abdul Rashidah and Ali (2006), a normal distribution of the data expects that the standard of skewness and kurtosis would be between the two values ± 1.96 and ± 2, respectively. In addition, the histogram in Figure 3 shows that the dataset is roughly normal and symmetrical, which means that the difference is normally distributed.

Table 12: Skewness/Kurtosis Tests for Normality

------ joint ------

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj_chi2(2)	Prob>chi2
AEM_MJM	1,206	0.000	0.000	.	0.000
REM_PCA	1,206	0.000	0.000	.	0.000
AIKAM	1,206	0.000	0.500	21.080	0.000
ELKAM	1,206	0.000	0.395	47.670	0.000
NB_KAM	1,206	0.000	0.000	.	.
IBOD	1,206	0.000	0.000	52.210	0.000
BOEX	1,206	0.618	0.257	1.540	0.464
BOA	1,206	0.000	0.000	.	.
INDAC	1,206	0.000	0.013	.	0.000
AUCEX	1,206	0.000	0.000	.	0.000
AUCA	1,206	0.000	0.000	.	.
EXAIND	1,206	0.000	0.000	.	.
EXAEX	1,206	0.000	0.000	.	.
EXAA	1,206	0.000	0.000	.	.
SWITCH	1,206	0.000	0.000	.	.
SIZE	1,206	0.000	0.000	.	.
PROF	1,206	0.000	0.000	.	.
LEV	1,206	0.000	0.000	.	0.000
GROW	1,206	0.000	0.000	.	.
LIQ	1,206	0.000	0.000	.	0.000
DUM_MAN	1,206	1.000	.	.	.
DUM_FTSE	1,206	0.003	.	.	.
IND1	1,206	0.000	0.013	.	0.000
IND2	1,206	0.000	0.013	.	0.000
IND3	1,206	0.000	0.297	.	0.000
IND4	1,206	0.000	0.010	.	0.000
IND5	1,206	0.000	0.773	.	0.000

Figure 3: Histogram Graphs by FTSE 100 and FTSE 250



Furthermore, this study performed univariate equality of means test to check whether the mean values for the selected variables for FTSE 100 and FTSE 250 categories are statistically similar (See Table 13). The results indicate that the mean difference is not equal to zero. In addition, tests for equality of variance and median have been carried out. using the Wilcoxon rank-sum test (see Table 14) and Mann–Whitney two-sample statistic (Mann & Whitney, 1947; Wilcoxon, 1945) respectively. The equality of medians has been performed using a non-parametric k-sample to test the null hypothesis (see Table 15), where the k samples were drawn from populations with the same median. The current study computed the chi-squared test statistic for the two samples, both with and without a continuity correction.

Table 13: Two-Sample T-Test (FTSE100 & FTSE250) for Equality of Means

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	666	.0721593	.031635	.8164043	.0100427	.1342758
1	540	-.0889965	.0508986	1.182777	-.1889805	.0109875
combined	1,206	-8.13e-09	.0287958	1.000008	-.0564956	.0564955
diff		.1611558	.0577462		.0478615	.2744501

diff = mean(0) - mean(1) t = 2.7908
Ho: diff = 0 degrees of freedom = 1204

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.9973 Pr(|T| > |t|) = 0.0053 Pr(T > t) = 0.0027

Note: 0 = FTSE250 and 1= FTSE100

Table 14: Two-sample t test with equal variances

	obs1	obs2	Mean1	Mean2	dif	St Err	t value	p value
AEM MJM by DUM FTS~1	666	540	-0.009	-.009	0	.003	0	.997

Two-sample t test with equal variances

	obs1	obs2	Mean1	Mean2	dif	St Err	t value	p value
REM PCA by DUM FTS~1	666	540	0.072	-.089	.161	.058	2.8	.005

Table 15: Equality of Median Test

median AEM_MJM, by (DUM_FTSE) medianties (below)

Median test

Greater

than the	DUM_FTSE		
median	0	1	Total
no	297	306	603
yes	369	234	603
Total	666	540	1,206

Pearson chi2(1) = 17.3838 Pr = 0.000
Continuity corrected:
Pearson chi2(1) = 16.9043 Pr = 0.000

On the other hand, multicollinearity is another misspecification issue that impacts linear regression equations. Multicollinearity refers to a linear relationship between two or more variables that could generate major problems with the estimation of model parameter coefficients (Kim, 2019). Nonetheless, there are various methods to detect multicollinearity. One of the most used methods is the Variance Inflation Factor (VIF), which detects multicollinearity while conducting regression analysis. This method estimates the level of inflation of the regression coefficient variance caused by multicollinearity. Gujarati (2008) and Echambadi & Hess (2007) confirmed that a multicollinearity problem exists if the VIF value is higher than 10 (see Table 16). However, the variance inflation factor of each independent variable in the

estimation of the main regression model has been examined, and it was found that the VIFs for all independent variables are smaller than. Furthermore, the maximum VIF is 9.8 between DUM_MAN and EXAA variables, which is lower than the common rule of 10 as a sign of severe multicollinearity. This result implies that none of the correlations are large enough to raise a concern associated with multicollinearity.

Table 16: Variance inflation factor

Variance inflation factor KAM quantity

	VIF	1/VIF
IND5	5.201	.192
IND3	4.825	.207
IND2	4.351	.229
IND1	3.002	.333
IND4	2.821	.354
PROF	2.635	.379
GROW	2.501	.4
SIZE	2.443	.409
IBOD	1.431	.699
LIQ	1.34	.746
LEV	1.322	.756
NB_KAM	1.268	.788
DUM FTSE	1.258	.795
INDAC	1.213	.825
AUCA	1.166	.858
BOA	1.163	.86
EXAIND	1.151	.869
BOEX	1.114	.898
EXAEX	1.089	.918
AUCEX	1.083	.923
DUM MAN	1.018	.982
EXAA	1.018	.982
Mean VIF	14.939	.

Variance inflation factor KAM quality

	VIF	1/VIF
IND5	5.111	.195
IND3	4.980	.201
IND2	3.438	.291
IND1	3.233	.309
IND4	3.019	.331
PROF	2.637	.379
GROW	2.501	.4
SIZE	2.473	.404
IBOD	1.432	.698
LIQ	1.347	.742
LEV	1.327	.753
DUM FTSE	1.277	.783
ELKAM	1.255	.797
INDAC	1.213	.825
AUCA	1.167	.857

BOA	1.163	.86
EXAIND	1.153	.868
BOEX	1.114	.898
AlKAM	1.098	.911
EXAEX	1.092	.916
AUCEX	1.084	.923
DUM MAN	1.019	.982
EXAA	1.018	.982
Mean VIF	14.341	.

In addition, this study uses a much simpler method for testing the multicollinearity amongst explanatory variables, which is a pairwise correlation matrix (see Table 17 in the appendix). This latter is employed to ascertain the degree of correlation between each pair of explanatory variables used in the current study (Gujarati & Porter, 2011). The correlation coefficient ranges from -1 to +1, where ±1 indicates a perfect linear relationship between variables. Empirical studies (e.g., Harris & Raviv, 2008; Gujarati, 2008; Grewal *et al.*, 2004) emphasised that the greater the level of correlation coefficients between explanatory variables, the greater the problem of multicollinearity. Conversely, a low correlation coefficient signals that the likelihood of a multicollinearity problem is minimised. However, the above studies suggested that a 0.8 correlation coefficient is the cut-off point for a considerable multicollinearity bias that would influence regression results. In addition, this research uses various dummy explanatory variables in the model regression. However, the current study is cautious about how these dummy explanatory variables are included and how the estimated regression coefficients for these dummies are interpreted. To avoid multicollinearity and the dummy variable trap, the rule is to either keep the intercept and exclude the dummy for one category or drop the

intercept term and include a dummy for each category. For instance, a total of five industrial sector categories (IND_1, IND_2, IND_3, IND_4 and IND_5) are included in the regression model, with the exclusion of the IND_5 dummy variable to avoid the dummy variable trap.

5.6.2 Multivariate Analysis

Accounting and finance researchers commonly use multivariate regression models to measure the association between earnings management and the independent variables of interest, which are usually treated as explanatory variables (e.g., audit quality, corporate governance, audit committees, external auditors, policies etc.). Basic regression methods such as ordinary least squares (OLS) measure the differences in outcome variables between the population in the sample at the mean, or methods that measure the average effect of a population after adjustment for other explanatory variables of interest, such as logistic regression models (Crown, 2014). These are frequently performed on the assumption that the regression coefficients are constant across the population – that is, that the relationships between the independent variables and the explanatory variables remain constant across different values of the variables.

In general, statistical multivariate data analysis methods are divided into two broad categories: parametric and non-parametric methods. Nevertheless,

the characteristics and nature of the data utilised in the study will determine which method should be applied. Gujarati (2003) recommends testing the following five fundamental assumptions before deciding on a multivariate analysis model: (1) Normality: this assumption presupposes that the data is normally distributed. (2) Linearity: according to this assumption, the correlation between dependent and independent variables should be linear. (3) Multicollinearity: this assumption implies that there should be no collinearity between independent variables. (4) Heteroscedasticity: the variance of the dependent variable must be consistent. (5) Independence: this assumption implies that an observation's error term should not be correlated with other observations' error terms. However, if these assumptions are violated, the OLS regression results would be biased and inconsistent (Gujarati 2003). For example, considering normality, the data distribution underpinning this study in the previous chapter indicates the presence of outliers, which violates the OLS regression assumption. In addition, when these assumptions are contravened, some regression estimators, such as quantile regression, offers a good alternative to OLS (Onu & John, 2016). Quantile regression deals with numerous issues that the OLS often encounters, such as heteroscedasticity; also, information about the tails of a distribution are lost, by focusing on the mean as a measure of location; and OLS regression is sensitive to extreme outliers which can dramatically alter the results. The quantile regression, however, is robust to respond outliers and is less sensitive to outlying observations. By this, quantile

regression can provide complete information about the connection between the response variable and covariates throughout the whole conditional distribution while making no distributional assumptions about the error term in the model. Besides, quantile regression can provide a very useful visualisation of changes in the conditional distribution of longitudinal data sets over time (e.g., heteroscedasticity). When the mean regressions differ significantly, the quantile regression might indicate which component of the conditional distributions diverge (Karlsson, 2006), as it estimates the conditional median as an alternative of the mean when the conditions of linear regression are not met. Furthermore, to deal with the non-normality problem and reduce the specification error arising from the outliers, the original variables in this study are transformed by taking the natural logarithms of both the dependent and all continuous explanatory variables. As a result, the estimated parameter slope coefficients can be interpreted simply as elasticities. Due to the advantages mentioned above, this study adopts quantile regression to test the impact of key audit matters on earnings management because it will provide a complete picture of the relationship between random variables.

5.6.3 Panel Data Regression Analysis

This research is a quantitative study that empirically investigates the behaviour of earnings management in the presence of key audit matters in the audited report. The current study adopts data from the six years from 2013 to

2018 for 201 non-financial firms which continually listed on the London Stock Exchange, implying final balanced panel sample, composed of 1206 firm-year observations. However, due to missing data for some of the years of study, an unbalanced panel data structure was created for this study, which has become ubiquitous in observational analyses across accounting and finance research. This structure combines observations across firms and over time. This allows identification via differences-indifferences approaches that take advantage of within unit variation and help researchers to eliminate any unobservable heterogeneity in the dataset, making it a valuable technique for analysing linear data.

Furthermore, panel data regression has significant advantages in measuring non-observable individual effects, which reduces the problem of the reliability of independent variables in explaining the dependent variable (Serrasqueiro & Nunes, 2008). According to Sun *et al.* (2010) and Chih *et al.* (2008), panel data regression improves statistical efficiency by and increasing the degree of freedom. Besides, panel data can be used to analyse behavioural models that are considered complicated and are likely to be achieved by combining cross-sectional and time-series data to distinguish and measure non-observable effects when using the analysis of cross-sectional or data time-series (Troeger, 2019). Due to the benefits mentioned above, this study follows previous studies (e.g., Abdelsalam *et al.*, 2016; Ali *et al.*, 2015; Wang & Hussainey, 2013; Sun *et al.*, 2010; Chih *et al.*, 2008) and uses panel data in its

regression analysis to examine the connection among its variables. The results are shown in the following tables 18 and 19.

Table 18: Quantile Regression using the Modified Jones Model and KAM Quantity

Variable \ Quantile	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
NB_KAM	-.005	-.004**	-.003**	-.003***	-.003***	-.003***	-.003***	-.002***	-.002***	-.001***	-.001**	-.001*	-.001	-.001	-.001	-.001*	-.001*	-.001*	-.003***
IBOD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0**
BOA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0*	0
AUCEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUCA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SIZE	0	0	0	0	0	0	0	0	0	0*	0**	0***	0***	0***	0***	0***	0***	0***	0***
PROF	.001*	.001***	.001***	.001***	.001***	.001***	.001***	.001***	0***	0***	0***	0***	0***	0***	0***	0***	0***	0**	0
LEV	-.024	-.04**	-.026*	-.024***	-.024***	-.016**	-.015**	-.016***	-.017***	-.017***	-.019***	-.02***	-.024***	-.029***	-.035***	-.048***	-.054***	-.049***	-.039***
GROW	0	0***	0***	0	0*	0**	0	0	0	0	0	0	0	0	0	0*	0*	0*	0
LIQ	-.003	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	0	0	-.001	-.001	-.001	-.001	-.002**	-.002***	-.002**	-.002*
EXAIND	.118***	.063***	.016	.019**	.012	.013*	.016***	.014**	.006	.007	.002	.007	.011*	.011*	.012*	.019***	.022***	.025***	.003
EXAEX	.001	.001	0	0	-.001	-.001	-.001	-.001*	-.001**	-.001**	-.001**	-.001**	-.001***	-.001**	-.001*	-.001**	-.001***	-.001	0
EXAA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SWITCH	-.002	-.002	.002	.002	.002	.001	0	-.001	0	0	0	-.001	-.002	-.002	-.004	-.004	0	-.003	-.004
DUM_MAN	-.001	0	.001	.001	.002	.001	0	-.001	0	-.001	-.001	-.001	-.002	-.001	-.001	0	.001	0	-.002
DUM_FTSE	.017	.008	.005	.003	0	-.001	-.001	-.001	0	-.001	0	-.001	-.001	-.001	-.001	-.002	-.002	-.004*	-.009***
IND1	.021	.019**	0	-.001	-.002	0	-.002	-.001	-.002	-.003	-.001	-.002	-.002	0	0	.001	.002	0	-.012**
IND2	.026	.031***	.017***	.017***	.013***	.014***	.011***	.009***	.007***	.005**	.004	.004	.004	.004	.003	.003	.003	-.002	-.01*
IND3	.028	.03***	.01*	.01***	.009***	.009***	.006**	.006**	.004	.003	.003	.004	.004	.005*	.008**	.011***	.011***	.007**	.004
IND4	-.032	.007	-.012*	-.01**	-.01***	-.007**	-.007**	-.004	-.006**	-.003	.001	.007***	.012***	.016***	.017***	.019***	.019***	.019***	.013***
Constant	-.19	-.161**	-.039	-.011	.010	-.004	-.008	-.009	-.007	-.013	-.013	-.014	-.002	-.008	-.005	.022	.033	.019	.052

Table 19: Quantile Regression using the Modified Jones Model and KAM Quality

Variable \ Quantile	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95
AlKAM	-.003	-.002	-.002	-.002**	-.002**	-.002*	-.001	-.001*	-.001	-.001	0	-.001	0	0	0	0	0	0	-.003*
ELKAM	-.008	-.004*	-.005***	-.004***	-.004***	-.003***	-.003***	-.003***	-.002***	-.002**	-.001	-.001	-.001	-.001	-.001	-.002*	-.002**	-.002*	-.003***
IBOD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDAC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUCEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUCA	0	0	0	0	0	0	0	0	§0	0	0	0	0	0	0	0	0	0	0
SIZE	0	0	0	0*	0*	0*	0*	0	0	0	0*	0***	0***	0***	0***	0***	0***	0***	0***
PROF	.001*	.001***	.001***	.001***	.001***	.001***	.001***	0***	0***	0***	0***	0***	0***	0***	0***	0***	0***	0**	0
LEV	-.015	-.039*	-.027**	-.025***	-.022***	-.016**	-.015**	-.017***	-.016***	-.017***	-.021***	-.021***	-.025***	-.027***	-.034***	-.048***	-.053***	-.052***	-.042***
GROW	0	0***	0***	0	0*	0**	0	0	0	0	0	0	0	0	0	0	0	0**	0*
LIQ	-.002	-.001	-.001	-.002*	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001	-.001*	-.001	-.002*	-.002***	-.003***	-.002**	-.002*
EXAIND	.115***	.066***	.018	.019**	.013*	.013**	.015**	.014**	.007	.007	.003	.007	.01*	.01	.013*	.021***	.025***	.025***	.004
EXAEX	-.001	-.001	-.001	-.002***	-.002***	-.002***	-.002***	-.002***	-.002***	-.002***	-.001***	-.002***	-.002***	-.001***	-.001**	-.001***	-.002***	-.001***	-.001**
EXAA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SWITCH	-.002	-.003	-.001	.002	.001	0	-.001	-.002	0	-.001	-.001	-.001	-.002	-.003	-.004	-.003	-.001	-.002	-.005
DUM_MAN	0	.002	.001	.001	.001	0	-.001	-.001	0	-.001	0	-.001	-.001	-.001	0	0	.001	0	-.002
DUM_FTSE	.016	.006	.004	.003	0	-.002	-.002	-.001	-.001	-.001	0	-.001	-.001	-.001	-.001	-.003	-.002	-.004*	-.007**
IND1	.016	.018**	0	0	0	.001	-.001	-.001	-.002	-.002	-.002	-.002	-.001	0	.001	.002	.003	0	-.008*
IND2	.021	.032***	.017***	.016***	.014***	.013***	.01***	.008***	.007**	.007**	.005*	.004	.005*	.004	.004	.004	.003	-.001	-.009*
IND3	.017	.029***	.011*	.01***	.008**	.008***	.006**	.005*	.003	.004	.004	.004	.005*	.005*	.007**	.01***	.012***	.005	.002
IND4	-.032*	.007	-.01*	-.011***	-.009**	-.008**	-.006**	-.005	-.006**	-.002	.002	.007**	.011***	.015***	.017***	.019***	.02***	.018***	.016***
Constant	-.198	-.176**	-.065	-.004	.011	-.005	-.012	-.015	-.013	-.017	-.019	-.01	-.002	-.006	-.009	.015	.02	.023	.055

5.6.4 Robustness Checks

This study conducted an additional sensitivity analysis to confirm the robustness of outcomes to various estimators and variable measures. For example, the metrics for accrual-based earnings management using the modified Jones model (1995) were replaced with the variable for real activity earnings management (REM) following the recommendation of Roychowdhury (2006). The latter suggested three main REM indicators: abnormal cash flow from operations, abnormal production costs, and abnormal discretionary expenses. Therefore, this study uses all the three metrics mentioned above to approximate U.K-listed firms' real activity earnings management practices. In addition, the metric for REM is computed using the Principal Component Analysis (PCA) method to combine these individual REM indicators into a composite index for REM due to its major attributes and advantages mentioned in Chapter 3 (Section 5.3.2). As noted earlier in Section 5.4.2, both the basic and robust regression models are estimated using the quantile regression method.

5.7 Summary

This chapter presents the data and research methods employed in the study to calculate the main variables of interest that underpin the study objectives. It explains the sampling process and validates the data sources and sample distribution across time and selected industry sectors. The overall sample consists of non-financial firms continuously listed on the FTSE 350,

and the impact of key audit matters on earnings manipulation in the U.K. is investigated. These firms are further categorized into two groups based on their capitalization: large-capitalized firms (FTSE 100) and small-capitalized firms (FTSE 250). This division helps determine whether large and small businesses engage in earnings misreporting to the same extent.

Accrual earnings management is measured using the modified Jones's model (1995). The Roychowdhury (2006) model is employed to examine levels of real activity earnings management using abnormal levels of cash flows from operations, discretionary expenses, and production costs. The overall findings indicate that non-financial U.K. firms in the sample are more likely to manipulate earnings through real activity-based earnings management (REM) than through accrual-based earnings management (AEM). Additionally, it is discovered that the extent of abnormal cash flow from operations is significantly greater than the extent of abnormal discretionary expenses and accruals-based earnings management, as well as the level of production costs.

Furthermore, this study uses several proxies to measure key audit matters (KAM). Two categories of KAM are employed to assess the impact of earnings management (EM) and KAM on 1,206 firm-year observations from 2013 to 2018. The first category is KAM quantity, represented by the number of KAMs. The second category is KAM specificity, represented by entity-level-risk and account-level-risk KAMs. A total of 4,515 KAMs from 1,206 audit reports are obtained, classified into 37 types. The findings reveal that revenue

recognition, taxation, and goodwill impairment are the most common material misstatement risks, while revenue recognition and goodwill impairment are the most common account-level risks (ALKAMs).

This chapter also describes the regression models used to examine the relationship between earnings management (EM) and key audit matters (KAM). It identifies the variables of primary interest and control variables, along with their relationships with the measures of EM, including accrual-based EM and real activity EM. Two variables represent the vector of KAMs: KAM quality and KAM quantity, which are the primary variables of interest. The control variables are classified into two main categories: company characteristics and external governance mechanisms. The former includes board governance characteristics (BC), audit committee characteristics (ACC), and financial characteristics (FC). The latter involves external auditors' characteristics (EXC), industry regulation (IND), stock market regulation (STM), and professional auditing standards (AS).

In addition, this study also expects a negative relationship between EM and external governance mechanisms and the most of firm's financial characteristics, as they play an important role in restraining firms' managers from manipulating the accounting information (Mutende *et al.*, 2017). These expected relationships are verified based on an unbalanced panel data structure constructed using 206 firms over six years from 2013 to 2018. Before deciding on a multivariate analysis technique, three key assumptions were investigated:

normality, linearity, and heteroscedasticity. Furthermore, the current study opts for the quantile regression method as a substitute for OLS to overcome the specification errors of non-normality and heteroscedasticity. The following chapter reports the empirical results, starting with the descriptive statistics for the variables of study and later the quantile regression outcomes.

Chapter Six: Empirical Results and Discussion

6.1 Introduction

The previous chapter reviewed the features of the research methodology. It discussed the regression models adopted in the study to portray the association between the independent variables and earnings management. EM are approximated by accrual-based earnings (AEM) and real earnings activities (REM). The independent variables of main interest are KAM proxied by KAM quality and KAM quantity. In addition, the regression model includes a set of control variables that might influence managers' reporting behaviour. The control variables are classified into two main categories: company characteristics and external governance mechanisms. The former includes board governance characteristics (BC), audit committee characteristics (ACC) and financial characteristics (FC). The latter involves external auditors' characteristics (EXC), industry regulation (IND), stock market regulation (STM) and professional auditing standards (AS). Furthermore, the chapter defined all the variables and their measurement together with the hypotheses on their expected relationship with EM.

The current chapter reports the empirical results on the impact on EM of KAM, company characteristics and external governance mechanisms among the sample of 201 nonfinancial firms which listed consistently on the London Stock Exchange from 2013 to 2018. The argument here is organised as follows: Section 6.2 presents the results of the univariate analysis comprising descriptive

statistics and correlation matrix of all the variables underpinning the empirical model. Section 6.3 reports the empirical results obtained from the quantile regression model that involves AEM as the dependent variable and the selected explanatory variables. Finally, Section 6.4 concludes with remarks arising from the discussion in this chapter.

6.2 Univariate Analysis

6.2.1 Descriptive Analysis

Tables 6 and 7 provide descriptive statistics for all variables used in this study's empirical analysis. It reports the values for mean, standard deviation, minimum and maximum as well as the results of the non-parametric tests on the equality of these summary statistics across the sample.

6.2.1.1 Accrual-Based EM

As it was noted earlier, the values reported in the table mentioned above are aiming to capture the magnitude and the direction of earnings mismanagement, unlike other studies that use the absolute value to capture only the extent of EM. However, the table 6 shows that the level of AEM proxied by the discretionary accruals (DACC) using the modified Jones model (MJM) has a negative mean value of -0.0085 for the full sample of the study (FTSE 350). Also, it reports minimum and maximum values of -0.521 and 0.134, respectively, for the same group. In addition, the standard deviation is 0.035, from which it can be concluded that the discretionary accruals are highly

dispersed in listed companies on the FTSE 350 (Greene, 2008). Other studies have also reported a negative average discretionary value. For example, Acar & Yilmaz (2020) found that listed production firms from six Gulf Cooperation Council (GCC) countries reported a negative mean value of -0.0259 from 2009 to 2015. Similarly, Iatridis & Dimitras' (2013) found the average DACC in their sample of five European countries ranged between -0.46 for Greece and -0.10 for Ireland. Therefore, the DACC of this study seems less negative than those mentioned earlier.

Generally, the current study's t-tests indicate that the mean central tendency is significantly negative during the implementation of KAM. This means that the U.K-listed firms' managers operating in the group FTSE 350 do engage in downward EM through discretionary accruals to record lower profits (income decreasing). These findings also reinforce the emerging notion that the U.K-listed firms are likely to manage earnings to meet the stakeholders' expectations, and analysts' benchmarks, by retaining the unreported part of the profits for the subsequent years having lower profits (Ali & Bansal 2021). In terms of the two sub-samples of FTSE 100 and FTSE 250 comparison, it is observable that there is a difference in the level of accruals earnings manipulation among large-capitalised firms (FTSE 100) and small-capitalised firms (FTSE 250). The mean value of the DACC for large firms is -0.0088, which is slightly higher than their small-sized counterparts with a mean value of DACC of -0.0083. This indicates that large-sized companies practise more

conservative EM than their small-sized counterpart. This outcome is possibly a reflection that large-capitalised firms (FTSE 100) possess more valuable assets than small-capitalised firms (FTSE 250), which, in turn, gives them more opportunities to practise accruals earnings manipulation. Furthermore, companies listed on the FTSE 100 may exhibit more accrual earnings manipulation than companies listed on the FTSE 250, as the former are subjected to more intense analyst scrutiny, which may encourage their managers to manipulate earnings through accruals to meet or beat forecasts. However, evidence from recent studies, for example Ghafran *et al.* (2022), found similar mean values of AEM between FTSE 100 and FTSE 250 firms.

6.2.1.2 Key Audit Matters Quality

Regarding KAM quality, the mean values of ALKAM and ELKAM for the full sample of FTSE 350 are 2.032 and 1.698, respectively. This implies that an average of nonfinancial listed firms disclosed more risks of material misstatement related to accounting-level risks 54% (see Table 6), which are the most relevant aspects associated with the elements of the financial statements compared to those related to entity-level risks, 33%. These are associated with firm's specific inherent risk so that they affect the entity as a whole, and their effects are pervasive and contagious (Bepari *et al.*, 2022). These results are in line with previous literature in the audit reports. For example, Sierra-García *et al.* (2019) observed that, in the U.K non-financial companies, there is a higher trend for the inclusion of risks linked to accounting-level risks, 59%, than to

entity-level risks, 41%, in general. Similarly, Olmo & Brusca (2021) also observed that 69% of the KAMs reported in the Spanish state societies are a consequence of the accounting-level related risks, and 31% are risks related to entity-level risks. This supports the notion that auditors focus more on information related to accounting estimates and choices that have been considered highly uncertain than on other matters associated with a firm's specific risks, given that the information in the financial statements with high uncertainty should obviously be the emphasis to avoid litigation and reputation damage. Nonetheless, the figures presented in Table 6 show that the sub-sample of FTSE 100 firms report more ALKAM risks than ELKAM risks, with mean values of 2.246 and 1.824, respectively. Meanwhile, the sub-sample of FTSE 250 firms also report more ALKAM risks than ELKAM risks, with mean values of 1.859 and 1.596 respectively. These results indicate that both groups, FTSE100 and FTSE250, report more KAMs related to accounting-level risks than those related to entity-level risks. On the other hand, it is observed that the group of FTSE100 reports more ALKAM than their counterpart group of FTSE250, with mean values of 2.246 and 1.859, respectively. This suggests that large-capitalised firms adopt more accounting choices, estimates and policies that require auditors' attention concerning complicated accounting estimates, including the effects of major transactions or events and policies (Matonti, 2018), than their counterpart small-capitalised firms. This is consistent with the findings of Sierra-Garcia *et al.* (2019) and the notion that auditors focusing on

the financial statement accounts that reflect the risks inherent to the client. This confirms that large-sized firms in the U.K are likely to engage more in earnings mismanagement than small-sized firms.

6.2.1.3 Key Audit Matters Quantity

In terms of key audit matters quantity, the results in Table 6 for the full sample of FTSE 350 reveal that 80.81% of the U.K-listed companies disclose between three and five KAMs in their audit reports, with a minimum of zero KAM and a maximum of 10 KAMs. However, the mean value of 3.731 indicates that the average of the U.K non-financial firms reported an average of four KAMs in their audited reports. This is consistent with the findings of Sierra-García *et al.* (2019), who reported that 61.89% of the U.K non-financial companies disclose three to five KAMs in their audited reports. However, Pérez-Pérez *et al.* (2019) show that the Spanish state enterprises report between two and four KAMs, highlighting impairment of goodwill, revenue recognition and recovery of deferred taxes, while for the ones on the Ibex35 it is between two KAMs and three KAMs. Regarding the two sub-samples of FTSE 100 and FTSE 250 comparison, the results in Table 6 indicate that large-capitalised firms disclose an average of four KAMs in their audit reports, with a mean value of 4.07 compared to their counterparts, small-sized firms who disclose an average of 3.5 KAMs in their audit reports with a mean value of 3.455. These findings support the notion that large-capitalised firms possess and manipulate larger assets than small-capitalised firms, and, therefore, they exhibit more

transactions. This requires auditors to focus more on those transactions related to accounting estimates and choices that have been considered highly uncertain and need to be explicitly classified as KAMs. In addition, these results agree with the assumption of legitimacy theory that, in the accounting field, corporations comply with the norms and bounds, such as accounting standards and disclosure requirements, to fulfil the organisation's social contract.

6.2.1.4 Board of Directors' Characteristics

For the board of directors' characteristics variables used in the regression model, the mean value of board of directors' independence (IBOD) for the full sample in the study (FTSE 350) is 58,318. This indicates that an average of the U.K-listed non-financial companies have a proportion of 58% of their directors who are outside directors (independent), with a minimum of 0% proportion and a maximum of 100% proportion in some cases. This means that almost six out of 10 members of boards of directors are independent. These results are consistent with the findings of Harjoto & Wang (2020). They found that 61.01% of directors of non-financial firms listed on the U.K FTSE 350 index are considered as independent directors (nonexecutives). Relatedly, Lei (2008) found that the average board of the U.K-listed companies contains nine directors, 54% of whom are independent directors. Furthermore, the results in Table 6 reveal that companies listed in the group FTSE 100 have more independent directors than their counterparts in the group FTSE 250, with a mean value of 61.487 and 55.749, respectively. This indicates that six out of 10

board of directors' members are independent (non-executive directors) in large-capitalised companies, while only five out of 10 board of directors' members are independent in small-sized companies.

Regarding the second characteristic of boards of directors, which is board expertise (BOEX), the mean value of the full sample of FTSE 350 is 57.3% with a minimum of zero and a maximum of 100, meaning that listed non-financial firms in the U.K have an average proportion of 57.3% of their board that possess the proper accounting and financial skills. In other words, six out of 10 members of their board are experts in the accounting and financial field. This provides them with an understanding of financial statements that enables them to assess the effectiveness of the accounting policies offered by the firms' management (Kiel & Nicholson, 2003). However, previous studies have found different proportions in boards of directors' expertise; for instance, the results of Basiruddin (2011) indicate that the average proportion of boards of directors' members with accounting or financial qualifications and experience is 35%, based on data obtained from the FTSE 350 between 2005 and 2008. In addition, a wide variation in the proportion of expertise of the boards of directors' members have been shown within the sub-sample, whereas the small-capitalised firms have more proportion of expertise boards of directors 58% than their counterpart large-capitalised firms with a proportion of 56%. This difference may arise due to the larger firms in the sample of FTSE 250. It is also consistent with the notion that small-capitalised firms can attract directors

with more experience and superior expertise as they have stronger incentives to be better monitors in small firms due to higher scrutiny (Xie *et al.*, 2003; Fama & Jensen, 1983).

The third characteristic of boards of directors is the intensity of their activities (BOA), which is one of the aspects of their effectiveness and is measured by the average number of meetings attendance held in the year. Most of the literature contends that boards of directors' attendance are crucial and that boards of directors' absence are linked to lower performance and weaker board monitoring (Nowland & Simon, 2018). However, the results presented in Table 6 show that the full sample (FTSE 350) has a mean value of boards of directors' activities of 96.931, with a minimum of 13 and a maximum of 100, indicating that the average meeting attendance of boards of directors' proportion is 96.9%. Other studies have found different proportions of board meeting attendance in the U.K. For example, Brody *et al.* (2022) found that the average meeting attendance rate is 95.3% and ranges between 75 % and 100%. Similarly, Mathew *et al.* (2017) found a proportion of 95% of board attendance. Conversely, in other countries, the average meeting attendance reflects much less than the U.K companies; for instance, Chapple *et al.* discovered that the average frequency of board meetings in Australian companies is 93%, while Chou *et al.* (2013) claimed that the board of Taiwanese listed corporations attend an average of 77.6% of board meetings. This indicates that the boards in the U.K meet more frequently compared to other countries. In this aspect, U.K

corporate governance seems to be more proactive. It is also consistent with the idea that a more proficient director appears more involved and is keener to play the director role herself/himself rather than delegate the job to her/his representative. In terms of the sub-sample, as expected, the mean value of board meeting attendance of 96.956 reported for the sub-sample of FTSE 100 is slightly greater than the average observed for the group of the FTSE 250 which is 96.911.

6.2.1.5 Audit Committees Characteristics

The mean values represented in Table 6 for audit committees' characteristics show that the mean value for audit committees' independence (INDAC) for the whole group of FTSE 350 is 50.832. This indicates that an average of the U.K-listed non-financial companies have a proportion of 51% of their audit committee members who are independent, ranging between 0% and 100% in proportions, while the standard deviation value of 19.78% indicates that there is a high deviation of the sample data from the mean. The minimum value of zero implies that some firms within the sample had no independent member in their audit committees; conversely, some of the firms' audit committee members are all independent. However, the audit committees' independence rate obtained in this sample was much lower than some other U.K studies. For instance, the study of Zábojníková (2016) reported that around 98% of the members are considered to be independent pursuant to the U.K Corporate Governance Code. Furthermore (2017) found that the average proportion of

independent members on audit committees is 95.29%. Conversely, the study of Alzeban & Sawan (2015) indicates that 74% of audit committees in their sample are comprised solely of independent directors, with a minimum of 34 and a maximum of 100. In addition, a slight variation in the proportion of committees' independence shown is within the sub-sample. Furthermore, the results indicate that the small-capitalised firms (FTSE 250) have less independent committee members than their counterparts, the large-capitalised firms (FTSE 100), with mean values of 50.47% and 51.27%, respectively. This difference ascertains and confirms the notion that FTSE 100 firms were more compliant with corporate governance codes, suggesting a higher level of independence in audit committees compared to firms listed on the FTSE 250.

Concerning the second characteristic of audit committees, which is the audit committees' expertise (AUCEX), it was found that the mean value of the full sample of FTSE 350 is 69.81, with a minimum of zero and a maximum of 76, meaning that listed non-financial firms in the U.K have an average proportion of 69.81% of their audit committees that possess the proper accounting and financial skills. Nonetheless, other studies have found different proportions of audit committees' expertise in the U.K For example, Zang & Shailer (2022) found the lowest proportion of 28% of audit committees' expertise in the U.K Conversely, Appiah & Amon have found the highest rate of 95% of audit committees' expertise in the U.K nonfinancial companies. At the same time, the results of Adelopo *et al.* (2012) indicate that the average

proportion of audit committees with financial expertise is 50%, based on data from FTSE 350 companies for the year 2006. Furthermore, the results highlight that there is a variation in the rate of expertise of audit committees within the sub-sample, whereas the large-capitalised firms have a higher proportion of expertise in their audit committees' members, 71.31%, than their counterpart small-capitalised firms with a proportion of 68.59%. Also, the results show that the listed firms on the FTSE 100 have a minimum of 5.34 and a maximum of 100 members of their audit committees with the required expertise, while the listed firms on the FTSE 250 have a minimum of zero and a maximum of 100 members of their audit committees with the required expertise. These findings are consistent with the notion that large-capitalised firms attract more audit committee members with superior expertise than their counterparts in small-capitalised firms to exhibit greater levels of financial transparency. This evidence supports the arguments made by Armstrong *et al.* (2010), who argue that one reason companies may hire more financial experts is that they believe it will help them improve the transparency of their financial reporting.

Regarding the third characteristic of audit committees, which is the intensity of their activities (AUCA), this is one of the aspects of their effectiveness and is measured by the average number of meetings attendance held in the year. It is expected that more active audit committees that meet frequently will be more effective monitoring bodies. An audit committee that meets infrequently is considered inactive and may be less likely to effectively

monitor management (Zábojníková, 2016). The literature on audit committee meeting frequency generally supports more meetings because they allow the committee members to exercise greater professional care, which should improve the auditing process and financial reporting quality and reduce the likelihood of corporate scandal (McLaughlin *et al.*, 2021). However, the results presented in Table 6 show that the full sample (FTSE 350) has a mean value of audit committees' activities of 96.346 with a minimum of 56.44 and a maximum of 100, indicating that the average meeting attendance of audit committees' proportion is 96.35%. Other studies in the same context have reported different proportions; for example, Zaman & Sarens (2013) and Ghafran & O'Sullivan (2017) have reported an average proportion of board members attending audit committee meetings of 97.4% and 94%, respectively. Regarding frequency of meetings of audit committees in the sub-samples, the results reveal that both large-capitalised and small-capitalised firms have almost the same proportion of meeting frequency. This means that both groups meet frequently and at least three times per year, as currently recommended by governance regulators. These findings are consistent with the notion that audit committees that meet more frequently are more diligent and more likely to request greater transparency, which is important for shareholders' and management's primary communication (McGrane, 2009).

6.2.1.6 Firm's Financial Characteristics

Another important aim of the current study is to demonstrate the relationship between the firm's financial characteristics and earnings management in the presence of key audit matters. Therefore, this study follows Iatridis (2008) and uses various firms' financial characteristics in the regression equation. This includes the firm's size (SIZE), measured by the logarithm of total assets at the year-end; profitability (PROF), measured by return on assets (ROA), which is calculated as net income divided by lagged total assets; leverage (LEV), measured as the total liabilities divided by total asset at the end of the financial year; growth (GROW), measured by the market-to-book ratio (MBV), which is used as a proxy to control for a firm's growth prospect; and liquidity (LIQ), calculated as the ratio of current assets divided by current liabilities at the end of the financial year.

With reference to firm's total assets, which is the indicator for firm size, the descriptive statistics results in Table 6 show an average value of total assets of £14.54m for the whole group FTSE 350 with a minimum value of £0.635m and a maximum value of £411.3m, with a standard deviation of £40.07m. Furthermore, the summary statistics results reveal large differences between the mean, maximum, and minimum values in the sub-sample. As expected, large-capitalised firms have higher mean values than their counterparts in small-capitalised firms, with values of £28.07m and £3.57m, respectively. This difference arises because firms listed on the FTSE 100 have larger capital than

firms listed on the FTSE 250, hence large-capitalised and small-capitalised firms. Nonetheless, there is an important point to note when looking at the mean of total assets, that firms' maturity stage is determined based on total assets which means that when the value of the total assets is greater, the firm has good prospects over a relatively long period (Kurniasih & Sari, 2013).

For profitability, the mean value reported for the groups FTSE 350, FTSE 100 and FTSE 250 are 8.22%, 6.078% and 9.957%, respectively. The average ratios of profitability range between a minimum of -53.54 percent (loss) and a maximum of 236.78 percent (gain), indicating a high variation in the profit generated by the U.K companies. For instance, the data shows that small-capitalised firms have a higher rate of profitability than large-capitalised firms. This variation may result from many factors, such as higher levels of competition between businesses, economic conditions, market segments in which their goods are sold, variations in their sales' cost and firms' industry characteristics that have been identified in the literature as potential drivers of a firm's net profit margin.

The descriptive statistics results in Table 6 reported comparable mean leverage values for the FTSE 350, FTSE100 and FTSE 250, which were 0.257, 0.286 and 0.233, respectively. Remarkably, these reported values are less than 50 percent of total assets, which is considered appropriate for firms (Davies *et al.*, 2019, Barth & Miller, 2018), which infers that U.K firms are not highly dependent on debt finance. These results are consistent with the Pecking Order

Theory which suggests that the low leverage ratio indicates that U.K companies are increasingly relying on equity capital, which includes an upward revaluation of properties, plants, and equipment, as well as retained earnings. As a result, their financial position should improve in the aftermath of any downturn.

In terms of market-to-book ratio (MBV), which is the indicator for company growth, the results of the descriptive statistics in Table 6 show mean values of 5.863% for the FTSE 350, 2.982& for the FTSE 100 and 8.199% for the FTSE 250. The relatively low MBV average for the sub-sample of large-capitalised companies implies that the market is undervaluing these companies' shares compared to their historical cost or accounting value. Furthermore, the fact that the reported figure is less than unity suggests that analysts believe these companies' stock is undervalued, hence trading for less than the total asset's recorded value. This signifies that firms belonging to this group have poor future growth and profit projections; thus, investors are unwilling to pay the underlying assets' historical accounting value. In addition, data shows that manufacturing and wholesale and retail businesses that dominate the FTSE100 group have many physical assets and tend to have a lower MBV ratio.

For liquidity, the mean value reported for the whole group of FTSE350 is 1.597%, with a standard deviation of 1.324, a minimum of 0.078 and a maximum of 17.135. This implies that average U.K firms during the studied period were able to cover their short-term obligations with their current assets. However, some companies within the sample have reported minimum values

of less than 1 (minimum level), which means there are some liquidity issues. A higher liquidity ratio is critical to a company's survival; hence it is commonly used to assess its creditworthiness. As a result, a higher liquidity ratio enables companies to obtain credit at a low-interest rate, lowering the risk of bankruptcy. In addition, the results reveal that the subsample of small-capitalised firms have a greater liquidity ratio than their peers, large-capitalised firms, with values of 1.701% and 1.469%, respectively. The implication is that small-capitalised firms have more funds in cash or other liquid assets such as work in progress, raw materials, finished goods, and receivables that are not being used as productively as their larger, capitalised counterparts.

6.2.1.7 External Auditors' Characteristics

The values represented in Table 6 for external auditors' characteristics show that the mean value for external auditors' independence (EXAIND) for the whole group of FTSE350 is 0.977 with a standard deviation of 0.151, a minimum value of zero and a maximum value of 1. This indicates that an average of the U.K-listed non-financial companies have a proportion of 97.7% of their external auditors who are independent. In other words, 97.7% of the U.K-listed non-financial companies are audited by the Big 4. These results are in line with the findings of the consultancy made about the big N in 2018, which reveals that the Big 4 currently hold 98% of auditing work for the FTSE 350. The vast customer base of Big-4 auditors makes them less financially dependent on any given client, strengthening their independence. For instance, their large

size enables them to attract and retain higher-quality audit inputs, especially in terms of human resources and expertise (Sirois *et al.*, 2016), which, in turn, enables them to have a bigger market share and enjoy larger economic scales when compared to non-Big 4 auditors. In addition, studies such as Ndubuisi & Ezechukwu (2017), Sirois *et al.* (2016), Eshleman & Guo (2014), and Van Tendeloo & Vanstraelen (2008) suggest that auditors belonging to the Big 4 have better financial reporting quality. Furthermore, the results of the descriptive statistics show a variation in the external auditors' independence proportion. For instance, the results indicate that the small-capitalised firms (FTSE 250) have fewer independent external auditors than their counterparts, the large-capitalised firms (FTSE 100), with mean values of 0.959 and 0.998, respectively. This difference ascertains and confirms the notion that FTSE 100 firms were more compliant with corporate governance codes, suggesting a higher level of independence with regards to external auditors compared to firms listed on the FTSE 250, which adds credibility to their information disclosure and enhances stakeholders' confidence (Olagunju, 2011).

In terms of the second characteristic of external auditors, which is the external auditors' expertise (EXAEX), the mean value reported in the appendix of the full sample of FTSE 350 is 0.576 with a standard deviation of 0.494, ranging from zero to one, meaning that listed nonfinancial firms in the U.K have an average proportion of 57.6% of their external auditors who specialise in the industry where their clients operate. In other words, almost six out of 10

auditing firms are specialised and experts in the field in which the auditees are operating. This implies that more than half of auditing firms contracted by listed non-financial firms in the U.K have a deep understanding of industry-specific issues, which, in turn, improves the quality of their audits (Ernest & Young, 2017). Furthermore, the results reveal a wide variation in the proportion of expertise of external auditors within the sub-sample. In contrast, the small-capitalised firms have a higher proportion of expertise of external auditors, 58.4%, than their counterpart large-capitalised firms, with a ratio of 56.7 %. This difference may arise due to the larger firms which are included in the sample of FTSE 250. It is also consistent with the notion that small-capitalised firms are concerned about the quality of their audits due to higher scrutiny; hence, they choose auditors who are concerned about the quality of their audits (Xie *et al.*, 2003).

The third characteristic of external auditors is the intensity of their auditing activity (EXAA), which is one of the features of their efficiency and is measured as the total audit fees paid to the auditing firms for their auditing services and consultancy. Auditors with more auditing engagement (activities) will enjoy larger economies of scale, making them more efficient in monitoring the level of audit quality they deliver (Watts & Zimmerman, 1981).

This means higher activities lead to higher audit fees, improving auditing and reporting quality. However, the results presented in Table 6 show that the full sample (FTSE 350) has a mean value of external auditors' audit fees of £0.023m

with a minimum of £0 and a maximum of £7.33m. This implies that listed non-financial companies in the U.K paid an average of £0.023m for audit services provided by an auditing firm. Moreover, the results of the descriptive statistics show a large difference between the mean, maximum, and minimum values in the sub-sample. As expected, large-capitalised firms have higher mean values than their counterparts in small-capitalised firms, with mean values of 0.044m and 0.005m, respectively, meaning that companies listed on the FTSE 100 pay more audit fees than their peers listed on the FTSE 250. This difference is because FTSE 100 companies are complex, large and have higher transaction volumes, which requires the auditing firm to take more time, have greater expertise and use additional audit procedures in order to ensure that the auditing process is carried out to the highest possible standard (Owusu & Bekoe, 2019).

With regards to the fourth and the final characteristic of external auditors used in the regression model, this is the auditor switch (SWITCH). The mean value reported in the descriptive statistics of the full sample of FTSE 350 is 0.081, ranging from 0.316 to 6. This means that an average proportion of 8.1% of listed non-financial firms in the U.K have switched their external auditing firm. Another study conducted in the same context by Kittsteiner & Selvaggi (2008) found a lower proportion of 6% of auditor switch. Furthermore, the results also reveal that the small-capitalised firms (FTSE 250) have a lower rate of auditor switch compared to their counterparts, the large-capitalised firms (FTSE 100), with mean values of 0.068 and 0.087, respectively. This implies

that firms' managers belonging to the FTSE 100 group are more inclined to select and switch to auditing firms that best satisfy their needs and are more accommodating with applying their accounting policies and choices in a competitive market (Beattie & Fearnley, 1998).

6.2.2 Pairwise Correlation Matrix

This study uses the pairwise correlation matrix to test the level of multicollinearity issues amongst the dependent variables and the explanatory variables. This method is employed to ascertain the degree of correlation between each pair of explanatory variables, as recommended by Gujarati & Porter (2011). In this sense, if the correlation coefficient ranges from -1 to +1, this indicates a perfect linear relationship between explanatory variables. The greater the level of correlation coefficients between explanatory variables, the greater the multicollinearity problem. Contrarywise to this, a low correlation coefficient signals that the likelihood of a multicollinearity problem is minimised (Harris & Raviv, 2008). Furthermore, other studies (e.g., Gujarati, 2008; Grewal *et al.*, 2004) suggested that a 0.8 correlation coefficient is the cut-off point for a considerable multicollinearity bias that would influence regression results. Nevertheless, the results of the correlation coefficient between the dependent variable, discretionary accruals (DACC), and the explanatory variables represented in Table 17 (see Appendix) provide preliminary evidence that there are non-uniform relations between them. Most

of the correlation coefficients between the explanatory variables are below 0.25, implying that the likelihood of multicollinearity among the explanatory variables in the regression model is minimal. The highest correlation coefficient reported in the results is 0.56 between GROW and profitability (PROF), and the lowest is -0.47 between external auditors' expertise (EXAEX) and audit committees' activity (AUCA). Based on the VIF table 17 there is no multicollinearity in the proposed quantile regression model.

6.3 Empirical Results of Quantile Regression and Discussion

Our primary purpose is to discuss the effect of key audit matters (KAM) disclosed in the audited report on earnings management (EM) among the U.K non-financial firms listed on the FTSE 350 at a quantile level between zero and one and, thus, the descriptive statistics are presented using the mean between 5% and 95% percentiles. To the best of the knowledge, this study is the first to examine how KAM quality and KAM quantity affect the firms' earnings management activities. One of the key contributions of this investigation is that it uses the quantile regression model to empirically assess the relationship between KAM and EM, rather than the commonly used basic regression method such as the ordinary least squares (OLS). Therefore, this section discusses the empirical results of the analysis on the impact of KAM and the rest of the regressors on EM obtained from the quantile regressions. The argument here is organised into three main sub-sections: sub-section 6.3.1 discusses the relationship between KAM and EM, sub-section 6.3.2 explains the association

between company characteristics and EM, and sub-section 6.3.3 reports the relationship between the external governance mechanisms variables and EM.

6.3.1 Key Audit Matters and Accrual- Based Earnings Management

To assess the relationship between accruals earnings management (AEM) and key audit matters (KAM), this research considers two groupings of KAM: (i) KAM quantity (NB_KAM) which is proxied by the total number of KAMs disclosed in the KAM section in the firm's audit report for each year and (ii) KAM quality, which is distinguished by two variables for the specificity of KAM risk. The first variable is proxied by the total number of account-level-risk KAMs (ALKAM), and the second is approximated by the total number of entity-level-risk KAMs (ELKAM). The results of the quantile regression on the partial correlation between EM proxied by the discretionary accruals (DACC) using the Modified Jones model and the two groupings of KAM provide simultaneous estimates of the variables in each of the percentiles ranging from 0.05 to 0.95 and are illustrated in Tables 18 and 19. However, the empirical results show that the coefficients of key audit matters quantity (NB_KAM) are negatively associated with DACC and are statistically significant for the quantiles at 1% and 5% levels, only showing an insignificant correlation at percentiles 0.05, 0.65, 0.70 and 0.75. the results from the quantile regression clearly indicate that the estimated coefficients vary with the quantile levels. These results are in line with prior research (e.g., Reid *et al.*, 2019; Bédard *et al.*, 2019; Almulla & Bradbury, 2018; Wei *et al.*, 2017) that examined the

impact of KAM disclosure on audit quality, using DACCs as proxies for audit quality using the modified Jones model. They found that KAM disclosure improves audit quality by reducing discretionary accruals.

With reference to key audit matters quality, the empirical results of the quantile regression show that the coefficients of the ALKAM variable for the most part of quantiles are negatively associated with DACC, statistically significant in the 0.20, 0.25, 0.30, 0.40 and 0.95 percentiles at 5% and 10% levels, and show an insignificant correlation from 0.05 to 0.15 percentiles. Next, from 0.55 to 0.90 percent quantiles, the results show no evidence of a relationship between DACC and ALKAM. In contrast, it was found that all the ELKAM variable coefficients are negatively correlated with DACC and statistically significant from the percentiles 0.1 to 0.5 at a 1% level, from percentiles 0.80 to 0.95 at a 5% level, but statistically insignificant from the percentile 0.55 to percentile 0.75. This implies that risks related to the entity level reduce more DACC than risks related to the accounting level. These results are confirmed by Klueber *et al.* (2018), who conducted an experimental study by asking management about their financial reporting choices and investigating whether earnings management activities are reduced due to the anticipated KAM disclosure. Their findings show that KAMs disclosure has the potential to reduce EM in the financial statement, if the KAM section contains firm-specific information. This suggests that, if the information precision of KAM is high, the inclusion of the specific risk in the KAM section will serve

as a favourable instrument to improve the quality of management financial reporting.

Overall, the significant and negative DACC-KAM relationship indicates that the disclosure of KAMs can significantly reduce the managers' earnings manipulation behaviour when a firm has a high level of DACC. As a result, hypotheses H_1, H_2 and H_3 are supported. Studies (e.g., Bentley *et al.*, 2018; Klueber *et al.*, 2018; Cade & Hodge, 2014) that have examined how the anticipated KAMs disclosure impacts management reporting practices found that the inclusion of the KAM section in the audited report will serve as a beneficial mechanism for improving management financial reporting quality. Interestingly, the findings of these studies suggest that management discloses less private information about their accounting choices to auditors when they are told that auditors will report those choices publicly, a potentially unfavourable effect of the KAM regime. Under the agency framework, the inclusion of a KAM section in the financial reports provides new information to users. The reporting of KAM in the financial statement is just another means of monitoring mechanism that abates conflict of interest by combating the two anomalies caused by information asymmetry: moral hazard and adverse selection. Furthermore, the stakeholder theory hypothesises that such reform in auditing (e.g., KAM disclosure) would contribute to reducing all major sources of expectation gap and information asymmetry between stakeholders and corporate management which, in turn, will limit managerial discretion (Fuller,

2015). Accordingly, Njenga (2019) argues that the KAMs introduction in the audited report would provide a diverse range of stakeholders with more insights into the organisation and, thus, stakeholders would be better informed about corporate management activities.

As a conclusion, the results found that the inclusion of KAMs in the audited report have significantly negative relationship to discretionary accruals. Therefore, it indicates that both KAM quantity and KAM quality variables have a strong potential to influence the tendency of earnings manipulation activities amongst the U.K non-financial firms listed on the FTSE 350.

6.3.2 Company Characteristics and Accrual-Based Earnings Management

This study has employed various control variables related to the category of company characteristics in the regression model that might impact financial reporting quality in the presence of KAM. These variables are (i) board governance characteristics, including independence of the board of directors (IBOD), board expertise (BOEX) and board of directors' activity (BOA); (ii) audit committees' characteristics that include independence (INDAC) of audit committees' expertise (AUCEX) and audit committees' activity (AUCA); and finally (iii) firm's financial characteristics including firm size (SIZE), profitability (PROF), leverage (LEV), growth (GROW) and liquidity (LIQ). However, the empirical results of the quantile regression for board governance characteristics show no evidence of a relationship between IBOD, BOEX, BOA and discretionary accruals (DACC) across all percentiles.

These results indicate that the expertise, the number of meetings (activity) and the provision of a separate corporate independence policy by the U.K FTSE 350 firms' boards have no noticeable impact on managerial financial reporting behaviour. These observations are contrary to the study's expectations and, therefore, are rejected. The inference is that managers use accounting conventions' flexibility by employing their expertise to achieve a creative view of their activities. They are more likely to add statements about how the independence of the companies' boards of directors ensures that accounts are prepared in compliance with the relevant regulatory framework.

Nevertheless, these findings are contradictory to the prediction of agency theory and prior studies (e.g., Sarkar *et al.*, 2008; Cornett *et al.*, 2008; Peasnell *et al.*, 2005) which have supported the notion that independence, expertise and effective board governance would reduce the likelihood of financial statement fraud and constrain earnings manipulation activities. For example, Cornett *et al.* (2008) show a significant negative relationship between board independence and EM. Sakar *et al.* (2008) find that number of meetings attended by the independent directors has a significant negative association with EM. However, there is an exception found in a few studies (e.g., Metawee, 2013; Rahman & Ali, 2006; Davidson *et al.*, 2005; Park & Shin, 2004; Xie *et al.*, 2003; Klein, 2002) that fail to find empirical evidence to support the association between some board governance characteristics and EM. For example, Klein (2002) documents that board characteristics are not associated

with EM. Meanwhile, Xie *et al.* (2003) revealed that board characteristics, such as independent directors and more frequent board meetings, are inversely related to EM. In addition, Rahman & Ali (2006) and Park & Shin (2004) failed to find any significant evidence of a relationship between board independence and EM, confirming the argument of Dechow *et al.* (1996) that firms with extensive earnings manipulation are more likely to be controlled by insiders rather than outsiders. At the same time, Metawee (2013) shows a positive relationship between board financial expertise and EM, and Gulzar & Wang (2011) find a significantly positive association between board meetings and EM.

With reference to the audit committee's characteristics, the results also fail to find evidence of empirical support between the association of DACC and INDAC, AUCEX, and AUCA across all percentiles. These findings are contrary to the study's predictions and, therefore, are rejected. The outcome of the results is consistent with Klein (2002), who documented that there is no association between the extent of EM and audit committee characteristics. Furthermore, Ghosh *et al.* (2010) and Xie *et al.* (2003) found that EM has no association with the audit committee's degree of expertise and independence. While some later studies confirm the negative connection between EM and audit committee independence (e.g., Bedard *et al.*, 2004), other studies find conflicting evidence, demonstrating that the independence of audit committees alone is insufficient to curb opportunistic behaviour in the financial reporting

process. For example, Larcker *et al.* (2007), Vafeas (2005) and Agrawal & Chadha (2005) document an insignificant association between the audit committee's independence and EM.

With regards to firms' financial characteristics, it has been included a number of firms' financial variables to isolate the effects of the test variables on EM. These variables include firm size (SIZE), profitability (PROF), leverage (LEV), growth (GROW) and liquidity (LIQ). Earlier studies have suggested that the above firm-specific characteristics are useful in predicting earnings mismanagement (Kim *et al.*, 2012; Chih *et al.*, 2008). However, the empirical results show no evidence of a correlation between SIZE and EM in the U.K nonfinancial companies across all percentiles of the quantile regression. These findings contradict the study's expectations and oppose the accounting literature that argues that firm size can be negatively or positively linked to EM. Nevertheless, there is no agreement in the accounting literature regarding the effect of firm size on EM. For example, Richardson (2000) denotes that market pressure is greater for larger companies because they are subject to greater investor scrutiny and, thus, more likely to adopt aggressive accounting policies that result in income-increasing EM practices. Conversely, Watts & Zimmerman (1990) argue that larger companies are more likely to perform income-decreasing EM activities. However, some prior studies on EM have used firm size as either a control variable or a predictor (e.g., Purnama & Nurdiniah, 2019; Türegün, 2018; Saftiana *et al.*, 2014; Naz *et al.*, 2011). For

instance, Türegün (2018) found a significant relationship between firm size and EM practices. In the same vein, Purnama & Nurdiniah (2019) found that firm size negatively affects EM, while the findings of Naz *et al.* (2011) and Saftiana *et al.* (2014) show that firm size has no significant effect on EM. The absence of a relationship between firm size and EM in the results might be explained by the fact that large firms enjoy economies of scale and scope and are, thus, less likely to engage in earnings manipulation (Zamri *et al.*, 2013). These findings are also consistent with the view of the resource dependency theory that argues that large firms that are highly dependent on external resources (e.g., financial, reputation, legitimacy, and material) would be more likely to make the requisite efforts to comply with regulations to gain a competitive advantage, especially in financial reporting quality.

In terms of profitability, which is measured by return on asset, the empirical results from the quantile regression show that the coefficients of profitability (PROF) are positively related to DACC and statistically significant at a 1% level in the bottom of the quantiles from 0.05 percentile to 0.40 percentile. This means that DACC and PROF variables are moving in the same direction; therefore, theoretically, they are influenced by the same external forces. Therefore, no evidence found, however, of a correlation between DACC and PROF variables between the 0.45 and 0.95 quantiles. However, the strong positive correlation shown in the results between DACC and return on assets in the bottom of the quantiles was not expected, given the current research's

emphasis on the significance of controlling for financial performance when analysing management reporting behaviour. The results are consistent with the research expectations and consistent with the findings of Elmadhoun & Reddy (2021), Purnama & Nurdiniah (2019) and Ulya & Khairunnisa (2015), which found a positive relationship between return on assets and EM using discretionary accruals. This study finds support for the notion that there is evidence that managers may manipulate accruals to hide poor performance or defer a portion of extraordinarily high current earnings to future years (DeAngelo & Skinner, 1994). Accordingly, Burgstahler & Dichev (1997) declare that firms' managers manipulate earnings to avoid reporting losses and earnings declines.

Regarding leverage (LEV), which is measured as the total liabilities divided by total assets at the end of the financial year, the empirical results of the quantile regression show that the coefficients of variable (LEV) are negatively and statistically significant across all the quantiles at 1% and 5% levels. The significant and negative DACC-LEV relationship indicates that leverage curtails earnings manipulation. As a result, these findings align with the institutional theory and are consistent with the study predictions and other studies results (e.g., Kutha & Susan, 2021; Vakilifard & Mortazavi, 2016; Zamri *et al.*, 2013; Alsharairi & Salama, 2012) that have observed negative associations between leverage and EM, suggesting that firms are subjected to an institutional framework to which they must adapt to survive (Nell *et al.*,

2015; Hearn, 2015). For instance, they hold that financial institutions and creditors act as an external monitoring mechanism to protect their own interests. These adaptations are as a response to pressures to obtain legitimacy under the umbrella of rationality (Suddaby *et al.*, 2013). Several researchers who have worked on the link between leverage and managerial discretion have found contradictory results. They have discovered a positive relationship between leverage and earnings manipulation and have supported their argument by explaining that firms increase their levels of EM to put corporations in better positions to avoid violating debt terms and conditions, as well as to obtain debt financing thereafter (Lazzem & Jilani, 2018; Chamterlain *et al.*,2014; Iatridis & Kadorinis, 2009).

In terms of the company's growth (GROW), which is measured by market-to-book ratio, the empirical results from quantile regression show no evidence of a correlation between GROW and EM in the U.K non-financial companies across all percentiles of the quantile regression. These findings contradict the current research expectations and oppose the accounting literature which argues that a firm's growth can be positively linked to EM. Firms with high growth are expected to manage discretionary accruals upwards because they are under the most pressure to adopt aggressive accounting policies to report increased earnings (Chih *et al.*, 2008). Accordingly, Iatridis and Kadorinis (2009) stated that firms would necessitate meeting and/or beating analysts' earnings forecasts to reinforce their financial status and preserve their

image and reputation in a competitive market. Therefore, in their attempt to boost their reported earnings and surpass the analysts' forecasts, they might be inclined to mismanage the earnings because meeting financial analysts' forecasts is of vital importance for corporations' stability and viability, and for ensuring access to capital markets (Brown & Pinello, 2007). the results are in line with the view of Gul *et al.* (2009), which affirms that corporations with high cash flow from operations are less likely to practice income increasing EM, arguably because they do not have poor performance to hide. In addition, Skinner & Sloan (2002) discover that, for higher-growth firms, the discontinuity in the distribution of earnings surprises around zero is stronger. Because the market reaction to earnings announcements is more severe for these firms, managers have stronger incentives to avoid negative earnings surprises. Furthermore, Dechow *et al.* (2000) showed that firms with zero earnings surprises have high levels of accruals in addition to high market-to-book ratios.

Concerning the company's liquidity (LIQ), which is measured as the ratio of current assets divided by current liabilities at the end of the financial year, the empirical results from quantile regression show that the coefficients of variable (LIQ) are negatively and statistically insignificant across almost all the quantiles. They are only statistically significant at the top of percentiles 0.85 and 0.95 at 1% level, then negatively significant in the percentiles 0.80 and 0.90 at 5% levels and 10% levels, respectively. The negative DACC-LIQ

relationship indicates that liquidity curtails earnings manipulation but not with a significant impact. These findings support the current study expectations and other studies' findings (e.g., Aduda & Ongoro, 2020; Salah, 2018; Ajina & Habib, 2017; Nekhili *et al.*, 2016; Riahi *et al.*, 2013; Kim *et al.*, 2011) which argue that there is a connection between EM and market liquidity. These results also align with the agency theory that emphasises that firms link between stock market liquidity and disclosure quality of accounting information (Lambert *et al.*, 2007; Kim & Verrecchia, 2001; Leuz & Verrecchia, 2000). In turn, this increases information asymmetry and decreases trading liquidity. Given that firms' earnings management activities can reduce the quality of earnings information, this can have a major impact on stock liquidity and the cost of capital (Ascioglu *et al.*, 2012). Thus, ex-ante stock liquidity reduces managers' incentives to manipulate reporting results (Li & Xia, 2021). Furthermore, Elzahar & Hussainey (2012) and Wallace *et al.* (1994) denoted that firms with high liquidity ratios are more likely to disclose accounting information as evidence of their ability to fulfil short-term obligations when compared to their competitors with low liquidity ratios.

6.3.3 External Governance Mechanisms' variables and Accrual-Based Earnings Management

This study has employed various control variables related to the category of external governance mechanisms' characteristics in the regression model that might impact financial reporting quality in the presence of key audit

matters (KAM). These variables are: (i) external auditors' characteristics. this includes external auditors' independence (EXAIND), external auditors' expertise (EXAEX), external auditors' activity (EXAA) and external auditors change (SWITCH); (ii) industry regulation (IND_N); (iii) stock market regulation (DUM_FTSE); and (iv) professional auditing standards (DUM_MAN).

With reference to auditors' independence (EXAIND), the empirical results from the quantile regression show that the coefficients of EXAIND are positively related to DACC and statistically significant at a 1% level in the percentiles 0.05, 0.1, 0.35, 0.80, 0.85 and 0.90. Furthermore, the coefficients show significance at a 5% level in the percentiles 0.20 and 0.40, and at 10% in the percentiles 0.30, 0.65, 0.70 and 0.75, while the rest of the quantiles show an insignificant positive association. This positive relationship implies that DACC and EXAIND variables are moving in the same direction; therefore, theoretically, they are influenced by the same external forces. The results are inconsistent with the study's predictions and oppose the notion that companies audited by independent auditors belonging to Big N had lower levels of results manipulation than those not audited by Big N companies (Ndubuisi & Ezechukwu, 2017; Sirois *et al.*, 2016; Koh *et al.*, 2013). Nonetheless, the results are supported by the notion that auditing firms tolerate less earnings manipulation in larger clients due to economic dependence (Kanagaretnam *et al.*, 2010).

Regarding external auditors' industry specialisation, which measures the auditor's expertise (EXAEX), the empirical results from the quantile regression show that most EXAEX coefficients are negatively related to DACC and statistically significant at a 1% level in the quantiles 0.65 and 0.85. Furthermore, it is statistically significant at a 5% level in the quantiles 0.45, 0.50, 0.55, 0.60, 0.70 and 0.80. Also, the results show a negative and significant relationship at a 10% level in the percentiles 0.40 and 0.75. In contrast, at the bottom of the quantiles (0.05, 0.1, 0.15 and 0.20), an insignificant positive or no relationship between EXAEX and DACC found. However, the overall results show a significant negative association between external auditors' industry specialisation and discretionary accruals, which implies that an auditor's expertise can significantly curve managerial reporting behaviour. These results are consistent with the expectations and in line with agency theory, which argues that auditors with their expertise are expected to utilise the knowledge, skills, and expertise they have acquired from the industry specialisation to produce quality financial reporting.

Furthermore, these results are aligned with prior accounting literature (e.g., Burnett *et al.*, 2012; DeBoskey & Jiang, 2012; Karjalainen, 2011; Chi *et al.*, 2009; Gul *et al.*, 2009; Kown *et al.*, 2007) with the notion that knowledge and experience of auditors related to their client's industry can enhance earnings reporting quality by constraining earnings mismanagement. In addition, a vast range of auditing and accounting studies (e.g., Jenkins *et al.*, 2006; Albring *et*

al., 2004; Balsam *et al.*, 2003; Velury, 2003) have used the level of DACC as a direct measurement of EM to investigate the linkage between DACC and auditors' industry specialisation. They found a negative association between DACC and auditor industry specialisation.

In terms of external auditors' activity (EXAA), which is measured as the total audit fees paid to the auditors for their auditing services that reflect the level of the auditor's activity, the empirical results from quantile regression show no evidence of a correlation between EXAA and DACC in the U.K non-financial companies across all percentiles of the quantile regression. These findings contradict the expectations and oppose the accounting notion which argues that external auditors are required to assess the propriety of accounting policies utilised, as well as the reasonableness of accounting estimates and related disclosures made by the management, and evaluate the content, the structure, and the overall presentation of the financial statements, among others. This includes disclosures and whether the financial statement accurately represents the underlying transactions and events in a manner that achieves fair presentation. In addition, the results contradict the findings of Onaolapo *et al.* (2017) and Kachelmeier & Valentine (2017), which show a significant positive impact of audit fees on discretionary accruals.

Concerning the variable of external auditors' change (SWITCH), the empirical results from the quantile regression reveal different relationships between the variables SWITCH and DACC at different quantiles of the

distribution. This implies that quantile regression allows for relationships between the outcomes of the variable of interest (DACC) and the explanatory variable (SWITCH) to be non-constant across different quantiles. However, it was found that switching auditing firm is negatively and statistically insignificant related to DACC across the following percentiles: 0.05, 0.1, 0.40, 0.60, 0.65, 0.70, 0.75, 0.80, 0.90 and 0.95. Moreover, the results show a positive or no relationship in percentiles 0.15, 0.20, 0.25 and 0.30 and percentiles 0.35, 0.45, 0.50, 0.55 and 0.85, respectively. These results cast some doubt as there is no clear sign of the relationship between auditors' switch and EM; thus, this study does not predict the direction of the relation between the variables SWITCH and DACC. Hence, the current study hypothesises the null form. These results are consistent with the notion that some managers keep switching auditors for better audit opinions shopping or more lenient auditor interpretation of company results.

With reference to the characteristics of the differential industrial sectors (IND_N), it is observed from the results of the quantile regression that the coefficients in the industry dummy (IND1)[14] are insignificantly negative across most percentiles. Furthermore, it shows in the industry dummy IND_4[15] a significant negative relationship between the percentiles 0.05 and 0.5. This indicates that the degree of EM for an average of these industrial sectors is

[14] IND_1: Manufacturing

[15] IND_4: Electricity, Gas, Steam and Air Conditioning Supply, Water Supply; Sewerage, Waste Management and Remediation Activities, Accommodation and Food Service Activities, Information and Communication Plus Arts, Entertainment and Recreation

significantly much lower than the average for the group of the rest of the other industries. In contrast, the coefficients of industry dummies IND_2[16] and IND_3[17] are significantly positive across most of the quantiles. This implies that the degree of EM for an average firm in these industrial sectors is higher than the comparable figure for a typical firm operating in industrial manufacturing. The mixed results revealed by the study are consistent with the study of Ujah & Brusa (2011), who found that the degree and extent of managed earnings vary depending on which industry a firm belongs to. Hence, Hence, the current study hypothesises the null form.

In terms of the stock market regulation (DUM_FTSE) variable, which is used to investigate whether large-capitalised firms (FTSE 100) are more likely to engage in earnings mismanagement compared to their counterparts, small-capitalised firms (FTSE 250) or vice versa, the results from the quantile regression reveal a positive sign on the differential slope coefficient on the DUM_FTSE dummy variable at the bottom of the quantiles, between 0.05 and 0.25 percentiles. Then, it reverts to a negative sign in the remaining percentiles. These findings, generally, are consistent with this research expectations.

The implication is that FTSE 100 firms that strictly adhere to conventional accounting rules and regulations when recording their actual

[16] IND_2: Agriculture, Forestry and Fishing, Mining and Quarrying Plus Construction.
[17] IND_3: Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles Plus Transportation and Storage

accounting figures reported higher average EM figures than their peer FTSE 250 firms. However, in large-capitalised firms, where managers competently used creative accounting methods to deliver specific financial outcomes, they were significantly more successful than their peers in small-capitalised firms in lowering their average EM. These observations capture the differences in the quality of managerial skill sets as well as the complexities in the asset and liability structures of large and small businesses. These results align with the notion that argues that the intense coverage of firms listed on the FTSE 100 may encourage earnings manipulation to meet or beat forecasts and contradict the notion that firms listed on the FTSE 100 may exhibit less earnings manipulation than their counterparts listed on the FTSE 250, as the former are subjected to more intense analyst scrutiny.

With regards to the professional auditing standards (DUM_MAN) variable, which is used to investigate whether FTSE 350 firms are more likely to manipulate earnings during the voluntary period of the implementation of KAM (ISA701) compared to the mandatory period, the study's empirical results of the quantile regression show that the coefficients of the variable DUM_MAN for the most part of quantiles are negatively associated with DACC and statistically insignificant. These results are in harmony with the proposed expectations and are consistent with the perception that managers exploit some flexibilities permitted by accounting policies to manipulate earnings to influence the results of the financial statement. In this case, firms'

managers might exploit the voluntary adoption period of KAM adoption to engage more in EM than the compulsory period.

6.4 Summary

The current chapter presents the results from the quantile regression analysis of the impact of key audit matters (KAM) quantity and quality on earnings management (EM) for the U.K non-financial firms between 2013 and 2018. The EM indicator underpinning the arguments here was proxied by the discretionary accruals (DACC), employing the modified Jones model, which was popularised in 1995. However, the results reveal that the independent variables of interest, KAM quantity and quality, have the expected relationship with the estimated EM variable and are statistically significant for most of the percentiles. These results imply that both KAM quantity and KAM quality variables have a strong potential to influence the tendency of earnings manipulation activities amongst the U.K non-financial firms listed on the FTSE 350. Nonetheless, it is found that risks related to the entity level (ELKAM) reduce more DACC than risks associated with the accounting level (ALKAM).

This research has also employed various control variables that might impact financial reporting quality, such as company characteristics and external governance mechanisms. To capture the impact of the company characteristics on EM, the current study involves board governance, the audit committee, and the firm's financial characteristics. For instance, it was found that board

governance, including board independence, expertise, and activity, has no relationship with the EM across all quantiles. Also, it was observed that audit committees' characteristics, including audit committees' independence, audit committees' expertise and audit committees' activity have no association with EM in the presence of KAMs across all the percentiles. In terms of firms' financial characteristics, the results revealed no evidence of a relationship between both variables (size, growth) and EM through all quantiles.

In contrast, the leverage coefficients are negative and statistically significant across all quantiles at 1% and 5% levels. Similarly, an insignificant negative sign is observed between liquidity and EM in the bottom quantiles from 0.05 to 0.70, while a significant negative sign is found in the top quantiles from 0.80 to 0.95 percentiles. Additionally, the results indicate a significant positive relationship between profitability and EM, although this observation is only visible among firms in the bottom quantile.

Furthermore, to capture the impact of external governance mechanisms on EM, the current study involves external auditors' characteristics, involving external auditors' independence, expertise, activity and external auditors' change, industry regulation, stock market regulation and professional auditing standards. However, the study found from the quantile regressions that the coefficients of external auditors' independence are positively related to DACC and statistically significant at 1% and 5% levels in different percentiles (e.g., 0.05, 0.1, 0.3, 0.4, 0.8, 0.85 and 0.90). This positive relationship is supported

by the notion that auditing firms tolerate less earnings manipulation in larger clients due to economic dependence (Kanagaretnam *et al.*, 2010). By contrast, it was found that most of the coefficients for auditors' expertise show a significant negative association between external auditors' industry specialisation and discretionary accruals, which implies that an auditor's expertise can significantly curb managerial misreporting behaviour. By contrast, the empirical results from quantile regression show no evidence of a strong correlation between external auditors' activities and discretionary accruals in the U.K non-financial companies across all percentiles of the quantile regression. The study's empirical results from the quantile regression, however, reveal different relationships (negative, positive and no relationship) between the variables for auditors' switch and the discretionary accruals at different distribution quantiles.

In addition, it is observed from the results of the quantile regression that the coefficients in the differential industrial sectors, (i.e., IND_1 and IND_4) have a significant negative relationship across most of the quantiles. This indicates that the average discretionary accrual for firms in these industrial sectors are significantly much lower than the average for the group of the rest of the other industries. By contrast, the coefficients of the remaining industrial sector dummies (IND_2 and IND_3) are significantly positive across most of the quantiles. This implies that the degree of EM for an average firm in these

industrial sectors is higher than the comparable figure for a typical firm operating in the manufacturing industry.

In terms of the stock market regulation, the results from the quantile regression reveal a positive sign on the differential slope coefficient on the DUM_FTSE dummy variable at the bottom of the quantiles. Then, it reverts to a negative sign in the remaining percentiles. The implication is that FTSE 100 firms that strictly adhere to conventional accounting rules and regulations when recording their actual accounting figures reported higher average EM figures than their peer FTSE 250 firms. The empirical results of the quantile regression, furthermore, show that the coefficients of the variable DUM_MAN for most quantiles are negatively associated with DACC and statistically insignificant. This implies that firms' managers might exploit the voluntary adoption period of KAM adoption to engage more in EM than the compulsory period.

In the next chapter, this study replaces the metrics for accrual earnings management (AEM) using the modified Jones model with a different measurement of EM, namely, real earnings management (REM) (Roychowdhury, 2006), to check the robustness of the basic results reported in the current chapter.

Chapter Seven: Robustness Using Real Earnings Management

7.1 Introduction

The preceding chapter has utilised the quantile regression method to investigate the impact of key audit matters (KAM) quantity and quality on accruals earnings management (AEM) using the modified Jones model for the U.K non-financial firms. The results revealed that KAM quantity and quality negatively impact the estimated EM variable and are statistically significant for most percentiles. These results imply that both KAM quantity and KAM quality variables have a strong potential to lower the tendency for earnings manipulation activities amongst the U.K non-financial firms listed on the FTSE 350. Nonetheless, it is found that risks related to the entity level (ELKAM) reduce more DACC than risks associated with the accounting level (ALKAM).

The current chapter aims to offer an additional sensitivity analysis to confirm the robustness of the results from the previous chapter to changes in the definition of EM. Consequently, the metrics for accrual-based earnings management using the modified Jones Model (1995) were replaced with the variables for real activity earnings management (REM) following the recommendation of Roychowdhury (2006). The author suggested three main REM indicators: abnormal cash flow from operations, abnormal production costs, and abnormal discretionary expenses. Previous research in accounting literature has documented a substitution effect between REM and AEM,

depending on relative costs. However, this study uses all the three REM metrics mentioned above to approximate U.K-listed firms' real activity earnings management practices. In addition, the three indicators of REM are combined into a composite index for REM using the Principal Component Analysis (PCA) method.

Subsequently, this chapter will present the results of the empirical analysis of the relationship between these REM indicators and KAM quantity and quality metrics. The argument here is organised into four main sections: Section 7.2 elucidates the results of REM's descriptive statistics, Section 7.3 discusses the quantile regression results for the relationship between REM and the remaining variables, and Section 7.4 summarises the key findings in this chapter.

7.2 Descriptive Statistics

As mentioned earlier, the values reported in Table 6 aim to capture the magnitude and the direction of real activities earnings management (REM), unlike other studies that use the absolute value to capture only the extent of REM. However, Table 6 shows that the level of REM using the Principal Component Analysis (PCA) method has a negative mean value of -0.009 for the full sample of the study (FTSE 350). It also reports minimum and maximum values of -5.17 and 6.653, respectively, for the same group. Furthermore, the results of the descriptive statistics report a value of 1 in the standard deviation,

from which it can be concluded that the real activities mismanagement is highly dispersed in listed companies on the FTSE 350. Thus, the variation of REM values is higher compared to the discretionary accrual values reported previously in Chapter 6, Section 6.2.1.1. This implies that firm managers concentrate on real manipulation practices more than accruals because REM activities are harder to track and scrutinise for outside parties in comparison to AEM (Cohen & Zarowin, 2010). This is because REM can be easily masked in the form of everyday business transactions; by contrast, AEM implicates accounting methods that can be undoubtedly monitored and assessed by outsiders (Roychowdhury, 2006). For instance, management can manipulate earnings by organising income through the arrangement of the base or the timings of transactions. They could increase discounts for a certain period or shrink the marketing expenses for a certain time periods (El-Deeb & Albanna, 2018).

Other studies, however, have also reported a negative average value; for example, Kim *et al.* (2020) in their research examined the relationship between the extent of REM and the cost of debt capital in an international context. They used a sample of 14,654 observations from 1987 to 2013 across 18 countries. They reported negative mean values of three different proxies of REM (REM1, REM2 and REM3) -0.103, -0.093 and -0.067, respectively. Therefore, the extent of REM in this study seems less negative than those mentioned earlier. However, the current study's t-tests indicate that the mean central tendency is

significantly negative in the presence of key audit matters (KAM). This means that the U.K-listed firms' managers operating in the group FTSE 350 engaged in downward EM through income decreasing real manipulation practices. These findings reinforce the emerging notion that U.K-listed firms are likely to manage earnings by increasing expenses and reducing assets sale to increase their associated compensation (Eldenburg *et al.*, 2011)

In terms of the two sub-samples of FTSE 100 and FTSE 250 comparisons, it is observable that there is a difference in the level of REM among large-capitalised firms (FTSE 100) and small-capitalised firms (FTSE 250). The t-test for the equality of mean for the two sub-samples is significantly different from zero, meaning that the reported REM average for large-capitalised firms is noticeably lower than that observed for small-capitalised firms. Besides, the mean value of the REM reported for small-capitalised firms is 0.072, which is remarkably higher than their large-capitalised peers, with a mean value of REM of -0.089. This indicates that large-sized companies practise less earnings management through REM activities than their counterpart small-sized companies. With that being said, this could imply that small-capitalised firms (FTSE 250) are not as strictly monitored as large-capitalised firms (FTSE 100) (Susanto & Pradipta, 2019).

7.3 Empirical Results of Quantile Regression and Discussion

To confirm the robustness of the results of the impact of key audit matters (KAM) disclosed in the audited report on accrual-based earnings

management (AEM), this study has conducted an additional sensitivity analysis of all the variables underpinning the empirical analysis. Consequently, AEM proxy was replaced by real activity earnings management (REM) using the Principal Component Analysis (PCA) to calculate the extent and direction of REM.

This section, however, aims to check the robustness and provide a discussion on the basic empirical analysis results of the impact of KAM quantity and quality, company characteristics and external governance mechanisms on REM among the sample of 201 nonfinancial firms listed on the London Stock Exchange from 2013 to 2018 between the quantile 5 and 95 percent. at various quantile levels. The argument here is organised into three main sub-sections: sub-section 7.3.1 discusses the relationship between KAM and REM, sub-section 7.3.2 explains the association between company characteristics and REM, and sub-section 7.3.3 reports the relationship between the external governance mechanisms variables and REM.

7.3.1 Key Audit Matters and Real Earnings Management

To assess the impact of key audit matters quantity and quality on REM, this research uses the variable NB_KAM to proxy KAM quantity and uses the two variables ALKAM and ELKAM to proxy KAM quality. The quantile regression results on the partial correlation between REM and the two groupings of KAM quantity and KAM quality provide simultaneous estimates of the variables in each of the percentiles ranging from 0.05 to 0.95 and are

illustrated in Tables 20 and 21. However, the results from the quantile regression clearly indicate that the estimated coefficients vary within the quantile levels. They show that the coefficients of key audit matters quantity (NB_KAM) are positively associated with REM and statistically significant at 1% and 5% levels almost in the first half of percentiles from the 0.05 quantile to the 0.50 quantile. Then it reverts to an insignificant negative relationship between REM and NB_KAM in the second half of percentiles from the 0.55 to the 0.95 quantiles. Notably, the KAM quantity variable has an insignificant effect on REM when the quantiles are higher; by contrast, it has a significant positive association when the quantiles are lower. Comparing the results of AEM and REM, it was found that KAM quantity (NB_KAM) has a bigger effect on AEM through discretionary accruals than REM. The relationships between KAM quantity- AEM and KAM quantity- REM indicate that the disclosure of KAMs can significantly reduce the managers' earnings manipulation behaviour, when it comes to accruals earnings manipulation, more than real activities earnings management. This implies that firms' managers concentrate on real manipulation practices more than accruals because REM activities are harder to track and scrutinise for outside parties in comparison to AEM (Cohen & Zarowin, 2010). This is because REM can be easily masked in the form of everyday business transactions; by contrast, AEM implicates accounting methods that can be undoubtedly monitored and assessed by outsiders (Roychowdhury, 2006). These findings fortify the emerging notion

that the U.K-listed firms' managers shift to real earnings management activities as a substitute for accruals-based earnings management (Ernstberger *et al.*, 2017; Chi *et al.*, 2011). This is consistent with prior studies (e.g., Mahmoud, 2020), who revealed a significant shift towards real activities earnings management, specifically for firms with AEM constrained after adopting KAM disclosure requirements, as these can potentially upturn auditors' efforts to curb AEM.

With reference to key audit matters quality, the empirical results of the quantile regression show that the coefficients of the ALKAM variable are negatively associated with REM and statistically significant at a 1% level for the most part of percentiles, especially in the second half of the quantiles, from 0.55 to 0.95 percentiles. By contrast, it was found that all the ELKAM variable coefficients are positively correlated with REM and statistically significant at 1% and 5% levels in the first half, from the percentiles 0.1 to 0.5, but statistically insignificant from the percentiles 0.55 to 0.75. Moreover, at the top of the quantiles, between 0.80 and 0.90 percentiles, the results show a significant and positive correlation between REM and ELKAM variables at a 5% level. This implies that risks related to the accounting level risks (ALKAM) can significantly reduce the extent of REM more than those related to the entity level (ELKAM). By comparing the results of the impact of KAM quality on AEM and REM, interestingly, it was found that ALKAM risks influence REM but not AEM; in contrast, ELKAM risks influence AEM but not REM. This

supports the notion that firms' management is more likely to prefer practising REM in case of the disclosure of ALKAM risks related to accounting estimates and choices that have been considered highly uncertain than on other matters associated with an entity's specific risks ELKAM, given that the information in the financial statements with high uncertainty should obviously be the emphasis by auditors to avoid litigation and reputation damage.

Table 20: Quantile Regression of REM Using the Principal Component Analysis and KAM Quantity

Quantile / Variable	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
NB_KAM	.071*	.043*	.04**	.056***	.055***	.052***	.043***	.04***	.023	.007	-.011	-.017	-.032	-.031	-.028	-.017	-.015	-.042	-.117**
IBOD	.006	.004	.003	.003	.005**	.004***	.005***	.005***	.006***	.005***	.006***	.007***	.006**	.007**	.007***	.006*	.004	.003	-.002
BOEX	-.004	-.001	0	-.001	-.002	-.002*	-.002	-.002	-.001	-.001	-.001	-.001	-.001	-.001	0	-.001	-.002	-.001	-.006
BOA	-.006	-.006	-.005	-.005	-.003	-.006	-.009**	-.008*	-.006	-.004	-.008	-.008	-.006	-.004	-.003	.001	.008	.012	.016
INDAC	-.004	-.001	0	0	0	0	.001	0	0	0	-.001	-.001	0	-.001	0	0	.002	.001	.003
AUCEX	.005	.003	.002	.002	.001	0	-.001	-.001	0	0	0	0	.002	.001	.002	.002	.004	.006	.008
AUCA	.006	.001	0	-.002	-.007	-.008*	-.005	-.006	-.009*	-.009*	-.009*	-.009	-.007	-.007	-.008	-.006	-.005	-.005	.005
SIZE	0	0	0	0	0	0*	0*	0*	0	0	0	0	0	0	0	0	0*	0	0
PROF	-.001	-.001	-.002	-.003	-.003	-.004*	-.003	-.003*	-.003	-.004*	-.004*	-.004	-.003	-.004	-.002	-.003	-.006	-.012**	-.011
LEV	-2.919***	-2.417***	-2.115***	-1.87***	-1.48***	-1.301***	-1.058***	-.963***	-.672***	-.441**	-.172	.227	.539**	1.095***	1.922***	2.37***	3.121***	3.935***	5.503***
GROW	.001	.001	.001	0	0	0	0	-.001	-.001	-.001	-.001	-.002	-.002*	-.003*	-.004***	-.004***	-.002	-.003	-.003
LIQ	-.002	-.001	-.01	-.028	-.03	-.03	-.027	-.03	-.024	-.02	-.014	-.003	.001	-.002	-.001	-.001	-.009	0	-.004
EXAIND	.043	.182	.094	.011	-.055	-.143	-.142	-.096	-.023	-.001	.083	.13	.04	.111	.078	-.022	-.077	.001	-.23
EXAEX	-.095***	-.072***	-.074***	-.056***	-.072***	-.056***	-.018	-.016	-.016	-.011	-.011	-.009	-.003	-.01	-.014	-.015	-.017	-.018	.002
EXAA	0*	0**	0**	0**	0**	0***	0**	0**	0*	0	0	0	0	0	0	0	0	0	0
SWITCH	-.093	-.029	-.056	-.029	-.041	-.012	.017	.021	.05	.053	.047	.003	-.027	.03	-.028	-.041	-.017	.099	.26
DUM_MAN	.04	.034	.04	.05	.044	.041	.022	.008	-.017	-.002	.012	.007	.019	-.017	-.04	-.032	-.065	-.087	-.001
DUM_FTSE	-.483***	-.33***	-.277***	-.211***	-.194***	-.175***	-.183***	-.18***	-.169***	-.166***	-.173***	-.197***	-.166**	-.177**	-.09	-.054	.004	.036	.291
IND1	-.117	-.076	-.004	.129	.169**	.168**	.184**	.207***	.17**	.152*	.158**	.122	-.02	-.038	-.145	-.161	-.154	-.239	-.289
IND2	.011	.01	.007	.004	.012	-.001	-.02	-.044	-.108	-.116	-.131	-.151	-.277**	-.267**	-.241**	-.199	-.268*	-.358*	-.533*
IND3	-.169	-.007	.013	.025	.014	.046	.099	.157**	.175**	.242***	.293***	.236**	.173	.178	.074	.2	.132	.01	.317
IND4	-.124	-.04	.013	-.005	.031	.094	.136*	.195***	.174**	.183**	.262***	.26***	.169	.166	.103	.14	.106	.124	-.282
Constant	-.703	-.287	-.009	.17	.613	1.156**	1.249**	1.133**	1.126*	1.008	1.411**	1.361*	1.115	.783	.677	.192	-.486	-.758	-1.369

Table 21: Quantile Regression of REM Using the Principal Component Analysis and KAM Quality

Variable \ Quantile	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95
ALKAM	.017	.017	.003	.004	.004	-.011	-.014	-.024	-.037	-.043*	-.064***	-.082***	-.098***	-.101***	-.09**	-.09**	-.136***	-.163***	-.247***
ELKAM	.116**	.066*	.056**	.091***	.08***	.078***	.075***	.062***	.058***	.042*	.027	.024	.012	.018	.032	.063*	.091**	.086*	.083
IBOD	.006	.005	.003	.003	.003*	.003*	.004**	.005***	.005***	.005***	.005***	.006***	.005**	.007**	.005	.005	.003	.001	0
BOEX	-.003	-.001	0	0	-.001	-.002	-.002	-.002	-.001	0	-.001	-.001	-.001	-.002	-.001	-.001	-.003	-.004	-.006
BOA	-.005	-.003	-.005	-.006	-.003	-.007	-.009**	-.007	-.008*	-.008*	-.01**	-.011*	-.008	-.007	-.005	.001	.006	.01	.012
INDAC	-.003	-.002	-.001	0	.001	0	0	0	0	0	-.001	-.001	0	0	.001	.001	.002	.002	.003
AUCEX	.004	.003	.002	.002	.002	0	0	0	0	.001	0	.001	.003	.003	.002	.003	.004	.006	.008
AUCA	.003	.004	-.002	-.003	-.008	-.006	-.005	-.004	-.006	-.009*	-.008	-.008	-.007	-.011	-.007	-.01	-.007	-.004	.002
SIZE	0	0	0	0	0	0*	0**	0*	0*	0	0	0	0	0	0*	0**	0**	0***	0*
PROF	0	-.001	-.002	-.002	-.003	-.003*	-.003	-.003	-.002	-.004*	-.004**	-.005*	-.004	-.002	-.004	-.003	-.009**	-.008	-.005
LEV	-3.007***	-2.471***	-2.091***	-1.904***	-1.594***	-1.334***	-1.092***	-.961***	-.79***	-.449**	-.177	.212	.345	1***	1.948***	2.485***	3.017***	3.637***	4.571***
GROW	.001	.001	0	0	0	0	-.001	-.001	-.001	-.001	-.001	-.002	-.002	-.003**	-.004**	-.005***	-.002	-.003	-.003
LIQ	.01	.004	-.008	-.026	-.033	-.032*	-.029	-.03	-.03	-.028	-.012	-.003	.003	.005	.009	.009	.013	.01	.012
EXAIND	.12	.219	.143	.051	.014	-.076	-.1	-.14	-.058	.061	.04	.109	.002	-.005	.098	.193	.236	.003	.051
EXAEX	-.024	-.072***	-.052***	-.036***	-.054***	-.053***	-.01	0	-.006	-.014	-.017	-.02	-.019	-.028	-.032*	-.032	-.035	-.036	-.036
EXAA	0*	0**	0*	0***	0***	0***	0***	0**	0*	0	0	0	0	0	0	0	0	0	0
SWITCH	-.062	0	-.028	.022	-.007	.015	.074	.057	.042	.062	.041	.026	-.001	.023	.046	.003	.087	.109	.043
DUM_MAN	.02	.014	.036	.037	.033	.017	.003	-.004	-.003	.009	.004	.002	.001	.017	-.033	-.045	-.049	-.032	.058
DUM_FTSE	-.433***	-.361***	-.25***	-.207***	-.182***	-.166***	-.161***	-.156***	-.151***	-.162***	-.161***	-.177***	-.128*	-.131	-.065	-.071	-.03	.164	.343*
IND1	-.149	-.131	-.017	.119	.175**	.176***	.155**	.16**	.156**	.131*	.109	.062	-.085	-.107	-.186	-.177	-.223	-.28*	-.306
IND2	.02	-.022	-.018	-.023	.016	0	-.042	-.084	-.132	-.142*	-.154*	-.185*	-.316***	-.291**	-.267**	-.202	-.245	-.281	-.363
IND3	-.045	.038	-.003	.021	.024	.031	.023	.122	.213***	.248***	.287***	.275***	.144	.072	.083	.187	.223	.18	.954***
IND4	-.083	-.028	.004	.019	.091	.172**	.146**	.136*	.136*	.174**	.206***	.221**	.109	.117	.086	.173	.195	.075	-.124
Constant	-.57	-.798	.153	.386	.609	1.176**	1.296**	.919	1.171*	1.35**	1.594***	1.515**	1.384	1.648*	.902	.393	-.144	-.478	-1.036

7.3.2 Company Characteristics and Real Earnings Management

This sub-section discusses the quantile regression results of the relationship between real earnings management (REM) and the category of company characteristics variables. The latter comprises: (i) board governance characteristics, including independence of the board of directors (IBOD), board expertise (BOEX) and board of directors' activity (BOA); (ii) audit committees' characteristics that include independence (INDAC) of audit committees' expertise (AUCEX) and audit committees' activity (AUCA); and finally (iii) firm's financial characteristics including firm size (SIZE), profitability (PROF), leverage (LEV), growth (GROW) and liquidity (LIQ). Nonetheless, the empirical results of the quantile regression for board governance characteristics show that the coefficients of IBOD are positively related to REM across all percentiles and statistically significant at a 1% level in the quantiles between 0.30 and 0.75. On the other hand, the coefficients of IBOD in the bottom of the quantiles (between 0.05 and 0.25) display an insignificant positive relationship. These results imply that the variables of IBOD and REM are moving in the same direction, which means that the same drivers influence them. Thus, the researcher might draw the conclusion that REM will increase in tandem with the independence of the board of directors in the U.K non-financial listed companies. Compared to the accrual earnings management (AEM) results in the previous Chapter, subsection 6.3.2, it was observed that when the board of

directors contains more outsiders (independents), more are motivated to engage in aggressive earnings manipulation through real activities EM than accruals-based EM.

On the other hand, the empirical results of the quantile regression for board governance characteristics show that board expertise (BOEX) and board of directors' activity (BOA) are negatively related to REM but statistically insignificant across almost all percentiles. These results suggest that the expertise and the number of meetings (activity) of the U.K FTSE 350 firms' boards have an insignificant impact on real activity managerial financial reporting. These findings differ from the results obtained from the previous chapter; it was found that board expertise and their activity have no impact on AEM, which means that the board of directors use their knowledge and activities to manipulate REM more than AEM.

Regarding audit committees' characteristics, the empirical results from the quantile regression reveal different relationships between the variables audit committees' independence (INDAC) and REM at different distribution quantiles. This infers that quantile regression allows for connections between the outcomes of the variable of interest REM and the variable of INDAC to be non-constant across different values of the percentiles. However, it was found that INDAC is insignificantly negative at the following percentiles: 0.05, 0.1, 0.55, 0.60 and 0.70. Furthermore, the results show a positive relationship in percentiles 0.35, 0.85, 0.90 and 0.95, or no relationship in the remaining

percentiles. These results generate doubt as there is no clear sign of the relationship between audit committees' independence and REM. Overall, the current study can conclude that firms with a higher proportion of independent non-executive directors on their audit committees have no impact on REM activities or AEM. These findings are consistent with the results of Kusnadi *et al.* (2016), which call into question the necessity of mandating all audit committee members. In fact, they found that the sample firms have audit committees with mostly independent directors, and any incremental independence of audit committees has no significant effect on the firm's financial reporting quality.

With reference to audit committees' expertise (AUCEX), the study's results from the quantile regression clearly indicate that the estimated coefficients of AUCEX are positively associated with REM but statistically insignificant across almost all percentiles. This implies that REM will increase in tandem with the level of expertise of audit committee members in the U.K non-financial listed companies. These results are in line with the findings of Dhaliwal *et al.* (2010), who claimed that audit committees' expertise could increase earnings quality. Actually, they discovered that the presence of finance and accounting experts on audit committees positively impacts financial quality for US companies. Certainly, financial analysts, as well as investment bankers, who are finance experts, supplement accounting experts to have a higher reporting quality. By comparing the accrual earnings

management (AEM) results in the previous Chapter, sub-section 6.3.2 and the actual results, it was found that when the level of audit committees' expertise is high, firms' management are more motivated to engage in aggressive earnings manipulation through real activities EM than accruals-based EM.

Another strand of audit committees' characteristics is audit committees' activity (AUCA), measured by the frequency of meetings. However, the empirical results of the quantile regression show that AUCA has a negative association with REM but is statistically insignificant across almost all percentiles and is significant at the 10% level only on 0.30, 0.45, 0.50 and 0.55 percentiles. This implies that holding periodic meetings influences financial reporting quality by lowering REM in the U.K FTSE 350 firms. These results are consistent with prior studies (e.g., Bamahros & Wan-Hussin, 2015; García *et al.*, 2010; Nahar *et al.*, 2010), which have concluded that the frequency of audit committees' meetings improves earnings quality. In addition, by comparing the relationship between AUCA, AEM and REM, it was found that AUCA impacts negatively on REM and has no impact on AEM.

Regarding the control variables related to the firm's financial characteristics, the empirical results show no evidence of a correlation between SIZE and REM in the U.K nonfinancial companies across all percentiles of the quantile regression. These results are similar to those obtained with the AEM regression outcome in the previous chapter and contradict the accounting literature that argues that firm size can be negatively or positively linked to

REM. For example, these findings oppose the findings of Mardessi & Fourati (2020), who found that a company's size is positively and significantly associated with REM, and it controverts the results of Khanh & Nguyen (2018), who found that firm size has a negative effect on REM.

Moreover, the regression results show a negative correlation between the second firms' financial characteristic, which is the profitability (PROF) and REM. Albeit, this is statistically insignificant in almost all percentiles, with an exception in the following quantiles: 0.30, 0.40, 0.50 and 0.55 at a 10% level, and on 0.90 quantiles at a 5% level. These findings contradict the regression outcome of those obtained with the AEM in the previous chapter, which shows a significant positive correlation at a 1% level in the first half of the quantiles and no correlation in the second half of the quantiles. This dissimilarity implies that managers in the U.K nonfinancial listed firms shifted their focus from accrual-based earnings management to real activities manipulation (Roychowdhury, 2006; Cohen & Zarowin, 2010). In another argument, Graham *et al.* (2005) specify that earnings manipulations are most likely to be realised through real operational activities because of the disadvantage related to the discretionary accruals. This involves the timing of profitable investment and reduction of expenditure to increase the profit level and giving out a discount to customers to improve sales.

In relation to leverage (LEV), the empirical results of the quantile regression show that the coefficients of variable LEV are negatively and

statistically significant at a 1% level in the first half of quantiles, from 0.05 to 0.55. Then, the sign reverts to a positive and significant correlation between LEV and REM at a 1% level across the second half of quantiles, especially from the 0.55 to the 0.95 percentiles. The negative and significant correlation between LEV and REM found in the first half of quantiles is similar to the results presented in the last chapter related to LEV and AEM. In contrast, the positive and significant correlation between LEV and REM found in the second half of quantiles contradicts the results obtained with the AEM regression outcome. This indicates that leverage curtails both activities of earnings manipulation; however, it can substantially mitigate accrual earnings mismanagement across all percentiles and can statistically mitigate real activity earnings management on the first half of percentiles, but not on the second half of percentiles, where firms' managers are expected to engage in aggressive earnings manipulation.

In terms of the market-to-book ratio which represents the company's growth (GROW), the empirical results from quantile regression show a negative correlation between GROW and REM in the U.K non-financial companies amongst the quantiles 0.40 to 0.95, with significance in the quantiles 0.75 and 0.80 at a 1% level and quantiles 0.65 and 0.70 at a 10% level. At the bottom of the quantiles, the results show a positive or no correlation between GROW and REM. These findings are dissimilar to those obtained with the AEM regression outcome in the previous chapter, which shows no correlation

between both variables across all percentiles of the quantile regression. In addition, the results are contradictory to the notion that corporations with high growth are expected to engage in discretionary accruals upwards as they are under the most pressure to adopt aggressive accounting policies to report increased earnings (Chih *et al.*, 2008).

Concerning the company's liquidity (LIQ), the empirical results from quantile regression show that the coefficients of the variable LIQ are negatively and statistically insignificant across all the quantiles. The negative REM-LIQ relationship indicates that liquidity curtails real activity earnings manipulation, but not with a significant impact. the findings are comparable to the results obtained with the AEM regression, which indicate that liquidity levels can constrain both AEM and REM in the U.K non-financial companies.

Additionally, these results support other studies' findings (e.g., Ascioglu *et al.*, 2012; Deng & Ong, 2018; Huan & Ho, 2020) which reveal that an increase in stock liquidity is linked with a decrease in the degree of REM. Furthermore, this outcome is consistent with the notion that liquidity reduces managers' incentives to manipulate reporting results (Li & Xia, 2021).

7.3.3 External Governance Mechanisms and Real Earnings Management

Following similar methodology in assessing the impact of control variables on accrual-based earnings management (AEM), this study has tested the same control variables related to the category of external governance mechanisms' characteristics to check for robustness. These variables are: (i)

external auditors' characteristics, which includes external auditors' independence (EXAIND), external auditors' expertise (EXAEX), external auditors' activity (EXAA) and external auditors change (SWITCH); (ii) industry regulation (IND_N); (iii) stock market regulation (DUM_FTSE); and (iv) professional auditing standards (DUM_MAN).

To capture the impact of external auditors' characteristics on real earnings management (REM) activities, this study includes external auditors' independence, expertise, activity, and external auditors' change. However, the empirical results from the quantile regression reveal different relationships between the variables for external auditors' independence (EXAIND) and REM at different distribution quantiles. These results are dissimilar from the findings found in the previous chapter with DACC, where it was discovered that the coefficients of EXAIND are positively related to DACC and statistically significant at 1% and 5% levels in different percentiles. On the other hand, it was found that most of the coefficients for auditors' expertise (EXAEX) show a negative association between external auditors' industry specialisation and REM, with a significance in the bottom of the quantiles at a 1% level. This implies that real activities manipulation occurs when management deliberately manipulates the real operational activities at small quantiles. However, these results correspond to the findings found in the previous chapter with DACC, where most of the coefficients for auditors' expertise show a significant negative association between external auditors' industry specialisation and

discretionary accruals. In comparison, the empirical results from quantile regression show no evidence of a correlation between external auditors' activities (EXAA) and REM in the U.K non-financial companies across all percentiles of the quantile regression. However, it was found the same results compared to AEM regression results. At the same time, the empirical results from the quantile regression revealed similar results to those obtained with the AEM regression outcome in the previous chapter, where it was found different relationships between the variables for auditors' switching (SWITCH) and the REM and AEM at different distribution quantiles.

In terms of the differential industrial sectors (IND_N), it is observed from the results of the quantile regression that the coefficients of IND_1, which represents the manufacturing industry, have an insignificant negative relationship in the bottom and the top of the percentiles, while it shows a significant positive correlation in the middle of quantiles at 5% and 10% levels. This indicates that the degree of EM through real activities for the average of this industry is much lower than the degree of EM through discretionary accruals. Besides, it is observed from the results of the quantile regression that the coefficients of IND_2, which represents the group of Agriculture, Forestry and Fishing, Mining and Quarrying plus Construction that they have a negative relationship across most of the quantiles with significance at 5% and 10% levels in the top of the quantiles. This implies that the average degree of EM for these industrial sectors is significantly lower than the average for the rest of the

industries. The coefficients of the remaining industrial sector dummies, on the other hand, are significantly positive across most quantiles. This signifies that the average firm in these industrial sectors has a higher degree of EM than the comparable figure for a typical firm in the manufacturing industry.

With reference to the stock market regulation, the results from the quantile regression reveal a negative relationship with significance at a 1% level across almost all quantiles, with an exception in the last three percentiles in the top quantiles. These results are inconsistent with the results obtained with AEM. The supposition here is that FTSE 100 companies that strictly adhere to conventional accounting rules and regulations when recording their actual accounting figures reported higher average EM figures than their FTSE 250 counterparts. Moreover, the empirical results of the quantile regression show an insignificant positive sign on the differential slope coefficient on the DUM_MAN dummy variable in the first half of the quantiles. Then, it reverts to a negative sign in the second half of the percentiles. These results are also consistent with the results obtained with AEM. The implication is that firms' managers might exploit the voluntary adoption period of KAM adoption to engage more in REM than the compulsory period.

7.4 Summary

The current chapter aims to conduct a robustness test of the basic results reported in the previous chapter. In addition, it presents the results from the quantile regression analysis of the impact of key audit matters (KAM) quantity

and quality, as well as the control variables on earnings management (EM) for the U.K non-financial firms between 2013 and 2018. Specifically, the modified Jones model for accrual-based earnings management (AEM) was substituted by real earnings management (REM) activities using the principal component analysis method instead of the conventional aggregated method (see sub-section 4.3.2).

The results show that KAM quantity has a bigger effect (significant negative sign) on AEM through discretionary accruals than REM. The relationships between KAM quantity and the two proxies of EM (REM and AEM) indicate that the disclosure of KAMs can significantly reduce the managers' earnings manipulation behaviour when it comes to accruals earnings manipulation, more than real activities earnings management. Whereas it was found that ALKAM risks influence REM but not AEM; in contrast, ELKAM risks influence AEM but not REM. This supports the notion that firms' management is more likely to prefer practising REM in case of the disclosure of ALKAM risks related to accounting estimates and choices. Besides, it is also observed that most company and external governance mechanisms' characteristics do not have a similar impact on proxies of REM compared to AEM. For instance, it was found that the independence of boards, board expertise, board activity, audit committees' independence, and audit committees' expertise and activity have no relationship with AEM. However,

they have either a positive or negative correlation with REM. All the key points and findings will be summarised in the upcoming chapter.

The next chapter concludes the thesis by summarising the key findings with associated policy recommendations.

Chapter Eight: Conclusion

8.1 Introduction

This research is designed to empirically examine whether the disclosure of key audit matters (KAM) restrains earnings management (EM) practices in the U.K market. For the purpose of this study, the analysis is conducted on the non-financial firms listed on the FTSE 350 index through a period of six years, from 2013 until 2018, using the quantile regression technique. This study used two proxies to measure EM, namely accrual earnings management (AEM) using the modified Jones model, and real earnings management (REM) using the Roychowdhury (2006) model. In addition, KAM measurements comprise two groupings: (i) KAM quantity (NB_KAM), which is proxied by the total number of KAMs disclosed in the KAM section in the firm's audit report for each year and (ii) KAM quality, which is distinguished by two variables for the specificity of KAM risk. The first variable is proxied by the total number of account-level-risk KAMs (ALKAM), and the second is approximated by the total number of entity-level-risk KAMs (ELKAM). As control variables, the current study used company and external governance mechanisms' characteristics to account for their connection with financial reporting standards.

The current chapter presents the study's concluding remarks. The argument here is organised as follows: Section 8.2 summarises the key points

and findings observable in the thesis. Section 8.3 offers the research's policy implications. Section 8.4 discusses the limitations of the empirical analysis underpinning this research, and finally, Section 8.5 makes recommendations for future research.

8.2 Summary of The Research

Chapter one introduces the study's background to bring to light the motivation for firms' managers to exercise manipulation practices to influence accounting outcomes to reflect firms' better financial situations to make the most of the investment opportunities. It also highlights the legal role of the auditors to curb the excessive managerial discretion in reporting information contained within accounting reports by attesting that information in the financial statement reporting is truly presented according to the accounting standards and reflects the firm's real operating outcomes and actual economic condition. Furthermore, it discusses the steps regulators took to bridge the gap between firms' management and stakeholders and improve the quality of financial reporting to recover public confidence in the tarnished audit profession, such as the introduction of the ISA 701. It also acknowledged how this study principally contributes to the disclosure of key audit matters and earnings management literature, including research motivation, contribution, research aims and objectives, and research methods. Finally, the chapter outlines the structure of the thesis.

Chapter two provides a review of the literature relevant to earnings management. Consequently, it provides a comprehensive review of empirical EM literature with particular emphasis on U.K firms. It starts by giving the origin and the alternative definitions of earnings management proposed by previous accounting literature. Besides, Then, it specifies the approaches, techniques, and types of earnings mismanagement that firms' management habitually use to manipulate their accounting figures. Besides, it discusses the key determinants of earnings management activities and provides EM types and their measurements These types include accrual-based earnings management measured by the discretionary accruals using the modified Jones model, which occurs when management changes estimates and accounting choices; real activities earnings management (REM), measured by Roychowdhury's (2006) model, using the principal component analysis, that has direct cashflow effects; and finally, classification shifting earnings management (CS), which occurs when managers shift core expenses classification to special items reported in the income statement. However, this study considers the first two EM proxies and ignores the classification shifting proxy. It discusses that corporate managers have a wide range of incentives that drive managers to manipulate accounting figures using different methods and techniques without breaching the accounting rules. Managers pursue EM by following alternative accounting approaches and policies that achieve their interests and comply with the circumstances surrounding them. Some of these reasons encourage

management to increase the earnings achieved, while others decrease those earnings.

Chapter three provides an overview of the existing literature on Key Audit Matters (KAMs), examining its definition and various aspects. The focus of this chapter is to explore the advantages and disadvantages associated with disclosing KAMs based on previous research, as well as the impact it has on shareholders and other stakeholders. Additionally, it delves into the correlation between KAMs and External Monitoring (EM), illustrating that KAMs contribute to transparency, accountability, clarity, and improved communication among auditors, management, and stakeholders. The inclusion of KAMs in audited reports represents a significant advancement in enhancing the relevance and value of the audit process. By providing deeper insights into the audit engagement and highlighting areas involving judgment and risk, KAMs play a crucial role in building trust and confidence in the financial reporting ecosystem.

Chapter four discusses the theoretical framework used in this study to address the relationship between key audit matters and earnings manipulation. Since this latter is perceived as an agency-related problem caused by information asymmetry, key audit matters is perceived as a monitoring mechanism available to stakeholders to mitigate the conflict and, thereby, to control managers' opportunistic behaviour. Given that the current study is concerned with the connection between key audit matters and earnings

management, the agency theory with conjunction with other theories are regarded as the main perspectives to explain and interpret the results of this study. In addition, it develops the hypotheses that have evolved in the literature to explain the association between earnings management activities, key audit matters, and predicts the directions of the selected control variables.

Chapter five justifies the authenticity of the dataset, explains the sampling distribution, and provides details on the calculations and classification of the earnings management metrics and KAMs that underpin this research. Besides, it specifies the regression models employed in the current study to assess the impact of KAM on EM. It categorised the variables into those primary interest and control with their hypothesised connections to the two measures of EM, involving AEM and REM. Two variables represent the vector of KAMs explicitly, KAM quantity and KAM quality, which form the variables of primary interest and control variables. The control variables are precisely classified into two main categories: company characteristics and external governance mechanisms. The former includes board governance characteristics (BC), audit committee characteristics (ACC) and financial characteristics (FC). The latter involves external auditors' characteristics (EXC), industry regulation (IND), stock market regulation (STM) and professional auditing standards (AS). Since the KAM section provides new information regarding material misstatement risks to financial reports' users, hence, it is another monitoring tool to mitigate the conflict of interest between

managers and stakeholders by combating information asymmetry, which will curb opportunistic managerial behaviour. Therefore, the current study expected a negative relationship between EM and the quality and quantity of reported KAMs. Furthermore, it also expected a negative correlation between EM and a firm's financial characteristics and external governance mechanisms variables as they play a vital role in restraining firms' managers from manipulating the accounting information. These expected correlations are verified based on a panel data structure constructed using 201 firms from the FTSE 350 over six years, from 2013 to 2018. Three key misspecification errors were addressed investigated before deciding on a multivariate analysis technique: normality, linearity, and heteroscedasticity. Likewise, the current study uses the quantile regression method instead of OLS to overcome the specification errors of non-normality, multicollinearity, and non-
stationarity.

Chapter six communicates the quantitative regression analysis findings of the impact of KAM quantity and KAM quality on EM proxied by the discretionary accruals (DACC), employing the modified Jones model. The results revealed that the independent variables of interest, KAM quantity and KAM quality, have the expected negative correlation with the estimated DACC variable, which were statistically significant for most of the quantiles. These outcomes suggest that both KAM quantity and quality variables have a strong potential to influence the tendency of earnings manipulation activities amongst

the U.K non-financial companies listed on the FTSE 350. Nevertheless, the results revealed that KAMs related to the entity level (ELKAM) decreased DACC more than KAMs related to the accounting level (ALKAM).

Furthermore, the study employed different control variables that might influence financial reporting quality, such as external governance mechanisms and company characteristics variables. The current research includes board governance, audit committees, and the firms' financial characteristics to capture the latter's impact on EM. For instance, the results show that board governance, including board independence, expertise, and activity, has no association with the EM across all percentiles. Similarly, it was observed that audit committees' characteristics, including audit committees' independence, audit committees' expertise and audit committees' activity have no relationship with EM in the presence of KAMs across all the percentiles. With reference to firms' financial characteristics, the findings exposed no evidence of a relationship between both variables (size, growth) and EM through all percentiles. On the other hand, it was revealed that the coefficients of leverage have a negative and significant correlation with DACC across all the percentiles at 1% and 5% levels. Simultaneously, the results exhibited an insignificant negative correlation between the liquidity coefficients and DACC. Furthermore, the results showed a significant positive connection between the profitability coefficients and DACC, though this observation was only visible among those companies at the bottom of the quantiles.

Moreover, to capture the effect of external governance mechanisms variables on EM, this study includes the characteristics of external auditors; this comprises external auditors' independence, expertise, activity and external auditors' switch, industry regulation, stock market regulation and professional auditing standards. Nonetheless, the quantile regression results demonstrate that the coefficients of external auditors' independence are positively connected with DACC and statistically significant at 1% and 5% levels in different levels of quantiles. By contrast, the findings reveal that most of the coefficients for auditors' expertise are significantly and negatively associated with the discretionary accruals, which suggests that external auditors' industry specialisation can significantly curb managerial reporting behaviour. In the other strand, the empirical quantile regression results reveal no evidence of a relationship between external auditors' activities and discretionary accruals in the U.K non-financial firms across all quantiles. Nevertheless, the empirical quantile regression results reveal different correlations between the variables for auditors' switch and the discretionary accruals at different distribution quantiles.

With reference to the differential industrial sectors, it is observed from the results of the quantile regression that the coefficients IND_1[18] and IND_4[19]

[18] Manufacturing

[19] Electricity, Gas, Steam and Air Conditioning Supply, Water Supply; Sewerage, Waste Management and Remediation Activities, Accommodation and Food Service Activities, Information and Communication, plus Arts, Entertainment and Recreation.

sectors have a significant negative correlation across most of the percentiles. This implies that the average degree of AEM for these two industrial sectors are significantly lower than the mean for the rest of the industries. The coefficients of the remaining industrial sector dummies, on the other hand, are significantly positive across most quantiles. This indicates that the average firm in these industrial sectors has a higher degree of EM than the comparable figure for a typical firm in the manufacturing industry.

The quantile regression results, furthermore, show a positive sign on the differential slope coefficient on the DUM_FTSE dummy variable at the bottom of the quantiles in terms of stock market regulation. In the remaining percentiles, it reverts to a negative sign. The implication is that FTSE 100 firms that strictly adhere to traditional accounting rules and regulations when recording their actual accounting figures reported higher average AEM figures than their FTSE 250 counterparts. At the same time, empirical quantile regression results show that the coefficients of the variable DUM_MAN for most quantiles are negatively associated with DACC and statistically insignificant. This implies that firms' managers may take advantage of the voluntary adoption period of KAM adoption to engage in more AEM than the mandatory period.

Chapter seven tests the robustness of the results from the initial quantile regression of the impact on real activity earnings management (REM) of KAM quantity and quality as well as the selected control variables. Specifically, the

analysis in this chapter changed the definition of EM by replacing the modified Jones model for accrual-based earnings management (AEM) with the real activity earnings management model proposed by Roychowdhury (2006). For the purpose of this study, three measurements were used to calculate an aggregated REM index variable comprising three proxies, involving abnormal levels of cash flows from operations, abnormal production costs, and abnormal discretionary expenses, using the principal component analysis method. The results, show that KAM quantity has a larger effect (significant negative sign) on AEM via discretionary accruals than REM. The correlation between KAM quantity and the two EM proxies (REM and AEM) suggests that KAM disclosure can significantly lessen managers' earnings manipulation behaviour when it comes to accruals earnings manipulation rather than real activities earnings management. In addition, it was discovered that ALKAM risks influence REM but not AEM, whereas ELKAM risks influence AEM but not REM. This supports the notion that firms' management is more likely to prefer REM when ALKAM risks related to accounting estimates and choices are disclosed in the financial statement. Furthermore, when compared to AEM, most company and external governance mechanism characteristics have a different impact on the REM proxy. It was discovered, for example, that board independence, board activity, board expertise, audit committee independence, and audit committee activity and expertise have no relationship with AEM

through discretionary accruals. Nonetheless, they have either a positive or negative relationship with REM.

Overall, it was found that KAMs' quantity and quality reduce managers' propensity to make aggressive financial reporting decisions. It is also found that the risks related to the entity level (ELKAM) reduce more discretionary accruals (DACC) than risks associated with the accounting level (ALKAM). Also, it was found that ALKAM risks influence REM but not AEM; in contrast, ELKAM risks influence AEM but not REM. In addition, it was found that most U.K firms' managers prefer REM over AEM to mispresent their earnings due to a lower possibility and subsequent costs of getting caught. This is because REM is harder to track and scrutinise for outside parties such as regulators and investors. According to Graham, Harvey, & Rajgopal (2005), earnings manipulations are most likely to be realised through real operational practices due to the disadvantage associated with accrual earnings management. The first assumption is that the effort of auditors and regulatory organisations to detect accrual earnings activities has shifted managers' focus from accrual-based practices to real activity manipulation, such as those associated with production, research, product pricing and development, and advertising. The second assumption is that focusing solely on accrual manipulation is risky because the difference between uncontrollable earnings and the anticipated level may exceed the stated amount through which accruals can be exploited after the fiscal year ends.

8.3 Research Policy Implications

The current study's findings provide insights for policymakers, practitioners, and academics. However, it has immediate policy implications for standard setters and regulators because it addresses concerns raised by both the Public Company Accounting Oversight Board (PCAOB) and the International Auditing and Assurance Standards Board (IAASB) about the significant changes proposed to the auditing reporting model. *First*, auditors should be aware that KAMs disclosure has attention-directing effects on the financial statement users. As a result, auditors should carefully consider how many, and specifically what, matters are classified as KAMs in the auditor's report. For example, while increased auditor disclosure affects how users navigate complex financial statements, standard setters should consider the possibility that the proposed model may inadvertently exacerbate the expectations gap that the proposed changes seek to address. *Second*, some of the negative consequences of KAM disclosures can be mitigated by explaining the concept of reasonable assurance and providing information specificity in the KAM section. For example, regulators should also look into the finding that readers are less attentive to other information in financial statements when the auditor discloses multiple risks that are classified as key audit matters, as this may imply that the users of the audited report do not integrate important information. In general, standard setters and regulators should be cautious of the negative consequences of KAM disclosures in the coming years.

On the other hand, practitioners may understand the importance and roles of KAM disclosure in constraining both accrual-based earnings management (AEM) and real activity earnings management (REM), thus improving financial reporting quality. Besides, the study's findings might be useful for firms' managers when evaluating and assessing their accountability and transparency. Furthermore, the findings may provide additional empirical evidence to support market participants' and shareholders' decisions in the U.K when evaluating the quality and reliability of financial reports. Additionally, the findings of this study could be used to improve financial analysts' earnings forecasts. It follows that high-quality information improves investors' ability to evaluate future financial performance by considering more accurate earnings forecasts. When the capital market perceives companies' high financial reporting quality, the disclosed financial statements containing KAMs may be viewed as more reliable information by decision-makers for credit assessment and investment decisions in general.

8.4 Limitations of The Research

The findings of this research are characterised by several main limitations that might have affected the results. For instance, the sample used in this study was restricted to six consecutive years; thus, data on the variables used in the regression model were only available from 2013, at the time of the ISA 701 implementation, to 2018, at the time of writing this thesis. It would

have been interesting if the period was greater than six years to identify and generalise the assumption of the relationship between the study's variables and the extent of earnings management. Furthermore, seeing that data has been gathered from the listed companies on the FTSE 350 in the U.K, it cannot be possible to draw the conclusion that these findings are generalisable to a wider organisational context since auditing and accounting regulation and rules might differ between countries. Besides, the study has yet to concentrate on the definition of KAMs' informative value rather than the quality and quantity of KAMs. In its place, in this study, the informative value was classified as added information based on individual auditors' judgments and auditors' interpretation of section ISA 701, which means that the assumptions about the informative value may not accurately reflect what users believe is informative. To the best of the knowledge, this is the first study to assess the impact of KAM quality and quantity on managerial reporting behaviour, and there are no other studies to compare with. As such, the relevance of the findings might be questioned. Also, it is worth mentioning that some of the databases used to collect data lack the necessary data for some variables, which would have required manual collecting. Therefore, due to time and resource limitations, this would not have been possible.

Then too, measurement errors in the estimation models of discretionary accruals are common due to unobservable variables. According to Siregar & Utama (2008), the modified Jones model's ability to accurately decompose

accruals into nondiscretionary and discretionary components is still questioned. The possibility of erroneous classifications of some elements of nondiscretionary accruals as discretionary accruals could explain the positive relationship between discretionary accruals and future profitability measures.

Furthermore, real activities-based earnings management models have challenges. It is difficult to distinguish between genuine business decisions and real earnings management. In addition to these limitations, variables may be omitted in this thesis, and different variable specifications may result in different findings.

8.5 Recommendations for Future Research

This research assesses how implementing the new ISA 701 of key audit matters would impact managerial reporting behaviour of firms which continually listed on the U.K stock exchange from 2013 to 2018. Though the study delivered invaluable implications, such as the context and period restriction, a natural suggestion for future research would be to extend the period and context of this work to enlarge the dataset, which will provide an up-to date picture, especially during Covid-19. It will also help to evaluate the behaviour of auditors, managers, and regulators during the period of uncertainty caused by the pandemic. In addition, future studies could use other measurements for accrual-based earnings management instead of the modified Jones model and investigate the most ideal measurement for earnings management. Future earnings management research could also use causality

tests to not only examine the relationships between these variables but also to identify causality. This would strengthen the theoretical arguments and justifications for these associations. Finally, future research could include all three earnings management proxies, namely accrual earnings management, real earnings management, and classification shifting, to investigate how U.K firms, use each type of earnings management in the presence of key audit matters, and whether they switch between them while keeping costs and benefits in mind.

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Appendices

Table 1: Types and techniques of earnings management.

Earnings management malpractices used by managers can be summarised as follows:

EM Practices	Earnings Management Techniques
Earnings management revenue for practices	**1.** Timing of revenue recognition: The following features of manipulation can be limited to: • Amplifying sales with post-sales revenue and financing benefits. • Modifying the confidential terms of sale of original agreements. • Recording registration of revenues for the goods of the Secretariat. 2. Recording revenues in excess of their value. 3. Recording fake revenues from counterfeit sales.
Earnings Management for Disclosure	The management uses fraud in the preparation of the financial statements, particularly the income statement. The fraud in the income statement contains the steps taken by the management to deliver the earning power to different income levels in a different way from the original form. For example, management can report non-recurring gains as other income, it is a non-operating expense. These practices have apparent levels of operating income higher than the real operating income, without affecting the bottom line.
Earnings Management Practices for The Non-cash Transactions and	**1.** Transactions under special conditions: Some firms sell their products to customers in return for their commitment to purchase goods from these customers. When the sale is made, the revenue is recognised immediately even though the sale was suspended on the condition that the firm bought from the customer and, therefore, the revenue was not realised at the time of sale. **2.** Non-cash transactions: In some cases, the firm carries out non-cash exchanges in which services and goods are offered in exchange for other services and goods without payment or cash collection of the total value of the services and goods exchanged. International accounting standards require that such transactions must be recorded at fair value.

	However, services are traded in a well-known and stable market where it is difficult to determine their fair value, which generates room for manipulation by managers.

Earnings Management Practices for Expenses	**1.** Capitalisation and Deferral of Expenses. These practices include: •Recording specific operating expenses for the current period as fixed assets. •Charging some of the contracts' expenses which are closed during the current period on other contracts that are still under implementation. •Charging for fixed assets on another asset with a lower depreciation rate and longer amortisation period. •Reducing the amortisation of particular fixed assets that are depreciated by way of revaluation, in order to overestimate the value of these assets at the end of the period. **2.** Overvaluation of Ending Inventories. This includes: •Receiving goods from suppliers at the end of the period, inventorying and evaluating them in stock, albeit they are not recorded in the books as purchased items, and not recording the number of credits due to suppliers in the party of liabilities. •Conducting fake transfers from the original stores to external stores or vice versa to cover the deficit in the number of inventories. •Non-reducing the value of the damage and loss of the goods from the value of the ending inventories. •Re-packaging damaged and stagnant goods and valuing them as valid ones. 3. Manipulation of The Composition and Use of Allocations of Expected Liabilities. This includes the following: • Non- recording the permanent decline in the value of fixed assets and intangible assets, overstatement and recognition of intangible assets in contravention of international accounting standards. For example, recognition of non-purchased goodwill or making unjustified changes in the amortisation methods utilised to reduce these assets and to the manipulating of the common depreciation ratios (Mertens, 2010). • Utilisation of provisions, such as the use of provisions from prior periods to cover operating expenses for the current period. • Increasing the value of provisions in accounting periods in which the firm earns high earnings or decreasing the value of provisions in periods of low earnings or losses.

Earnings Management Practices for Merger	Earnings manipulation practices associated with mergers can be summarised as follows: 1 - Manipulation of Merger Provisions: The merger process is usually accompanied by the incurring of the costs incurred by the merging company in order to achieve technical integration. These expenditures are estimated, and the value of the asset is recognised at the time of consolidation. In subsequent accounting periods, the required technical works are carried out and their cost is recorded against the value of the component provisions. Estimating the value of the provisions when they are formed and then reduced in subsequent accounting periods and recording this decrease as earning or using these provisions to cover the normal operating expenses in order to improve the level of earnings after the merger. 2. Manipulation of the Evaluation of The Assets of The Merged Institution: The acquiring management manipulates the assessment of the assets of the merged firm either by overvaluing their fair value or by recording the assets at their carrying amounts without verifying that they are at fair value.
Earnings Management for Contingent Liabilities.	Contingent liabilities are those possible obligations that are not conditionally repayable on a given date. However, following the fulfilment of the conditions specified in its contract, the liabilities become actual obligations and are payable in due time, such as financing, leases, exchange rate hedge contracts and interest rate. The company may invest in companies with a special purpose on its own or with third parties. These transactions result in actual liabilities and contingent liabilities to a company with a specific purpose. However, the ultimate responsibility for those obligations rests with the company (the parent company).

Table 6A: Variables Explanation

AEM_MJM = Accrual-Based Earnings Management using the Modified Jones Model, **REM_PCA** = Real Earnings Activities using the Principal Component Analysis method, **ALKAM**= number of KAMs related to accounting-level risks disclosed in the audited report, **ELKAM** = number of KAMs related to entity-level risks disclosed in the audited report, **NB_KAM** = quantity of key audit matters and is measured as the number of risks of material misstatement disclosed in the audited report, **IBOD** = Independence of Board of Directors and is measured as the number of independent nonexecutive directors divided by total number of board of directors in the firm, **BOEX**= Board Expertise and is measured as the proportion of experienced board in accounting or related financial management on the total numbers of board members, **BOA**= Board of Directors Activity and is measured as the number of board of directors' meetings held in a year, **INDAC** = Independence of Audit Committees and is measured as the number of independent nonexecutive directors on the audit committee divided by the total number of audits committee members, **AUCEX** = Audit Committee Expertise and is measured as the proportion of experienced audit members in accounting or related financial management on the total members of the audit committee, **AUCA** = Audit Committee Activity and is measured as the average number of audit committee meetings held in a year, **EXAIND** = External Auditor's audit quality and represents external auditor' s independence which is measured as dummy variable of (Big 4) that takes the value of 1 when a listed firm is audited by KPMG, PwC, Deloitte, or EY and 0 otherwise, **EXAEX** = External Auditor's Industry Expertise used to assess the effect of KAMs disclosed by auditors' industry specialist on EM, which takes the value (1) when the incumbent auditor is an expert in the industry where their

clients operate and the value (0) otherwise, **EXAA** = External Auditor's Activity that represents external auditor' s activity which is measured as the total fees paid by the firm to the auditing company for their auditing services. **SIZE** = Firm Size and is measured by the Logarithm of total assets at the year-end. **PROF** = Profitability and is measured by return on assets (ROA) which is calculated as net income divided by lagged total assets. **LEV** = Leverage and is measures as the total liabilities divided by total asset at the end of the financial year. **GROW** = Growth and is measured by market to-book ratio (MBV) which is used as a proxy to control for a firm's growth. **LIQ** = liquidity and is measured as the ratio of current assets divided by current liabilities at the end of the financial year. **DUM_MAN** = Dummy Variable for Mandatory implementation takes the value 1 if the year of KAM disclosure is mandatory and takes the value 0 if the year is voluntary. **DUM_SWITCH** = auditor's Switch and it takes the value 1 if the client has changed its external auditor since the previous year and takes the value 0 otherwise. **DUM_YEAR**= Dummy variable for year and represents the set of dichotomous year dummies, **IND1** = Manufacturing, **IND2** = Agriculture, Forestry and Fishing, Mining and Quarrying Plus Construction, **IND3** = Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles Plus Transportation and Storage, **IND4** = Electricity, Gas, Steam and Air Conditioning Supply, Water Supply; Sewerage, Waste Management and Remediation Activities, Accommodation and Food Service Activities, Information and Communication Plus Arts, Entertainment and Recreation, **IND5** = Real Estate Activities; Professional, Scientific and Technical Activities; Administrative and Support Service Activities Plus Public Administration and Defence; Compulsory Social Security.

Table 8: Total Number of KAM

KAM	2013	2014	2015	2016	2017	2018	Total number
Asset Impairment (not goodwill)	37	47	47	47	50	51	279
Revenue Recognition (no mentioning fraud)	81	107	106	102	97	95	588
Allowance for Doubtful Debt	10	10	8	7	6	6	47
Goodwill Impairment	78	94	90	86	80	68	496
Taxation Including Deferred Tax	84	99	91	82	78	73	507
Investment	11	12	11	10	39	46	129
Financial Instruments	15	19	18	14	13	12	91
Valuation of Inventories	31	39	40	41	33	31	215
Property Valuation	25	28	28	26	25	26	158
Insurance	3	1	2	4	5	5	20
Fixed Assets including Depreciation	10	8	5	6	6	4	39
Acquisition &Disposal	42	50	56	45	49	52	294
Going Concern	4	9	11	8	2	10	44
Legal Provision	19	22	18	17	21	18	115
IT- related issues	3	6	6	7	10	7	39
Provision other than legal	39	54	52	52	45	40	282
Accounting for long-term contracts	5	4	5	4	6	8	32
Mining/Oil Gas Accounting	1	2	2	2	2	2	11
Equity & Capital	6	10	5	7	6	8	42
Management Override/ related parties	56	13	13	11	12	11	116
Fraud in Revenue Recognition	37	8	4	5	6	6	66
Development Costs	8	11	12	11	13	10	65
Pensions	39	50	48	47	44	40	268
Biological Assets	0	1	0	1	3	2	7
Leases	5	4	3	4	5	7	28
Consolidation and audit Issues	3	5	2	4	1	1	16
Assets held for sale	6	3	0	0	0	1	10
Contingent Liabilities	4	5	7	6	6	6	34
Hyperinflation	1	2	1	1	1	0	6
Restatement/ Representation	16	16	18	21	29	26	126
Share-based payments	1	4	4	1	1	1	12
Controls/ Regulations	16	23	18	17	18	12	104
Changes in Accounting Policies	1	1	0	0	1	6	9
Supplier Rebates, Discounts, Incentives	9	17	18	19	11	12	86
Exceptional (s)	10	15	15	19	13	17	89
Accruals	4	5	6	4	4	3	26
Brexit	0	0	0	0	0	19	19
Total Reported KAMs	720	804	770	738	741	742	4515

Note: This table reports the total number of risk factors reported by auditors in each year (2013-2018).

Table 17: Pairwise correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
(1) AEM_MJM	1.000																										
(2) REM_PCA	-0.161*	1.000																									
	(0.000)																										
(3) AIKAM	-0.030	-0.083*	1.000																								
	(0.305)	(0.004)																									
(4) ELKAM	-0.165*	0.108*	0.024	1.000																							
	(0.000)	(0.000)	(0.397)																								
(5) NB_KAM	-0.193*	0.039	0.531*	0.534*	1.000																						
	(0.000)	(0.176)	(0.000)	(0.000)																							
(6) IBOD	-0.003	0.060	0.064	0.151*	0.154*	1.000																					
	(0.916)	(0.038)	(0.027)	(0.000)	(0.000)																						
(7) BOEX	-0.027	-0.060	-0.021	-0.085*	-0.028	-0.216*	1.000																				
	(0.348)	(0.037)	(0.457)	(0.003)	(0.327)	(0.000)																					
(8) BOA	0.080*	-0.059	0.032	0.042	-0.225*	-0.032	-0.045	1.000																			
	(0.006)	(0.040)	(0.264)	(0.148)	(0.000)	(0.272)	(0.114)																				
(9) INDAC	-0.009	-0.028	-0.041	-0.011	-0.012	0.350*	-0.001	0.018	1.000																		
	(0.746)	(0.336)	(0.154)	(0.709)	(0.679)	(0.000)	(0.975)	(0.539)																			
(10) AUCEX	0.029	0.017	0.065	0.096*	0.134*	0.122*	0.051	-0.044	0.006	1.000																	
	(0.318)	(0.552)	(0.025)	(0.001)	(0.000)	(0.000)	(0.074)	(0.128)	(0.841)																		
(11) AUCA	0.063	-0.036	0.035	0.063	-0.217*	0.020	-0.036	0.488*	-0.021	-0.014	1.000																
	(0.028)	(0.215)	(0.229)	(0.028)	(0.000)	(0.488)	(0.208)	(0.000)	(0.458)	(0.623)																	
(12) EXAIND	0.123*	-0.004	0.004	-0.028	-0.013	0.138*	-0.083*	0.075*	0.157*	0.073	-0.008	1.000															
	(0.000)	(0.903)	(0.877)	(0.331)	(0.660)	(0.000)	(0.004)	(0.009)	(0.000)	(0.011)	(0.786)																
(13) EXAEX	-0.113*	0.012	-0.059	0.000	0.536*	0.032	0.057	-0.455*	0.022	0.074	-0.473*	0.025	1.000														
	(0.000)	(0.685)	(0.040)	(0.990)	(0.000)	(0.263)	(0.049)	(0.000)	(0.445)	(0.010)	(0.000)	(0.384)															
(14) EXAA	-0.010	0.035	0.002	-0.014	0.166*	0.045	0.027	-0.163*	0.072	0.006	-0.162*	0.012	0.291*	1.000													
	(0.736)	(0.221)	(0.934)	(0.626)	(0.000)	(0.116)	(0.355)	(0.000)	(0.012)	(0.841)	(0.000)	(0.675)	(0.000)														
(15) SWITCH	-0.077*	0.018	-0.008	0.033	0.329*	0.050	0.046	-0.229*	0.055	0.077*	-0.215*	0.003	0.533*	0.148*	1.000												
	(0.008)	(0.533)	(0.791)	(0.249)	(0.000)	(0.083)	(0.112)	(0.000)	(0.056)	(0.008)	(0.000)	(0.905)	(0.000)	(0.000)													
(16) SIZE	0.050	-0.077*	0.097*	0.316*	0.246*	0.305*	-0.142*	0.005	0.097*	0.019	0.017	0.046	-0.003	0.027	0.030	1.000											
	(0.082)	(0.007)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.853)	(0.001)	(0.509)	(0.565)	(0.110)	(0.904)	(0.348)	(0.292)												
(17) PROF	0.257*	-0.099*	-0.112*	-0.132*	-0.152*	-0.036	0.032	0.041	0.003	0.030	0.054	-0.011	-0.008	-0.010	-0.020	-0.063	1.000										
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.210)	(0.267)	(0.159)	(0.916)	(0.295)	(0.063)	(0.694)	(0.787)	(0.717)	(0.487)	(0.028)											
(18) LEV	-0.099*	0.033	0.052	0.095*	0.173*	-0.002	0.046	-0.115*	-0.015	0.012	-0.138*	0.062	0.138*	0.067	0.089*	-0.038	0.237*	1.000									
	(0.001)	(0.255)	(0.072)	(0.001)	(0.000)	(0.949)	(0.114)	(0.000)	(0.614)	(0.683)	(0.000)	(0.032)	(0.000)	(0.021)	(0.002)	(0.184)	(0.000)										
(19) GROW	0.127*	-0.102*	-0.060	-0.061	-0.073	-0.037	0.028	0.026	-0.001	0.022	0.034	0.013	0.006	-0.008	-0.016	-0.033	0.567*	0.251*	1.000								
	(0.000)	(0.000)	(0.038)	(0.035)	(0.011)	(0.198)	(0.338)	(0.370)	(0.973)	(0.444)	(0.235)	(0.656)	(0.848)	(0.780)	(0.568)	(0.257)	(0.000)	(0.000)									
(20) LIQ	-0.004	-0.065	-0.012	-0.133*	-0.098*	-0.087*	0.052	0.050	0.007	0.053	0.039	-0.059	-0.026	-0.034	-0.024	-0.107*	-0.001	-0.291*	-0.038	1.000							
	(0.880)	(0.024)	(0.685)	(0.000)	(0.001)	(0.002)	(0.073)	(0.081)	(0.820)	(0.068)	(0.178)	(0.040)	(0.366)	(0.236)	(0.402)	(0.000)	(0.985)	(0.000)	(0.189)								
(21) DUM_MAN	-0.020	0.012	-0.014	-0.030	-0.043	0.080*	0.014	-0.006	0.045	-0.006	0.052	0.017	-0.026	0.045	0.026	0.009	-0.011	-0.012	-0.009	-0.013	1.000						
	(0.490)	(0.672)	(0.627)	(0.291)	(0.131)	(0.006)	(0.638)	(0.822)	(0.116)	(0.837)	(0.069)	(0.560)	(0.374)	(0.118)	(0.362)	(0.757)	(0.690)	(0.685)	(0.745)	(0.640)							
(22) DUM_FTSE	0.003	-0.081*	0.182*	0.092*	0.142*	0.189*	-0.043	0.016	0.017	0.102*	0.021	0.125*	-0.028	0.055	0.016	0.304*	-0.110*	0.167*	-0.067	-0.087*	0.003	1.000					
	(0.907)	(0.005)	(0.000)	(0.001)	(0.000)	(0.000)	(0.136)	(0.591)	(0.544)	(0.000)	(0.457)	(0.000)	(0.323)	(0.056)	(0.567)	(0.000)	(0.000)	(0.000)	(0.020)	(0.002)	(0.908)						
(23) IND1	-0.027	-0.026	-0.089*	0.095*	0.003	0.017	-0.096*	0.027	0.016	0.095*	-0.007	0.074*	0.013	-0.033	0.007	-0.021	0.011	-0.012	-0.019	0.049	0.000	-0.012	1.000				
	(0.355)	(0.358)	(0.002)	(0.001)	(0.926)	(0.561)	(0.001)	(0.344)	(0.580)	(0.001)	(0.810)	(0.010)	(0.656)	(0.257)	(0.820)	(0.461)	(0.691)	(0.674)	(0.512)	(0.091)	(1.000)	(0.685)					
(24) IND2	0.063	-0.162*	-0.074	-0.063	-0.088*	-0.002	0.029	0.053	0.061	0.011	0.067	0.060	-0.010	-0.024	-0.033	0.217*	-0.094*	-0.209*	-0.052	0.337*	0.000	0.014	-0.241*	1.000			
	(0.029)	(0.000)	(0.011)	(0.030)	(0.002)	(0.944)	(0.314)	(0.064)	(0.034)	(0.695)	(0.021)	(0.037)	(0.727)	(0.402)	(0.247)	(0.000)	(0.001)	(0.000)	(0.072)	(0.000)	(1.000)	(0.637)	(0.000)				
(25) IND3	0.061	0.129*	0.110*	-0.055	0.059	0.054	-0.024	-0.082*	-0.094*	0.042	-0.084*	-0.007	0.033	0.076*	0.045	-0.037	0.002	0.169*	-0.031	-0.131*	0.002	0.088*	-0.249*	-0.249*	1.000		
	(0.033)	(0.000)	(0.000)	(0.057)	(0.041)	(0.059)	(0.408)	(0.004)	(0.001)	(0.144)	(0.004)	(0.821)	(0.252)	(0.008)	(0.117)	(0.197)	(0.943)	(0.000)	(0.284)	(0.000)	(0.943)	(0.002)	(0.000)	(0.000)			
(26) IND4	-0.041	0.013	0.060	0.065	0.066	-0.128*	-0.002	-0.060	-0.081*	-0.031	-0.016	-0.210*	-0.018	-0.005	-0.020	-0.040	0.133*	0.052	0.134*	-0.186*	-0.002	-0.010	-0.240*	-0.240*	-0.248*	1.000	
	(0.154)	(0.658)	(0.036)	(0.023)	(0.022)	(0.000)	(0.945)	(0.039)	(0.005)	(0.283)	(0.568)	(0.000)	(0.539)	(0.872)	(0.498)	(0.165)	(0.000)	(0.073)	(0.000)	(0.000)	(0.942)	(0.733)	(0.000)	(0.000)	(0.000)		

(27) IND3	**-0.056**	**0.042**	**-0.010**	**-0.040**	**-0.039**	**0.055**	**0.090***	**0.060**	**0.096***	**-0.114***	**0.041**	**0.079***	**-0.018**	**-0.016**	**0.000**	**-0.113***	**-0.050**	**-0.003**	**-0.031**	**-0.063**	**0.000**	**-0.079***	**-0.256***	**-0.256***	**-0.265***	**-0.255***	**1.000**
	(0.054)	**(0.144)**	**(0.735)**	**(0.163)**	**(0.172)**	**(0.056)**	**(0.002)**	**(0.036)**	**(0.001)**	**(0.000)**	**(0.159)**	**(0.006)**	**(0.531)**	**(0.579)**	**(0.994)**	**(0.000)**	**(0.084)**	**(0.925)**	**(0.283)**	**(0.028)**	**(1.000)**	**(0.006)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	

****** p<0.01, ** p<0.05, * p<0.1***

Table 22: Summary Table of KAM studies

Date	Author(s)	Method and Sample	Dependent Variable	Independent Variable	Main results
2014	Christensen/Glover/ Wolfe	Experimental; 141 Alumni from a public business school	Investor behaviour	CAM	Investors who receive a CAM are more likely to change their investment decision
2014	Cade/ Hodge	Experimental; Alumni	Communication between management and auditors	Additional disclosures	Managers are less willing to share accounting choices with auditors
2015	Cordoş, George-Silviu; Fülöp, Melinda-Timea	Experimental; 47 comment letters	organisations, regulating bodies or individuals from within the EU	KAM	KAMs are an important concept and that their introduction and applicability will have a positive effect in the audit reporting process.
2016	Boolaky/ Quick	Experimental; 105 bank directors	Perceived financial statement quality	KAM, assurance level, materiality level	No significant effect of reporting KAM or materiality level in the auditor ‘s report
					But positive impact regarding the disclosure of assurance level
2016	Köhler/ Ratzinger-Sakel/ Theis	Experimental; 89 professional and 69 non-professional investors	Communicative value	KAM	Higher communicative value only for professional investors (no communicative value for non-professional investors)
2016	Brasel/ Doxey/ Grenier/ Reffett	Experimental; 528 participants from Amazon Mechanical Turk	Auditor liability	CAM	CAMs reduce jurors ‘auditor liability judgments under certain conditions (but only if undetected misstatements are, absent CAM disclosure, relatively difficult to foresee)
2016	Brown/ Majors/ Peecher	Experimental; 239 participants from Amazon Mechanical Turk and 116 law students	Auditor liability	CAM (only as a supple-mental manipulation)	No significant main effect of CAMs on liability judgments
2016	Gimbar/ Hansen/ Ozlanski	Experimental; 234 students	Auditor liability	CAM	Under precise standards, both related and unrelated CAMs increase auditor liability
					CAMs increase auditor liability by a lesser amount under imprecise standards than precise standards
2017	Asbahr/ Ruhnke	Experimental; 122 auditors	Auditor judgment	KAM	No significant effect on professional scepticism
2017	Carver/ Trinkle	Experimental; 150 non-professional investors	Readability, investors judgment, management credibility	CAM	CAMs have a negative impact on readability
					CAMs do not influence investor ‘s valuation judgments
					However, CAMs can reduce perceived management ‘s credibility
					Effect is reduced by offering a resolution paragraph
2018	Almulla/Bradbury	Archival; New Zealand; 2015, 2016, 2017; 132 firms	Audit effort, audit quality, client firm disclosures, investor reaction	KAM	Association with investor uncertainty
2018				JOA	Short-term effects: No significant market reaction

	Bédard/Gonthier-Besacier/Schatt	Archival; France, 2002–2011; 1,857–2,341 firm-year observations	Market reaction, audit quality, audit delay, audit costs		Long-term effects: association with lower agreement among investors
2018	Gutierrez/ Minutti-Meza/ Tatum/ Vulcheva	Archival; UK, 2011-2015, 2560/2652/2056 firm-year observations	Market reaction, audit fee, audit quality	Risk of material misstatement	No significant change regarding market reaction
2018	Lennox/ Schmidt/ Thompson	Archival; UK; 2013; 488 companies	Market reaction	Risk of material misstatement	Investors do not find disclosures informative (both „short window “and „long window“tests)
2018	Sirois/ Bédard/ Bera	Experimental; 98 students	Information value	KAM	Attention directing impact: users pay more attention to KAM-related disclosures
					Disclosure of several KAMs leads to reduced attention towards remaining parts of the financial statements
2018	Almulla/ Bradbury	Archival; New Zealand; 2015,2016,2017; 32 firms	Audit effort, audit quality, client firm disclosures, investor reaction	KAM	No incremental effect on audit fees, audit delay or absolute abnormal accruals
2018	Gutierrez/ Minutti-Meza/ Tatum/ Vulcheva	Archival; UK, 2011-2015, 2560/2652/2056 firm-year observations	Market reaction, audit fee, audit quality	Risk of material misstatement	No significant change regarding audit fee and audit quality
2018	Li/ Hay/ Lau	Archival; New Zealand; 2016; 182/242 firm-year observations	Audit quality, Audit fees	KAM	Improvement of audit quality accompanying with an increase in audit fees
2018	Ratzinger-Sakel/Theis	Experimental; 73 auditors	Auditor judgment performance	KAM	Less professional skepticism when KAM consideration is present
2018	Reid/ Carcello/ Li/ Neal	Archival; UK; 1088 (888, 884)/ 1304/ 1292 firm-year observations	Financial reporting quality, audit fee, audit delay	Risk of material misstatement	Significant improvement in financial reporting quality
					No effect on audit fee and audit delay Increased accounting quality by decreased accruals and beat analyst forecasts)
2018	Backof/ Bowlin/ oodson	Experimental; 63 undergraduate students	Auditor liability	CAM	When the audit report includes a related CAM disclosure, jurors perceive auditors as more negligent
					However, clarifying the concept of reasonable assurance mitigates this effect
2018	Kachelmeier/ Schmidt/ Valentine	Experimental; 70 attorneys, 50 financial analysts and150 MBA students	Auditor legal exposure	CAM	CAM disclosure decreases assessments of auditor responsibility when the misstatement is in the same area as the CAM
					“Disclaimer effect” is manifest in different ways for different groups
2018	Vinson/ Robertson/ Cockrell	Experimental; 168 participants from Amazon Mechanical Turk	Auditor liability	CAM	Higher auditor negligence when a CAM is removed
					Highest assessed negligence when auditor removes a CAM after reporting it for multiple years

2018	Bentley/ Lambert/ Wang	Experimental; 140 corporate managers	Manager ‘s decision making	CAM	Given a Standard CAM, managers were less likely to hedge (a risk-decreasing transaction), but more likely to speculate (a risk-increasing transaction)
					A Disclaimer CAM mitigates the impact of CAM on speculation
2018	Klueber/ Gold/ Pott	Experimental; 54 participants	Manager ‘s decision making	KAM	Reduced earnings management if KAM section includes firm-specific information
2019	Bédard/ Gonthier-Besacier/ Schatt	Archival; France, 2002-2011; 1,857-2,341 firm-year observations	Market reaction, audit quality, audit delay, audit costs	JOA	Short-term effects: positive association with audit lag and audit fees
					Long-term effects: association with lower agreement among investors and reporting quality
2020	Anna Gold, Melina Heilmann, Christiane Pott and Johanna Rematzki	6,000 financial statement preparers	Financial reporting behaviour	KAM	findings show that managers' tendency to make an aggressive financial reporting decision is reduced in the pres- ence of KAMs (compared to the absence of KAMs).
2023	Smith	UK, 2012–2014, 700 firm-year observations	Communication value (audit report readability and tone). Earnings forecast dispersion	RMM	Audit reports are easier to read and better reflect the risk-related nature of financial statement audits and earnings forecast dispersion decreases after the regulation.

Table 23: Sample of Firms by Industry

Industry	UK SIC Code 2007	Industry Assigned Number	Final Sample
AGRICULTURE, FORESTRY AND FISHING?	1110 - 3220	1	1
MINING AND QUARRYING	5101 - 9900	2	17
MANUFACTURING	10110 - 33200	3	39
ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY	35110 - 35300	4	3
WATER SUPPLY; SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES	36000 - 39000	5	3
CONSTRUCTION	41100 - 43999	6	21
WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES	45111 - 47990	7	28
TRANSPORTATION AND STORAGE	49100 - 53202	8	13
ACCOMMODATION AND FOOD SERVICE ACTIVITIES	55100 - 56302	9	10
INFORMATION AND COMMUNICATION	58110 - 63990	10	18
FINANCIAL AND INSURANCE ACTIVITIES	64110 - 66300	11	Excluded
REAL ESTATE ACTIVITIES	68100 - 68320	12	8
PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	69101 - 75000	13	21
ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	77110 - 82990	14	8
PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY	84110 - 84300	15	6
EDUCATION	85100 - 85600	16	0
HUMAN HEALTH AND SOCIAL WORK ACTIVITIES	86101 - 88990	17	0
ARTS, ENTERTAINMENT AND RECREATION	90010 - 93290	18	5
OTHER SERVICE ACTIVITIES	94110 - 96090	19	0
ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS; UNDIFFERENTIATED GOODS- AND SERVICES-PRODUCING ACTIVITIES OF HOUSEHOLDS FOR OWN USE	97000 - 98200	20	0
ACTIVITIES OF EXTRATERRITORIAL ORGANISATIONS AND BODIES	99000 - 99999	21	0
Total			201

Note: This table reports the total final sample of companies and their distribution using SIC 2007 (UK SIC, 2007) according to their activities during 2013- 2018 period.

Tables 24: Descriptive Statistics by Groups

Descriptive Statistics FTSE350

Variable	Obs	Mean	Std. Dev.	Min	Max
AEM MJM	1206	-.0085	.039	-.521	.134
REM PCA	1206	-.009	1	-5.17	6.653
AlKAM	1206	2.032	1.065	0	5
ELKAM	1206	1.699	1.226	0	7
NB_KAM	1206	3.763	1.946	0	40
IBOD	1206	58.351	14.964	0	100
BOEX	1206	57.312	17.026	0	100
BOA	1206	96.853	5.959	.682	100
INDAC	1206	50.891	19.734	0	100
AUCEX	1206	69.829	13.082	0	100
AUCA	1206	96.263	5.81	0	100
EXAIND	1206	.978	.148	0	1
EXAEX	1206	.657	2.842	0	97.755
EXAA	1206	25634.69	308904.88	0	7328003.7
SWITCH	1206	.081	.316	0	6
SIZE	1206	14537715	40070633	12.31	4.113e+08
PROF	1206	8.21	17.445	-53.54	236.78
LEV	1206	.258	.151	0	1.024
GROW	1206	5.863	38.824	-116.095	895.232
LIQ	1206	1.597	1.324	.078	17.135
DUM MAN	1206	.5	.5	0	1
DUM FTSE	1206	.448	.497	0	1
IND1	1206	.194	.396	0	1
IND2	1206	.194	.396	0	1
IND3	1206	.205	.404	0	1
IND4	1206	.193	.395	0	1
IND5	1206	.214	.41	0	1

Descriptive Statistics FTSE 100

Variable	Obs	Mean	Std. Dev.	Min	Max
AEM MJM	540	-.0083	.032	-.297	.071
REM PCA	540	-.089	1.183	-5.17	6.653
AlKAM	540	2.246	1.185	0	5
ELKAM	540	1.824	1.29	0	7
NB_KAM	540	4.07	1.789	0	10
IBOD	540	61.487	14.1	4.854	92.86
BOEX	540	56.501	16.97	0	100
BOA	540	96.956	3.929	75	100
INDAC	540	51.274	19.752	.638	100
AUCEX	540	71.306	9.25	5.34	75.951
AUCA	540	96.401	4.835	56.44	100
EXAIND	540	.998	.043	0	1
EXAEX	540	.567	.496	0	1
EXAA	540	44472.418	436438.95	46.824	7328003.7
SWITCH	540	.087	.282	0	1
SIZE	540	28070582	56897823	353328.18	4.113e+08
PROF	540	6.078	7.553	-53.54	46.64
LEV	540	.286	.138	.019	.94
GROW	540	2.982	8.869	-116.095	45.384
LIQ	540	1.469	1.332	.181	12.306
DUM MAN	540	.502	.5	0	1
IND1	540	.189	.392	0	1
IND2	540	.2	.4	0	1
IND3	540	.244	.43	0	1
IND4	540	.189	.392	0	1

IND5	540	.189	.392	0	1

Descriptive Statistics FTSE 250

Variable	Obs	Mean	Std. Dev.	Min	Max
AEM MJM	666	-.0088	.044	-.521	.134
REM PCA	666	.072	.816	-3.018	4.703
AlKAM	666	1.859	.92	0	5
ELKAM	666	1.596	1.165	0	6
NB_KAM	666	3.455	1.46	0	9
IBOD	666	55.749	15.155	0	100
BOEX	666	57.948	17.016	0	100
BOA	666	96.911	6.157	13	100
INDAC	666	50.474	19.806	0	100
AUCEX	666	68.589	15.365	0	75.951
AUCA	666	96.301	5.319	56.47	100
EXAIND	666	.959	.197	0	1
EXAEX	666	.584	.493	0	1
EXAA	666	5486.344	47178.601	0	683348.73
SWITCH	666	.068	.251	0	1
SIZE	666	3569994.4	4027062.2	63474.256	22018394
PROF	666	9.957	22.325	-43.2	236.78
LEV	666	.233	.155	0	.939
GROW	666	8.199	51.53	-9.059	895.232
LIQ	666	1.701	1.309	.078	17.135
DUM MAN	666	.5	.5	0	1
IND1	666	.198	.399	0	1
IND2	666	.189	.392	0	1
IND3	666	.171	.377	0	1
IND4	666	.198	.399	0	1
IND5	666	.243	.429	0	1

Tables 25: Quantile Regression Results Accrual Earning Management (Modified Jones Model) and KAM Quantity with Significance Sign.

Regression Results Quantile 0,05

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.005	.004	-1.23	.218	-.013	.003	
IBOD	0	0	-0.57	.567	-.001	.001	
BOEX	0	0	0.10	.918	-.001	.001	
BOA	0	.001	0.01	.993	-.002	.002	
INDAC	0	0	0.06	.952	-.001	.001	
AUCEX	0	0	0.45	.651	-.001	.001	
AUCA	0	.001	0.14	.89	-.002	.003	
EXAIND	.118	.043	2.77	.006	.035	.202	***
EXAEX	.001	.003	0.25	.802	-.006	.007	
EXAA	0	0	0.29	.775	0	0	
SWITCH	-.002	.022	-0.09	.931	-.046	.042	
SIZE	0	0	-0.36	.722	0	0	
PROF	.001	.001	1.81	.071	0	.002	*
LEV	-.024	.045	-0.53	.596	-.113	.065	
GROW	0	0	-1.09	.274	-.001	0	
LIQ	-.003	.005	-0.57	.567	-.013	.007	
DUM_MAN	-.001	.012	-0.11	.911	-.025	.022	
DUM_FTSE	.017	.013	1.28	.202	-.009	.043	
IND1	.021	.019	1.08	.279	-.017	.058	
IND2	.026	.02	1.27	.204	-.014	.066	
IND3	.028	.019	1.46	.145	-.01	.065	
IND4	-.032	.02	-1.60	.109	-.07	.007	
o	0	.	.	.	.	.	
Constant	-.19	.151	-1.26	.209	-.487	.107	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,10

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.004	.002	-2.06	.04	-.007	0	**
IBOD	0	0	-0.64	.524	-.001	0	
BOEX	0	0	-0.04	.967	0	0	
BOA	0	.001	-0.07	.945	-.001	.001	
INDAC	0	0	0.37	.713	0	0	
AUCEX	0	0	1.07	.286	0	.001	
AUCA	0	.001	0.95	.344	-.001	.002	
EXAIND	.063	.018	3.54	0	.028	.098	***
EXAEX	.001	.001	0.41	.679	-.002	.003	
EXAA	0	0	0.53	.597	0	0	
SWITCH	-.002	.009	-0.25	.8	-.021	.016	
SIZE	0	0	0.23	.819	0	0	
PROF	.001	0	4.30	0	.001	.001	***
LEV	-.04	.019	-2.08	.038	-.077	-.002	**
GROW	0	0	-2.64	.008	0	0	***
LIQ	-.001	.002	-0.34	.73	-.005	.003	
DUM_MAN	0	.005	0.06	.949	-.01	.01	
DUM_FTSE	.008	.006	1.37	.171	-.003	.018	
IND1	.019	.008	2.34	.019	.003	.034	**
IND2	.031	.008	3.68	0	.015	.048	***
IND3	.03	.008	3.82	0	.015	.046	***
IND4	.007	.008	0.88	.377	-.009	.023	
o	0	.	.	.	.	.	
Constant	-.161	.063	-2.55	.011	-.286	-.037	**

Mean dependent var	-0.009	SD dependent var	0.039

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,15

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.003	.001	-2.45	.014	-.006	-.001	**
IBOD	0	0	-0.74	.46	0	0	
BOEX	0	0	-0.06	.954	0	0	
BOA	0	0	0.58	.563	-.001	.001	
INDAC	0	0	0.25	.806	0	0	
AUCEX	0	0	-0.04	.971	0	0	
AUCA	0	0	-0.40	.687	-.001	.001	
EXAIND	.016	.013	1.19	.236	-.01	.042	
EXAEX	0	.001	-0.31	.755	-.002	.002	
EXAA	0	0	0.62	.537	0	0	
SWITCH	.002	.007	0.30	.763	-.012	.016	
SIZE	0	0	0.38	.707	0	0	
PROF	.001	0	5.46	0	.001	.001	***
LEV	-.026	.014	-1.82	.069	-.054	.002	*
GROW	0	0	-3.49	0	0	0	***
LIQ	-.001	.002	-0.60	.551	-.004	.002	
DUM_MAN	.001	.004	0.32	.747	-.006	.009	
DUM_FTSE	.005	.004	1.33	.185	-.003	.014	
IND1	0	.006	-0.01	.993	-.012	.012	
IND2	.017	.006	2.70	.007	.005	.03	***
IND3	.01	.006	1.70	.09	-.002	.022	*
IND4	-.012	.006	-1.88	.06	-.024	0	*
o	0	.	.	.	.	.	
Constant	-.039	.047	-0.83	.406	-.132	.053	

Mean dependent var	-0.009	SD dependent var	0.039

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,20

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.003	.001	-4.19	0	-.005	-.002	***
IBOD	0	0	-1.51	.13	0	0	
BOEX	0	0	-0.53	.597	0	0	
BOA	0	0	-0.05	.962	0	0	
INDAC	0	0	0.25	.801	0	0	
AUCEX	0	0	-0.51	.607	0	0	
AUCA	0	0	-0.36	.721	-.001	0	
EXAIND	.019	.009	2.23	.026	.002	.036	**
EXAEX	0	.001	-0.60	.549	-.002	.001	
EXAA	0	0	0.82	.411	0	0	
SWITCH	.002	.005	0.48	.631	-.007	.011	
SIZE	0	0	1.41	.16	0	0	
PROF	.001	0	6.12	0	0	.001	***
LEV	-.024	.009	-2.63	.009	-.042	-.006	***
GROW	0	0	-1.32	.187	0	0	
LIQ	-.001	.001	-1.02	.309	-.003	.001	
DUM_MAN	.001	.002	0.60	.548	-.003	.006	
DUM_FTSE	.003	.003	1.12	.261	-.002	.008	
IND1	-.001	.004	-0.15	.88	-.008	.007	
IND2	.017	.004	4.21	0	.009	.025	***
IND3	.01	.004	2.62	.009	.003	.018	***
IND4	-.01	.004	-2.53	.011	-.018	-.002	**
o	0	.	.	.	.	.	
Constant	-.011	.031	-0.37	.711	-.071	.049	

Mean dependent var	-0.009	SD dependent var	0.039

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,25

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.003	.001	-4.24	0	-.004	-.002	***
IBOD	0	0	-0.83	.408	0	0	
BOEX	0	0	-0.73	.465	0	0	
BOA	0	0	-0.17	.865	0	0	
INDAC	0	0	0.53	.596	0	0	
AUCEX	0	0	-1.07	.283	0	0	
AUCA	0	0	-0.78	.436	-.001	0	
EXAIND	.012	.008	1.56	.12	-.003	.027	
EXAEX	-.001	.001	-1.12	.263	-.002	0	
EXAA	0	0	0.74	.457	0	0	
SWITCH	.002	.004	0.41	.68	-.006	.009	
SIZE	0	0	1.32	.188	0	0	
PROF	.001	0	6.81	0	0	.001	***
LEV	-.024	.008	-2.99	.003	-.04	-.008	***
GROW	0	0	-1.76	.078	0	0	*
LIQ	-.001	.001	-1.25	.21	-.003	.001	
DUM_MAN	.002	.002	0.80	.426	-.002	.006	
DUM_FTSE	0	.002	0.19	.851	-.004	.005	
IND1	-.002	.003	-0.72	.472	-.009	.004	
IND2	.013	.004	3.73	0	.006	.021	***
IND3	.009	.003	2.59	.01	.002	.015	***
IND4	-.01	.004	-2.92	.004	-.017	-.003	***
o	0	.	.	.	.	.	
Constant	.01	.027	0.39	.699	-.042	.063	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,30

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.003	.001	-4.23	0	-.004	-.001	***
IBOD	0	0	-0.89	.375	0	0	
BOEX	0	0	-1.04	.299	0	0	
BOA	0	0	0.14	.889	0	0	
INDAC	0	0	1.20	.232	0	0	
AUCEX	0	0	-0.94	.349	0	0	
AUCA	0	0	-0.55	.581	-.001	0	
EXAIND	.013	.007	1.85	.065	-.001	.026	*
EXAEX	-.001	.001	-1.29	.199	-.002	0	
EXAA	0	0	0.63	.527	0	0	
SWITCH	.001	.004	0.18	.86	-.006	.008	
SIZE	0	0	1.42	.155	0	0	
PROF	.001	0	7.08	0	0	.001	***
LEV	-.016	.007	-2.14	.033	-.03	-.001	**
GROW	0	0	-2.26	.024	0	0	**
LIQ	-.001	.001	-1.34	.181	-.003	.001	
DUM_MAN	.001	.002	0.63	.526	-.003	.005	
DUM_FTSE	-.001	.002	-0.34	.732	-.005	.003	
IND1	0	.003	-0.08	.936	-.006	.006	
IND2	.014	.003	4.29	0	.008	.02	***
IND3	.009	.003	2.91	.004	.003	.015	***
IND4	-.007	.003	-2.17	.03	-.013	-.001	**
o	0	.	.	.	.	.	
Constant	-.004	.024	-0.17	.868	-.052	.044	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,35

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.003	.001	-4.37	0	-.004	-.001	***
IBOD	0	0	-0.77	.44	0	0	
BOEX	0	0	-0.99	.321	0	0	
BOA	0	0	0.32	.747	0	0	
INDAC	0	0	1.57	.116	0	0	
AUCEX	0	0	-0.63	.531	0	0	
AUCA	0	0	-0.64	.521	0	0	
EXAIND	.016	.006	2.61	.009	.004	.029	***
EXAEX	-.001	0	-1.46	.144	-.002	0	
EXAA	0	0	0.63	.528	0	0	
SWITCH	0	.003	-0.05	.962	-.007	.006	
SIZE	0	0	1.43	.154	0	0	
PROF	.001	0	6.73	0	0	.001	***
LEV	-.015	.007	-2.24	.025	-.028	-.002	**
GROW	0	0	-1.05	.294	0	0	
LIQ	-.001	.001	-1.50	.134	-.003	0	
DUM_MAN	0	.002	0.06	.956	-.003	.004	
DUM_FTSE	-.001	.002	-0.65	.518	-.005	.003	
IND1	-.002	.003	-0.83	.407	-.008	.003	
IND2	.011	.003	3.54	0	.005	.016	***
IND3	.006	.003	2.10	.036	0	.011	**
IND4	-.007	.003	-2.33	.02	-.012	-.001	**
o	0	.	.	.	.	.	
Constant	-.008	.022	-0.38	.707	-.052	.035	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,40

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.002	.001	-4.08	0	-.003	-.001	***
IBOD	0	0	-0.49	.623	0	0	
BOEX	0	0	-0.73	.466	0	0	
BOA	0	0	0.37	.711	0	0	
INDAC	0	0	1.60	.11	0	0	
AUCEX	0	0	-0.66	.512	0	0	
AUCA	0	0	-0.59	.552	0	0	
EXAIND	.014	.006	2.44	.015	.003	.025	**
EXAEX	-.001	0	-1.79	.073	-.002	0	*
EXAA	0	0	0.60	.549	0	0	
SWITCH	-.001	.003	-0.35	.726	-.007	.005	
SIZE	0	0	1.35	.176	0	0	
PROF	.001	0	7.03	0	0	.001	***
LEV	-.016	.006	-2.60	.009	-.028	-.004	***
GROW	0	0	-0.99	.324	0	0	
LIQ	-.001	.001	-1.47	.141	-.002	0	
DUM_MAN	-.001	.002	-0.54	.586	-.004	.002	
DUM_FTSE	-.001	.002	-0.56	.576	-.005	.003	
IND1	-.001	.003	-0.24	.812	-.006	.004	
IND2	.009	.003	3.43	.001	.004	.015	***
IND3	.006	.003	2.47	.014	.001	.011	**
IND4	-.004	.003	-1.57	.116	-.009	.001	
o	0	.	.	.	.	.	
Constant	-.009	.02	-0.43	.668	-.049	.031	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,45

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.002	.001	-3.38	.001	-.003	-.001	***
IBOD	0	0	-0.68	.5	0	0	
BOEX	0	0	-0.34	.734	0	0	
BOA	0	0	0.72	.472	0	0	
INDAC	0	0	0.91	.364	0	0	
AUCEX	0	0	-0.66	.508	0	0	
AUCA	0	0	-0.34	.731	0	0	
EXAIND	.006	.005	1.12	.263	-.005	.017	
EXAEX	-.001	0	-2.21	.027	-.002	0	**
EXAA	0	0	0.65	.515	0	0	
SWITCH	0	.003	-0.14	.891	-.006	.005	
SIZE	0	0	1.26	.207	0	0	
PROF	0	0	6.70	0	0	.001	***
LEV	-.017	.006	-2.91	.004	-.028	-.006	***
GROW	0	0	-0.29	.768	0	0	
LIQ	-.001	.001	-1.28	.201	-.002	0	
DUM_MAN	0	.002	-0.03	.98	-.003	.003	
DUM_FTSE	0	.002	-0.28	.777	-.004	.003	
IND1	-.002	.002	-0.73	.467	-.007	.003	
IND2	.007	.003	2.59	.01	.002	.012	***
IND3	.004	.002	1.61	.108	-.001	.009	
IND4	-.006	.003	-2.37	.018	-.011	-.001	**
o	0	.	.	.	.	.	
Constant	-.007	.019	-0.36	.72	-.045	.031	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,50

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.001	.001	-2.79	.005	-.002	0	***
IBOD	0	0	-0.66	.511	0	0	
BOEX	0	0	-0.48	.632	0	0	
BOA	0	0	0.73	.463	0	0	
INDAC	0	0	0.58	.559	0	0	
AUCEX	0	0	-0.30	.763	0	0	
AUCA	0	0	0.08	.94	0	0	
EXAIND	.007	.005	1.20	.23	-.004	.017	
EXAEX	-.001	0	-2.38	.018	-.002	0	**
EXAA	0	0	0.62	.534	0	0	
SWITCH	0	.003	-0.16	.872	-.006	.005	
SIZE	0	0	1.88	.06	0	0	*
PROF	0	0	5.85	0	0	.001	***
LEV	-.017	.006	-2.90	.004	-.028	-.005	***
GROW	0	0	0.75	.451	0	0	
LIQ	0	.001	-0.73	.468	-.002	.001	
DUM_MAN	-.001	.002	-0.37	.71	-.004	.002	
DUM_FTSE	-.001	.002	-0.50	.615	-.004	.002	
IND1	-.003	.002	-1.07	.284	-.007	.002	
IND2	.005	.003	2.03	.043	0	.01	**
IND3	.003	.002	1.43	.153	-.001	.008	
IND4	-.003	.003	-1.13	.261	-.008	.002	
o	0	.	.	.	.	.	
Constant	-.013	.019	-0.68	.495	-.051	.025	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,55

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.001	.001	-2.42	.016	-.002	0	**
IBOD	0	0	-0.71	.478	0	0	
BOEX	0	0	-0.10	.92	0	0	
BOA	0	0	0.91	.361	0	0	
INDAC	0	0	0.35	.724	0	0	
AUCEX	0	0	-0.35	.723	0	0	
AUCA	0	0	0.27	.789	0	0	
EXAIND	.002	.006	0.28	.78	-.009	.013	
EXAEX	-.001	0	-2.35	.019	-.002	0	**
EXAA	0	0	0.89	.372	0	0	
SWITCH	0	.003	-0.16	.87	-.006	.005	
SIZE	0	0	2.14	.032	0	0	**
PROF	0	0	5.05	0	0	.001	***
LEV	-.019	.006	-3.19	.001	-.031	-.007	***
GROW	0	0	0.96	.339	0	0	
LIQ	0	.001	-0.53	.597	-.002	.001	
DUM_MAN	-.001	.002	-0.72	.474	-.004	.002	
DUM_FTSE	0	.002	-0.21	.83	-.004	.003	
IND1	-.001	.003	-0.53	.593	-.006	.004	
IND2	.004	.003	1.51	.131	-.001	.009	
IND3	.003	.003	1.33	.183	-.002	.008	
IND4	.001	.003	0.37	.708	-.004	.006	
o	0	.	.	.	.	.	
Constant	-.013	.02	-0.63	.529	-.052	.027	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,60

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.001	.001	-1.82	.069	-.002	0	*
IBOD	0	0	-0.86	.388	0	0	
BOEX	0	0	-0.56	.577	0	0	
BOA	0	0	1.01	.313	0	0	
INDAC	0	0	-0.21	.837	0	0	
AUCEX	0	0	0.06	.951	0	0	
AUCA	0	0	0.10	.916	0	0	
EXAIND	.007	.006	1.12	.262	-.005	.018	
EXAEX	-.001	0	-2.35	.019	-.002	0	**
EXAA	0	0	0.74	.458	0	0	
SWITCH	-.001	.003	-0.44	.659	-.007	.005	
SIZE	0	0	3.28	.001	0	0	***
PROF	0	0	5.06	0	0	.001	***
LEV	-.02	.006	-3.20	.001	-.033	-.008	***
GROW	0	0	0.50	.616	0	0	
LIQ	-.001	.001	-0.96	.339	-.002	.001	
DUM_MAN	-.001	.002	-0.90	.371	-.005	.002	
DUM_FTSE	-.001	.002	-0.42	.671	-.004	.003	
IND1	-.002	.003	-0.82	.414	-.007	.003	
IND2	.004	.003	1.41	.16	-.002	.009	
IND3	.004	.003	1.64	.102	-.001	.009	
IND4	.007	.003	2.72	.007	.002	.013	***
o	0	.	.	.	.	.	
Constant	-.014	.021	-0.69	.493	-.056	.027	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,65

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.001	.001	-1.37	.171	-.002	0	
IBOD	0	0	-1.07	.284	0	0	
BOEX	0	0	-1.01	.314	0	0	
BOA	0	0	1.15	.249	0	0	
INDAC	0	0	0.08	.938	0	0	
AUCEX	0	0	0.44	.66	0	0	
AUCA	0	0	-0.84	.4	0	0	
EXAIND	.011	.006	1.93	.054	0	.022	*
EXAEX	-.001	0	-2.95	.003	-.002	0	***
EXAA	0	0	0.65	.518	0	0	
SWITCH	-.002	.003	-0.65	.518	-.008	.004	
SIZE	0	0	3.59	0	0	0	***
PROF	0	0	5.24	0	0	.001	***
LEV	-.024	.006	-4.10	0	-.036	-.013	***
GROW	0	0	0.50	.62	0	0	
LIQ	-.001	.001	-1.22	.224	-.002	.001	
DUM_MAN	-.002	.002	-1.04	.3	-.005	.001	
DUM_FTSE	-.001	.002	-0.71	.477	-.005	.002	
IND1	-.002	.002	-0.91	.365	-.007	.003	
IND2	.004	.003	1.34	.18	-.002	.009	
IND3	.004	.002	1.53	.125	-.001	.009	
IND4	.012	.003	4.47	0	.006	.017	***
o	0	.	.	.	.	.	
Constant	-.002	.02	-0.12	.903	-.041	.036	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,70

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.001	.001	-1.08	.282	-.002	.001	
IBOD	0	0	-0.66	.512	0	0	
BOEX	0	0	-0.64	.519	0	0	
BOA	0	0	1.28	.202	0	.001	
INDAC	0	0	0.14	.886	0	0	
AUCEX	0	0	0.88	.38	0	0	
AUCA	0	0	-0.78	.433	-.001	0	
EXAIND	.011	.006	1.72	.085	-.002	.023	*
EXAEX	-.001	0	-2.54	.011	-.002	0	**
EXAA	0	0	0.39	.696	0	0	
SWITCH	-.002	.003	-0.73	.467	-.009	.004	
SIZE	0	0	2.93	.003	0	0	***
PROF	0	0	4.32	0	0	.001	***
LEV	-.029	.007	-4.26	0	-.042	-.015	***
GROW	0	0	0.54	.592	0	0	
LIQ	-.001	.001	-1.36	.175	-.003	0	
DUM_MAN	-.001	.002	-0.57	.569	-.004	.002	
DUM_FTSE	-.001	.002	-0.71	.48	-.005	.002	
IND1	0	.003	-0.11	.913	-.006	.005	
IND2	.004	.003	1.31	.189	-.002	.01	
IND3	.005	.003	1.94	.053	0	.011	*
IND4	.016	.003	5.44	0	.01	.022	***
o	0	.	.	.	.	.	
Constant	-.008	.022	-0.36	.721	-.052	.036	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,75

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig

NB_KAM	-.001	.001	-1.22	.222	-.002	.001	
IBOD	0	0	-0.46	.644	0	0	
BOEX	0	0	-0.90	.369	0	0	
BOA	0	0	1.36	.173	0	.001	
INDAC	0	0	-0.05	.964	0	0	
AUCEX	0	0	0.78	.434	0	0	
AUCA	0	0	-0.87	.386	-.001	0	
EXAIND	.012	.007	1.72	.085	-.002	.027	*
EXAEX	-.001	.001	-1.86	.063	-.002	0	*
EXAA	0	0	0.05	.963	0	0	
SWITCH	-.004	.004	-0.97	.334	-.011	.004	
SIZE	0	0	4.22	0	0	0	***
PROF	0	0	3.24	.001	0	0	***
LEV	-.035	.008	-4.54	0	-.05	-.02	***
GROW	0	0	0.97	.334	0	0	
LIQ	-.001	.001	-1.43	.153	-.003	0	
DUM_MAN	-.001	.002	-0.38	.707	-.005	.003	
DUM_FTSE	-.001	.002	-0.25	.804	-.005	.004	
IND1	0	.003	-0.06	.949	-.007	.006	
IND2	.003	.003	0.86	.388	-.004	.01	
IND3	.008	.003	2.54	.011	.002	.015	**
IND4	.017	.003	4.96	0	.01	.023	***
o	0	.	.	.	.	.	
Constant	-.005	.026	-0.18	.856	-.055	.046	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,80

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.001	.001	-1.65	.099	-.002	0	*
IBOD	0	0	0.02	.986	0	0	
BOEX	0	0	-0.57	.572	0	0	
BOA	0	0	0.69	.489	0	.001	
INDAC	0	0	-0.74	.459	0	0	
AUCEX	0	0	0.35	.724	0	0	
AUCA	0	0	-1.37	.17	-.001	0	
EXAIND	.019	.007	2.92	.004	.006	.032	***
EXAEX	-.001	.001	-2.23	.026	-.002	0	**
EXAA	0	0	-0.19	.851	0	0	
SWITCH	-.004	.003	-1.05	.295	-.011	.003	
SIZE	0	0	4.09	0	0	0	***
PROF	0	0	2.62	.009	0	0	***
LEV	-.048	.007	-6.72	0	-.062	-.034	***
GROW	0	0	1.89	.059	0	0	*
LIQ	-.002	.001	-2.57	.01	-.004	0	**
DUM_MAN	0	.002	0.16	.872	-.003	.004	
DUM_FTSE	-.002	.002	-1.00	.318	-.006	.002	
IND1	.001	.003	0.22	.825	-.005	.006	
IND2	.003	.003	0.81	.417	-.004	.009	
IND3	.011	.003	3.63	0	.005	.017	***
IND4	.019	.003	6.17	0	.013	.025	***
o	0	.	.	.	.	.	
Constant	.022	.024	0.92	.359	-.025	.068	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,85

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.001	.001	-1.73	.084	-.002	0	*

IBOD	0	0	-0.01	.994	0	0	
BOEX	0	0	-1.10	.269	0	0	
BOA	0	0	-0.16	.871	0	0	
INDAC	0	0	-1.54	.124	0	0	
AUCEX	0	0	-0.58	.565	0	0	
AUCA	0	0	-0.70	.481	0	0	
EXAIND	.022	.006	3.53	0	.01	.034	***
EXAEX	-.001	0	-2.76	.006	-.002	0	***
EXAA	0	0	-0.27	.787	0	0	
SWITCH	0	.003	-0.08	.94	-.007	.006	
SIZE	0	0	3.95	0	0	0	***
PROF	0	0	3.28	.001	0	0	***
LEV	-.054	.007	-8.15	0	-.067	-.041	***
GROW	0	0	1.70	.09	0	0	*
LIQ	-.002	.001	-3.06	.002	-.004	-.001	***
DUM_MAN	.001	.002	0.53	.598	-.002	.004	
DUM_FTSE	-.002	.002	-0.85	.397	-.005	.002	
IND1	.002	.003	0.82	.41	-.003	.008	
IND2	.003	.003	1.04	.3	-.003	.009	
IND3	.011	.003	4.01	0	.006	.016	***
IND4	.019	.003	6.72	0	.014	.025	***
o	0	.	.	.	.	.	
Constant	.033	.022	1.52	.129	-.01	.076	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,90

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.001	.001	-1.89	.059	-.003	0	*
IBOD	0	0	1.15	.25	0	0	
BOEX	0	0	-1.49	.136	0	0	
BOA	0	0	0.32	.752	0	0	
INDAC	0	0	-1.69	.092	0	0	*
AUCEX	0	0	-0.65	.514	0	0	
AUCA	0	0	-0.17	.863	0	0	
EXAIND	.025	.008	3.33	.001	.01	.04	***
EXAEX	-.001	.001	-1.59	.112	-.002	0	
EXAA	0	0	-0.33	.742	0	0	
SWITCH	-.003	.004	-0.71	.476	-.011	.005	
SIZE	0	0	4.82	0	0	0	***
PROF	0	0	2.55	.011	0	0	**
LEV	-.049	.008	-6.13	0	-.065	-.033	***
GROW	0	0	1.69	.092	0	0	*
LIQ	-.002	.001	-2.25	.025	-.004	0	**
DUM_MAN	0	.002	-0.16	.875	-.004	.004	
DUM_FTSE	-.004	.002	-1.74	.082	-.009	.001	*
IND1	0	.003	-0.14	.892	-.007	.006	
IND2	-.002	.004	-0.59	.557	-.009	.005	
IND3	.007	.003	2.09	.037	0	.014	**
IND4	.019	.003	5.38	0	.012	.025	***
o	0	.	.	.	.	.	
Constant	.019	.027	0.73	.466	-.033	.072	

Mean dependent var	-0.009	SD dependent var	0.039

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,95

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.003	.001	-3.41	.001	-.005	-.001	***

IBOD	0	0	1.14	.256	0	0	
BOEX	0	0	-2.32	.02	0	0	**
BOA	0	0	-0.07	.944	-.001	.001	
INDAC	0	0	-0.89	.376	0	0	
AUCEX	0	0	-0.55	.581	0	0	
AUCA	0	0	0.66	.507	0	.001	
EXAIND	.003	.01	0.26	.793	-.018	.023	
EXAEX	0	.001	-0.13	.895	-.002	.001	
EXAA	0	0	-0.45	.655	0	0	
SWITCH	-.004	.005	-0.68	.494	-.014	.007	
SIZE	0	0	3.48	.001	0	0	***
PROF	0	0	1.52	.13	0	0	
LEV	-.039	.011	-3.55	0	-.061	-.018	***
GROW	0	0	1.35	.176	0	0	
LIQ	-.002	.001	-1.68	.093	-.005	0	*
DUM_MAN	-.002	.003	-0.78	.434	-.008	.003	
DUM_FTSE	-.009	.003	-2.81	.005	-.015	-.003	***
IND1	-.012	.005	-2.49	.013	-.021	-.002	**
IND2	-.01	.005	-1.92	.055	-.019	0	*
IND3	.004	.005	0.81	.418	-.005	.013	
IND4	.013	.005	2.80	.005	.004	.023	***
o	0	.	.	.	.	.	
Constant	.052	.037	1.41	.16	-.021	.124	

Mean dependent var	-0.009	SD dependent var	0.039

*** p<.01, ** p<.05, * p<.1

Table 26: Accrual Earning Management (Modified Jones Model) and KAM Quality with Significance Sign

Regression Results Quantile 0,05

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.003	.005	-0.53	.595	-.013	.008	
ELKAM	-.008	.005	-1.58	.114	-.018	.002	
IBOD	0	0	-0.57	.567	-.001	.001	
BOEX	0	0	0.24	.812	-.001	.001	
BOA	0	.001	0.20	.843	-.002	.002	
INDAC	0	0	-0.08	.939	-.001	.001	
AUCEX	0	0	0.46	.648	-.001	.001	
AUCA	0	.001	0.08	.937	-.002	.002	
EXAIND	.115	.039	2.94	.003	.038	.191	***
EXAEX	-.001	.003	-0.38	.703	-.006	.004	
EXAA	0	0	0.33	.74	0	0	
SWITCH	-.002	.02	-0.12	.908	-.043	.038	
SIZE	0	0	0.21	.832	0	0	
PROF	.001	.001	1.90	.058	0	.002	*
LEV	-.015	.042	-0.36	.721	-.096	.067	
GROW	0	0	-1.22	.222	-.001	0	
LIQ	-.002	.005	-0.37	.709	-.011	.007	
DUM_MAN	0	.011	0.04	.97	-.021	.022	
DUM_FTSE	.016	.012	1.30	.194	-.008	.04	
IND1	.016	.018	0.92	.359	-.018	.051	
IND2	.021	.019	1.16	.248	-.015	.058	
IND3	.017	.017	0.99	.321	-.017	.051	
IND4	-.032	.018	-1.79	.073	-.068	.003	*
o	0	.	.	.	.	.	
Constant	-.198	.139	-1.43	.152	-.47	.073	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,10

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.002	.003	-0.68	.498	-.007	.003	
ELKAM	-.004	.002	-1.78	.075	-.009	0	*
IBOD	0	0	-0.44	.657	-.001	0	
BOEX	0	0	0.04	.965	0	0	
BOA	0	.001	0.14	.892	-.001	.001	
INDAC	0	0	0.11	.91	0	0	
AUCEX	0	0	1.07	.285	0	.001	
AUCA	0	.001	0.85	.397	-.001	.002	
EXAIND	.066	.019	3.42	.001	.028	.104	***
EXAEX	-.001	.001	-0.50	.616	-.003	.002	
EXAA	0	0	0.49	.626	0	0	
SWITCH	-.003	.01	-0.32	.75	-.023	.017	
SIZE	0	0	0.40	.689	0	0	
PROF	.001	0	4.28	0	.001	.002	***
LEV	-.039	.021	-1.88	.061	-.079	.002	*
GROW	0	0	-3.22	.001	-.001	0	***
LIQ	-.001	.002	-0.58	.563	-.006	.003	
DUM_MAN	.002	.005	0.30	.761	-.009	.012	
DUM_FTSE	.006	.006	0.98	.328	-.006	.018	
IND1	.018	.009	2.12	.034	.001	.036	**
IND2	.032	.009	3.45	.001	.014	.05	***
IND3	.029	.009	3.33	.001	.012	.046	***
IND4	.007	.009	0.83	.405	-.01	.025	
o	0	.	.	.	.	.	
Constant	-.176	.069	-2.56	.011	-.311	-.041	**
Mean dependent var		-0.009	SD dependent var			0.039	

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,15

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.002	.002	-1.04	.3	-.005	.002	
ELKAM	-.005	.002	-3.01	.003	-.008	-.002	***
IBOD	0	0	-1.03	.305	0	0	
BOEX	0	0	-0.13	.896	0	0	
BOA	0	0	0.85	.393	0	.001	
INDAC	0	0	0.32	.751	0	0	
AUCEX	0	0	0.08	.933	0	0	
AUCA	0	0	0.12	.907	-.001	.001	
EXAIND	.018	.012	1.47	.141	-.006	.043	
EXAEX	-.001	.001	-1.27	.203	-.003	.001	
EXAA	0	0	0.66	.506	0	0	
SWITCH	-.001	.007	-0.18	.856	-.014	.012	
SIZE	0	0	0.40	.69	0	0	
PROF	.001	0	5.23	0	.001	.001	***
LEV	-.027	.013	-2.04	.042	-.053	-.001	**
GROW	0	0	-2.77	.006	0	0	***
LIQ	-.001	.001	-0.89	.373	-.004	.002	
DUM_MAN	.001	.003	0.35	.73	-.006	.008	
DUM_FTSE	.004	.004	0.92	.356	-.004	.011	
IND1	0	.006	-0.07	.943	-.011	.011	
IND2	.017	.006	2.89	.004	.005	.029	***
IND3	.011	.006	1.92	.055	0	.021	*
IND4	-.01	.006	-1.75	.081	-.021	.001	*
o	0	.	.	.	.	.	
Constant	-.065	.044	-1.48	.139	-.152	.021	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,20

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.002	.001	-2.02	.044	-.004	0	**
ELKAM	-.004	.001	-4.30	0	-.007	-.002	***
IBOD	0	0	-1.76	.079	0	0	*
BOEX	0	0	-0.72	.473	0	0	
BOA	0	0	-0.03	.974	0	0	
INDAC	0	0	-0.02	.985	0	0	
AUCEX	0	0	-0.27	.79	0	0	
AUCA	0	0	-0.59	.553	-.001	0	
EXAIND	.019	.008	2.37	.018	.003	.036	**
EXAEX	-.002	.001	-3.16	.002	-.003	-.001	***
EXAA	0	0	0.84	.399	0	0	
SWITCH	.002	.004	0.43	.666	-.007	.01	
SIZE	0	0	1.96	.05	0	0	*
PROF	.001	0	6.41	0	0	.001	***
LEV	-.025	.009	-2.91	.004	-.043	-.008	***
GROW	0	0	-1.31	.19	0	0	
LIQ	-.002	.001	-1.71	.088	-.004	0	*
DUM_MAN	.001	.002	0.39	.699	-.004	.005	
DUM_FTSE	.003	.003	1.01	.313	-.002	.008	
IND1	0	.004	-0.03	.976	-.007	.007	
IND2	.016	.004	4.16	0	.009	.024	***
IND3	.01	.004	2.68	.007	.003	.017	***
IND4	-.011	.004	-2.81	.005	-.018	-.003	***
o	0	.	.	.	.	.	
Constant	-.004	.029	-0.14	.886	-.061	.053	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,25

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.002	.001	-2.27	.024	-.004	0	**
ELKAM	-.004	.001	-4.45	0	-.006	-.002	***
IBOD	0	0	-1.53	.127	0	0	
BOEX	0	0	-0.63	.529	0	0	
BOA	0	0	-0.31	.756	0	0	
INDAC	0	0	0.88	.377	0	0	
AUCEX	0	0	-0.83	.407	0	0	
AUCA	0	0	-0.66	.51	-.001	0	
EXAIND	.013	.007	1.74	.082	-.002	.028	*
EXAEX	-.002	.001	-3.58	0	-.003	-.001	***
EXAA	0	0	0.71	.475	0	0	
SWITCH	.001	.004	0.19	.852	-.007	.008	
SIZE	0	0	1.89	.059	0	0	*
PROF	.001	0	6.70	0	0	.001	***
LEV	-.022	.008	-2.75	.006	-.038	-.006	***
GROW	0	0	-1.77	.077	0	0	*
LIQ	-.001	.001	-1.38	.169	-.003	.001	
DUM_MAN	.001	.002	0.49	.625	-.003	.005	
DUM_FTSE	0	.002	0.01	.994	-.005	.005	
IND1	0	.003	0.08	.94	-.006	.007	
IND2	.014	.004	3.87	0	.007	.021	***
IND3	.008	.003	2.52	.012	.002	.015	**
IND4	-.009	.003	-2.57	.01	-.016	-.002	**
o	0	.	.	.	.	.	
Constant	.011	.027	0.41	.683	-.041	.063	

Mean dependent var	-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,30

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.002	.001	-1.80	.073	-.003	0	*
ELKAM	-.003	.001	-4.27	0	-.005	-.002	***
IBOD	0	0	-1.19	.233	0	0	
BOEX	0	0	-1.10	.271	0	0	
BOA	0	0	-0.08	.934	0	0	
INDAC	0	0	1.14	.254	0	0	
AUCEX	0	0	-1.02	.308	0	0	
AUCA	0	0	-0.28	.78	0	0	
EXAIND	.013	.006	2.08	.038	.001	.026	**
EXAEX	-.002	0	-3.81	0	-.003	-.001	***
EXAA	0	0	0.73	.466	0	0	
SWITCH	0	.003	-0.07	.941	-.007	.006	
SIZE	0	0	1.93	.053	0	0	*
PROF	.001	0	7.44	0	0	.001	***
LEV	-.016	.007	-2.30	.022	-.029	-.002	**
GROW	0	0	-2.23	.026	0	0	**
LIQ	-.001	.001	-1.53	.127	-.003	0	
DUM_MAN	0	.002	0.14	.89	-.003	.004	
DUM_FTSE	-.002	.002	-0.93	.352	-.006	.002	
IND1	.001	.003	0.21	.837	-.005	.006	
IND2	.013	.003	4.29	0	.007	.019	***
IND3	.008	.003	2.84	.005	.003	.014	***
IND4	-.008	.003	-2.51	.012	-.013	-.002	**
o	0	.	.	.	.	.	
Constant	-.005	.023	-0.20	.844	-.05	.041	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,35

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.001	.001	-1.57	.117	-.003	0	
ELKAM	-.003	.001	-4.34	0	-.005	-.002	***
IBOD	0	0	-0.79	.432	0	0	
BOEX	0	0	-1.14	.255	0	0	
BOA	0	0	0.13	.9	0	0	
INDAC	0	0	1.41	.157	0	0	
AUCEX	0	0	-0.84	.399	0	0	
AUCA	0	0	-0.11	.914	0	0	
EXAIND	.015	.006	2.47	.013	.003	.027	**
EXAEX	-.002	0	-3.85	0	-.002	-.001	***
EXAA	0	0	0.63	.529	0	0	
SWITCH	-.001	.003	-0.30	.765	-.007	.005	
SIZE	0	0	1.85	.065	0	0	*
PROF	.001	0	6.78	0	0	.001	***
LEV	-.015	.007	-2.28	.023	-.028	-.002	**
GROW	0	0	-0.95	.345	0	0	
LIQ	-.001	.001	-1.53	.127	-.003	0	
DUM_MAN	-.001	.002	-0.45	.654	-.004	.003	
DUM_FTSE	-.002	.002	-0.86	.389	-.005	.002	
IND1	-.001	.003	-0.34	.732	-.006	.004	
IND2	.01	.003	3.45	.001	.004	.016	***
IND3	.006	.003	2.31	.021	.001	.012	**
IND4	-.006	.003	-2.20	.028	-.012	-.001	**
o	0	.	.	.	.	.	

Constant	-.012	.022	-0.55	.58	-.055	.031	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,40

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.001	.001	-1.68	.094	-.003	0	*
ELKAM	-.003	.001	-3.60	0	-.004	-.001	***
IBOD	0	0	-0.65	.518	0	0	
BOEX	0	0	-0.90	.368	0	0	
BOA	0	0	0.28	.783	0	0	
INDAC	0	0	1.37	.172	0	0	
AUCEX	0	0	-0.63	.529	0	0	
AUCA	0	0	-0.04	.968	0	0	
EXAIND	.014	.006	2.40	.017	.003	.026	**
EXAEX	-.002	0	-3.77	0	-.002	-.001	***
EXAA	0	0	0.62	.538	0	0	
SWITCH	-.002	.003	-0.49	.625	-.008	.005	
SIZE	0	0	1.64	.1	0	0	
PROF	0	0	6.39	0	0	.001	***
LEV	-.017	.006	-2.59	.01	-.029	-.004	***
GROW	0	0	-0.53	.599	0	0	
LIQ	-.001	.001	-0.97	.334	-.002	.001	
DUM_MAN	-.001	.002	-0.42	.672	-.004	.003	
DUM_FTSE	-.001	.002	-0.78	.433	-.005	.002	
IND1	-.001	.003	-0.38	.704	-.006	.004	
IND2	.008	.003	2.94	.003	.003	.014	***
IND3	.005	.003	1.89	.059	0	.01	*
IND4	-.005	.003	-1.62	.105	-.01	.001	
o	0	.	.	.	.	.	
Constant	-.015	.021	-0.71	.479	-.057	.027	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,45

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.001	.001	-1.22	.222	-.002	.001	
ELKAM	-.002	.001	-3.16	.002	-.004	-.001	***
IBOD	0	0	-0.52	.605	0	0	
BOEX	0	0	-0.57	.57	0	0	
BOA	0	0	0.53	.599	0	0	
INDAC	0	0	0.48	.633	0	0	
AUCEX	0	0	-0.45	.653	0	0	
AUCA	0	0	0.18	.857	0	0	
EXAIND	.007	.006	1.25	.213	-.004	.018	
EXAEX	-.002	0	-4.10	0	-.002	-.001	***
EXAA	0	0	0.68	.495	0	0	
SWITCH	0	.003	-0.13	.893	-.006	.005	
SIZE	0	0	1.28	.2	0	0	
PROF	0	0	6.48	0	0	.001	***
LEV	-.016	.006	-2.60	.009	-.027	-.004	***
GROW	0	0	-0.27	.789	0	0	
LIQ	-.001	.001	-1.05	.293	-.002	.001	
DUM_MAN	0	.002	-0.23	.816	-.003	.003	
DUM_FTSE	-.001	.002	-0.70	.483	-.005	.002	
IND1	-.002	.003	-0.81	.416	-.007	.003	
IND2	.007	.003	2.56	.01	.002	.012	**
IND3	.003	.003	1.18	.239	-.002	.008	
IND4	-.006	.003	-2.40	.016	-.011	-.001	**

o	0	.	.	.	.	.	
Constant	-.013	.02	-0.67	.505	-.052	.026	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,50

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.001	.001	-1.04	.298	-.002	.001	
ELKAM	-.002	.001	-2.40	.017	-.003	0	**
IBOD	0	0	-0.49	.626	0	0	
BOEX	0	0	-0.49	.627	0	0	
BOA	0	0	0.77	.442	0	0	
INDAC	0	0	0.69	.488	0	0	
AUCEX	0	0	-0.43	.671	0	0	
AUCA	0	0	0.17	.864	0	0	
EXAIND	.007	.005	1.25	.21	-.004	.018	
EXAEX	-.002	0	-4.09	0	-.002	-.001	***
EXAA	0	0	0.60	.548	0	0	
SWITCH	-.001	.003	-0.19	.848	-.006	.005	
SIZE	0	0	1.58	.115	0	0	
PROF	0	0	6.15	0	0	.001	***
LEV	-.017	.006	-2.97	.003	-.029	-.006	***
GROW	0	0	0.59	.553	0	0	
LIQ	-.001	.001	-1.09	.274	-.002	.001	
DUM_MAN	-.001	.002	-0.48	.63	-.004	.002	
DUM_FTSE	-.001	.002	-0.38	.707	-.004	.003	
IND1	-.002	.002	-0.75	.454	-.007	.003	
IND2	.007	.003	2.50	.013	.001	.012	**
IND3	.004	.002	1.48	.14	-.001	.008	
IND4	-.002	.003	-0.89	.375	-.007	.003	
o	0	.	.	.	.	.	
Constant	-.017	.019	-0.86	.389	-.055	.021	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,55

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	0	.001	-0.35	.728	-.002	.001	
ELKAM	-.001	.001	-1.59	.113	-.003	0	
IBOD	0	0	-0.61	.54	0	0	
BOEX	0	0	-0.40	.689	0	0	
BOA	0	0	1.12	.264	0	.001	
INDAC	0	0	0.28	.779	0	0	
AUCEX	0	0	-0.29	.771	0	0	
AUCA	0	0	0.25	.805	0	0	
EXAIND	.003	.006	0.49	.624	-.009	.015	
EXAEX	-.001	0	-3.57	0	-.002	-.001	***
EXAA	0	0	0.76	.449	0	0	
SWITCH	-.001	.003	-0.17	.866	-.007	.006	
SIZE	0	0	1.90	.057	0	0	*
PROF	0	0	4.92	0	0	.001	***
LEV	-.021	.006	-3.24	.001	-.033	-.008	***
GROW	0	0	0.89	.375	0	0	
LIQ	-.001	.001	-0.70	.486	-.002	.001	
DUM_MAN	0	.002	-0.20	.842	-.004	.003	
DUM_FTSE	0	.002	-0.25	.805	-.004	.003	
IND1	-.002	.003	-0.59	.556	-.007	.004	
IND2	.005	.003	1.72	.085	-.001	.01	*
IND3	.004	.003	1.50	.133	-.001	.009	

IND4	.002	.003	0.66	.51	-.004	.007	
o	0	.	.	.	.	.	
Constant	-.019	.021	-0.92	.36	-.061	.022	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,60

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.001	.001	-0.81	.42	-.002	.001	
ELKAM	-.001	.001	-1.60	.109	-.003	0	
IBOD	0	0	-1.03	.304	0	0	
BOEX	0	0	-0.69	.488	0	0	
BOA	0	0	0.95	.343	0	0	
INDAC	0	0	-0.06	.952	0	0	
AUCEX	0	0	-0.07	.944	0	0	
AUCA	0	0	0.00	.997	0	0	
EXAIND	.007	.006	1.12	.264	-.005	.018	
EXAEX	-.002	0	-3.76	0	-.002	-.001	***
EXAA	0	0	0.70	.481	0	0	
SWITCH	-.001	.003	-0.20	.84	-.007	.005	
SIZE	0	0	2.76	.006	0	0	***
PROF	0	0	5.16	0	0	.001	***
LEV	-.021	.006	-3.35	.001	-.034	-.009	***
GROW	0	0	0.50	.619	0	0	
LIQ	-.001	.001	-1.45	.148	-.002	0	
DUM_MAN	-.001	.002	-0.70	.482	-.004	.002	
DUM_FTSE	-.001	.002	-0.36	.722	-.004	.003	
IND1	-.002	.003	-0.58	.562	-.007	.004	
IND2	.004	.003	1.58	.114	-.001	.01	
IND3	.004	.003	1.53	.127	-.001	.009	
IND4	.007	.003	2.42	.016	.001	.012	**
o	0	.	.	.	.	.	
Constant	-.01	.021	-0.47	.635	-.051	.031	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,65

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	0	.001	-0.09	.925	-.002	.001	
ELKAM	-.001	.001	-1.57	.116	-.003	0	
IBOD	0	0	-1.14	.254	0	0	
BOEX	0	0	-1.09	.277	0	0	
BOA	0	0	1.12	.264	0	0	
INDAC	0	0	0.38	.702	0	0	
AUCEX	0	0	0.27	.788	0	0	
AUCA	0	0	-0.71	.48	0	0	
EXAIND	.01	.006	1.70	.09	-.002	.021	*
EXAEX	-.002	0	-3.86	0	-.002	-.001	***
EXAA	0	0	0.49	.623	0	0	
SWITCH	-.002	.003	-0.66	.512	-.008	.004	
SIZE	0	0	3.55	0	0	0	***
PROF	0	0	5.12	0	0	.001	***
LEV	-.025	.006	-4.12	0	-.037	-.013	***
GROW	0	0	0.53	.595	0	0	
LIQ	-.001	.001	-1.90	.058	-.003	0	*
DUM_MAN	-.001	.002	-0.84	.403	-.004	.002	
DUM_FTSE	-.001	.002	-0.70	.487	-.005	.002	
IND1	-.001	.003	-0.42	.671	-.006	.004	
IND2	.005	.003	1.85	.065	0	.01	*

IND3	.005	.003	1.90	.058	0	.01	*
IND4	.011	.003	4.17	0	.006	.016	***
o	0	.	.	.	.	.	
Constant	-.002	.02	-0.12	.903	-.042	.037	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,70

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	0	.001	0.06	.954	-.002	.002	
ELKAM	-.001	.001	-1.12	.262	-.002	.001	
IBOD	0	0	-0.76	.445	0	0	
BOEX	0	0	-0.88	.379	0	0	
BOA	0	0	1.13	.257	0	.001	
INDAC	0	0	0.18	.86	0	0	
AUCEX	0	0	0.68	.497	0	0	
AUCA	0	0	-0.70	.486	-.001	0	
EXAIND	.01	.006	1.57	.117	-.003	.023	
EXAEX	-.001	0	-3.33	.001	-.002	-.001	***
EXAA	0	0	0.35	.728	0	0	
SWITCH	-.003	.003	-0.81	.42	-.009	.004	
SIZE	0	0	3.03	.002	0	0	***
PROF	0	0	4.29	0	0	.001	***
LEV	-.027	.007	-4.04	0	-.041	-.014	***
GROW	0	0	0.53	.593	0	0	
LIQ	-.001	.001	-1.47	.142	-.003	0	
DUM_MAN	-.001	.002	-0.58	.565	-.005	.002	
DUM_FTSE	-.001	.002	-0.50	.619	-.005	.003	
IND1	0	.003	-0.02	.984	-.006	.006	
IND2	.004	.003	1.35	.177	-.002	.01	
IND3	.005	.003	1.76	.078	-.001	.011	*
IND4	.015	.003	5.16	0	.009	.021	***
o	0	.	.	.	.	.	
Constant	-.006	.023	-0.25	.806	-.05	.039	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,75

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	0	.001	-0.15	.879	-.002	.002	
ELKAM	-.001	.001	-1.51	.131	-.003	0	
IBOD	0	0	-0.25	.804	0	0	
BOEX	0	0	-0.91	.365	0	0	
BOA	0	0	1.21	.225	0	.001	
INDAC	0	0	-0.14	.89	0	0	
AUCEX	0	0	0.86	.391	0	0	
AUCA	0	0	-0.59	.558	-.001	0	
EXAIND	.013	.008	1.74	.083	-.002	.028	*
EXAEX	-.001	.001	-2.54	.011	-.002	0	**
EXAA	0	0	0.04	.964	0	0	
SWITCH	-.004	.004	-1.01	.311	-.012	.004	
SIZE	0	0	3.83	0	0	0	***
PROF	0	0	3.15	.002	0	0	***
LEV	-.034	.008	-4.30	0	-.05	-.019	***
GROW	0	0	0.85	.394	0	0	
LIQ	-.002	.001	-1.81	.071	-.003	0	*
DUM_MAN	0	.002	-0.16	.871	-.004	.004	
DUM_FTSE	-.001	.002	-0.50	.615	-.006	.003	
IND1	.001	.003	0.33	.743	-.006	.008	

IND2	.004	.004	1.03	.303	-.003	.011	
IND3	.007	.003	2.12	.034	.001	.014	**
IND4	.017	.003	4.80	0	.01	.024	***
o	0	.	.	.	.	.	
Constant	-.009	.027	-0.35	.727	-.062	.043	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,80

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	0	.001	0.09	.927	-.002	.002	
ELKAM	-.002	.001	-1.91	.056	-.003	0	*
IBOD	0	0	-0.03	.974	0	0	
BOEX	0	0	-0.64	.52	0	0	
BOA	0	0	0.79	.428	0	.001	
INDAC	0	0	-0.62	.534	0	0	
AUCEX	0	0	0.32	.747	0	0	
AUCA	0	0	-1.15	.249	-.001	0	
EXAIND	.021	.007	3.01	.003	.007	.035	***
EXAEX	-.001	0	-3.14	.002	-.002	-.001	***
EXAA	0	0	-0.20	.843	0	0	
SWITCH	-.003	.004	-0.93	.354	-.011	.004	
SIZE	0	0	4.13	0	0	0	***
PROF	0	0	2.74	.006	0	0	***
LEV	-.048	.007	-6.42	0	-.062	-.033	***
GROW	0	0	1.58	.114	0	0	
LIQ	-.002	.001	-2.97	.003	-.004	-.001	***
DUM_MAN	0	.002	-0.17	.863	-.004	.003	
DUM_FTSE	-.003	.002	-1.31	.191	-.007	.001	
IND1	.002	.003	0.69	.488	-.004	.008	
IND2	.004	.003	1.09	.277	-.003	.01	
IND3	.01	.003	3.30	.001	.004	.016	***
IND4	.019	.003	5.92	0	.013	.025	***
o	0	.	.	.	.	.	
Constant	.015	.025	0.60	.551	-.034	.063	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,85

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	0	.001	-0.21	.831	-.002	.001	
ELKAM	-.002	.001	-2.32	.021	-.003	0	**
IBOD	0	0	-0.32	.746	0	0	
BOEX	0	0	-0.71	.478	0	0	
BOA	0	0	-0.15	.879	0	0	
INDAC	0	0	-1.51	.132	0	0	
AUCEX	0	0	-0.15	.88	0	0	
AUCA	0	0	-0.35	.727	0	0	
EXAIND	.025	.006	4.27	0	.013	.036	***
EXAEX	-.002	0	-4.04	0	-.002	-.001	***
EXAA	0	0	-0.37	.711	0	0	
SWITCH	-.001	.003	-0.37	.709	-.007	.005	
SIZE	0	0	4.51	0	0	0	***
PROF	0	0	4.15	0	0	0	***
LEV	-.053	.006	-8.60	0	-.065	-.041	***
GROW	0	0	1.15	.25	0	0	
LIQ	-.003	.001	-3.59	0	-.004	-.001	***
DUM_MAN	.001	.002	0.68	.497	-.002	.004	
DUM_FTSE	-.002	.002	-1.28	.2	-.006	.001	

IND1	.003	.003	1.14	.255	-.002	.008	
IND2	.003	.003	1.23	.219	-.002	.009	
IND3	.012	.003	4.46	0	.006	.017	***
IND4	.02	.003	7.48	0	.015	.025	***
o	0	.	.	.	.	.	
Constant	.02	.021	0.99	.32	-.02	.061	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,90

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	0	.001	0.20	.839	-.002	.002	
ELKAM	-.002	.001	-1.84	.066	-.004	0	*
IBOD	0	0	0.96	.338	0	0	
BOEX	0	0	-1.27	.206	0	0	
BOA	0	0	0.35	.723	0	.001	
INDAC	0	0	-1.40	.161	0	0	
AUCEX	0	0	-0.62	.537	0	0	
AUCA	0	0	-0.41	.684	-.001	0	
EXAIND	.025	.008	3.11	.002	.009	.041	***
EXAEX	-.001	.001	-2.71	.007	-.003	0	***
EXAA	0	0	-0.34	.736	0	0	
SWITCH	-.002	.004	-0.45	.656	-.01	.006	
SIZE	0	0	4.46	0	0	0	***
PROF	0	0	2.19	.028	0	0	**
LEV	-.052	.009	-6.11	0	-.069	-.035	***
GROW	0	0	2.08	.038	0	0	**
LIQ	-.002	.001	-2.49	.013	-.004	-.001	**
DUM_MAN	0	.002	-0.05	.961	-.005	.004	
DUM_FTSE	-.004	.003	-1.74	.082	-.009	.001	*
IND1	0	.004	0.06	.95	-.007	.007	
IND2	-.001	.004	-0.36	.72	-.009	.006	
IND3	.005	.004	1.51	.13	-.002	.012	
IND4	.018	.004	4.88	0	.011	.025	***
o	0	.	.	.	.	.	
Constant	.023	.029	0.79	.427	-.033	.079	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,95

AEM_MJM	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.003	.001	-1.83	.068	-.005	0	*
ELKAM	-.003	.001	-2.63	.009	-.006	-.001	***
IBOD	0	0	0.92	.359	0	0	
BOEX	0	0	-1.95	.052	0	0	*
BOA	0	0	-0.19	.848	-.001	.001	
INDAC	0	0	-0.94	.348	0	0	
AUCEX	0	0	-0.75	.454	0	0	
AUCA	0	0	0.56	.576	0	.001	
EXAIND	.004	.01	0.39	.696	-.016	.024	
EXAEX	-.001	.001	-1.96	.05	-.003	0	**
EXAA	0	0	-0.45	.653	0	0	
SWITCH	-.005	.005	-0.91	.365	-.015	.006	
SIZE	0	0	3.99	0	0	0	***
PROF	0	0	1.31	.189	0	0	
LEV	-.042	.011	-3.85	0	-.063	-.021	***
GROW	0	0	1.89	.059	0	0	*

LIQ	-.002	.001	-1.72	.086	-.005	0	*
DUM_MAN	-.002	.003	-0.53	.593	-.007	.004	
DUM_FTSE	-.007	.003	-2.17	.03	-.013	-.001	**
IND1	-.008	.005	-1.65	.1	-.017	.001	*
IND2	-.009	.005	-1.95	.051	-.019	0	*
IND3	.002	.005	0.45	.655	-.007	.011	
IND4	.016	.005	3.33	.001	.006	.025	***
o	0	.	.	.	.	.	
Constant	.055	.036	1.53	.127	-.016	.127	
Mean dependent var		-0.009	SD dependent var			0.039	

*** p<.01, ** p<.05, * p<.1

Table 27: Real Activity Earnings Management (Principal Component Analysis) and KAM Quantity with Significance Sign

Regression Results Quantile 0,05

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NUM_KAM	.071	.041	1.72	.086	-.01	.152	*
IBOD	.006	.005	1.35	.177	-.003	.016	
BOEX	-.004	.004	-0.98	.329	-.011	.004	
BOA	-.006	.012	-0.46	.643	-.03	.018	
INDAC	-.004	.003	-1.05	.294	-.01	.003	
AUCEX	.005	.005	1.01	.312	-.005	.014	
AUCA	.006	.013	0.45	.653	-.019	.031	
EXAIND	.043	.434	0.10	.922	-.808	.893	
EXAEX	-.095	.033	-2.84	.005	-.161	-.029	***
EXAA	0	0	1.80	.072	0	0	*
SWITCH	-.093	.228	-0.41	.683	-.54	.354	
SIZE	0	0	-0.23	.815	0	0	
PROF	-.001	.006	-0.13	.898	-.012	.01	
LEV	-2.919	.462	-6.31	0	-3.826	-2.012	***
GROW	.001	.002	0.52	.602	-.004	.006	
LIQ	-.002	.052	-0.04	.97	-.104	.101	
DUM_MAN	.04	.122	0.33	.742	-.199	.279	
DUM_FTSE	-.483	.134	-3.59	0	-.746	-.219	***
IND1	-.117	.194	-0.60	.546	-.498	.264	
IND2	.011	.207	0.06	.956	-.394	.417	
IND3	-.169	.193	-0.88	.381	-.548	.21	
IND4	-.124	.201	-0.62	.538	-.517	.27	
o	0	.	.	.	.	.	
Constant	-.703	1.539	-0.46	.648	-3.722	2.316	
Mean dependent var		0.001	SD dependent var			1.000	

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,10

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	.043	.025	1.74	.083	-.006	.091	*
IBOD	.004	.003	1.35	.179	-.002	.009	
BOEX	-.001	.002	-0.35	.727	-.005	.004	
BOA	-.006	.007	-0.77	.439	-.02	.009	
INDAC	-.001	.002	-0.47	.636	-.005	.003	
AUCEX	.003	.003	1.07	.286	-.003	.009	
AUCA	.001	.008	0.15	.884	-.014	.016	
EXAIND	.182	.259	0.71	.481	-.325	.69	
EXAEX	-.072	.02	-3.63	0	-.111	-.033	***
EXAA	0	0	2.35	.019	0	0	**
SWITCH	-.029	.136	-0.21	.831	-.296	.238	
SIZE	0	0	-0.25	.806	0	0	
PROF	-.001	.003	-0.35	.724	-.008	.005	

LEV	-2.417	.276	-8.76	0	-2.959	-1.876	***
GROW	.001	.001	0.47	.637	-.002	.004	
LIQ	-.001	.031	-0.03	.976	-.062	.06	
DUM_MAN	.034	.073	0.47	.635	-.108	.177	
DUM_FTSE	-.33	.08	-4.11	0	-.487	-.173	***
IND1	-.076	.116	-0.66	.51	-.304	.151	
IND2	.01	.123	0.08	.935	-.232	.252	
IND3	-.007	.115	-0.06	.95	-.233	.219	
IND4	-.04	.12	-0.33	.74	-.274	.195	
o	0	.	.	.	.	.	
Constant	-.287	.918	-0.31	.755	-2.089	1.515	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,15

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	.04	.018	2.27	.023	.005	.075	**
IBOD	.003	.002	1.37	.17	-.001	.007	
BOEX	0	.002	-0.14	.891	-.003	.003	
BOA	-.005	.005	-1.03	.304	-.016	.005	
INDAC	0	.001	-0.14	.888	-.003	.003	
AUCEX	.002	.002	1.10	.273	-.002	.006	
AUCA	0	.005	-0.04	.97	-.011	.011	
EXAIND	.094	.187	0.50	.616	-.273	.461	
EXAEX	-.074	.014	-5.16	0	-.103	-.046	***
EXAA	0	0	2.43	.015	0	0	**
SWITCH	-.056	.098	-0.57	.566	-.249	.136	
SIZE	0	0	-0.50	.614	0	0	
PROF	-.002	.002	-0.87	.385	-.007	.003	
LEV	-2.115	.199	-10.61	0	-2.506	-1.724	***
GROW	.001	.001	0.50	.617	-.002	.003	
LIQ	-.01	.023	-0.45	.651	-.054	.034	
DUM_MAN	.04	.052	0.76	.45	-.063	.143	
DUM_FTSE	-.277	.058	-4.78	0	-.39	-.163	***
IND1	-.004	.084	-0.04	.966	-.168	.161	
IND2	.007	.089	0.08	.939	-.168	.181	
IND3	.013	.083	0.15	.879	-.151	.176	
IND4	.013	.086	0.15	.88	-.157	.183	
o	0	.	.	.	.	.	
Constant	-.009	.663	-0.01	.989	-1.311	1.292	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,20

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	.056	.018	3.07	.002	.02	.092	***
IBOD	.003	.002	1.47	.143	-.001	.007	
BOEX	-.001	.002	-0.45	.651	-.004	.002	
BOA	-.005	.005	-0.96	.338	-.016	.005	
INDAC	0	.001	0.02	.988	-.003	.003	
AUCEX	.002	.002	1.15	.252	-.002	.007	
AUCA	-.002	.006	-0.32	.745	-.013	.009	
EXAIND	.011	.192	0.06	.955	-.366	.387	
EXAEX	-.056	.015	-3.78	0	-.085	-.027	***
EXAA	0	0	2.57	.01	0	0	**
SWITCH	-.029	.101	-0.29	.773	-.227	.169	
SIZE	0	0	-1.09	.277	0	0	
PROF	-.003	.002	-1.01	.311	-.007	.002	
LEV	-1.87	.205	-9.14	0	-2.271	-1.468	***

GROW	0	.001	0.37	.714	-.002	.003	
LIQ	-.028	.023	-1.22	.223	-.074	.017	
DUM_MAN	.05	.054	0.93	.354	-.056	.156	
DUM_FTSE	-.211	.059	-3.54	0	-.327	-.094	***
IND1	.129	.086	1.50	.134	-.04	.298	
IND2	.004	.091	0.05	.961	-.175	.184	
IND3	.025	.086	0.30	.767	-.142	.193	
IND4	-.005	.089	-0.06	.956	-.179	.169	
o	0	.	.	.	.	.	
Constant	.17	.681	0.25	.803	-1.166	1.506	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,25

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	.055	.017	3.24	.001	.022	.088	***
IBOD	.005	.002	2.37	.018	.001	.008	**
BOEX	-.002	.002	-1.24	.216	-.005	.001	
BOA	-.003	.005	-0.65	.517	-.013	.007	
INDAC	0	.001	0.36	.722	-.002	.003	
AUCEX	.001	.002	0.48	.633	-.003	.005	
AUCA	-.007	.005	-1.33	.183	-.017	.003	
EXAIND	-.055	.178	-0.31	.758	-.403	.294	
EXAEX	-.072	.014	-5.26	0	-.099	-.045	***
EXAA	0	0	2.43	.015	0	0	**
SWITCH	-.041	.093	-0.44	.66	-.224	.142	
SIZE	0	0	-1.41	.159	0	0	
PROF	-.003	.002	-1.44	.151	-.008	.001	
LEV	-1.48	.189	-7.81	0	-1.851	-1.108	***
GROW	0	.001	0.19	.851	-.002	.002	
LIQ	-.03	.021	-1.40	.16	-.072	.012	
DUM_MAN	.044	.05	0.88	.378	-.054	.142	
DUM_FTSE	-.194	.055	-3.53	0	-.302	-.086	***
IND1	.169	.08	2.12	.034	.013	.325	**
IND2	.012	.085	0.15	.884	-.154	.178	
IND3	.014	.079	0.18	.855	-.141	.17	
IND4	.031	.082	0.38	.704	-.13	.192	
o	0	.	.	.	.	.	
Constant	.613	.63	0.97	.331	-.623	1.85	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,30

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	.052	.014	3.60	0	.023	.08	***
IBOD	.004	.002	2.60	.009	.001	.008	***
BOEX	-.002	.001	-1.85	.064	-.005	0	*
BOA	-.006	.004	-1.41	.159	-.014	.002	
INDAC	0	.001	0.40	.688	-.002	.003	
AUCEX	0	.002	-0.00	.996	-.003	.003	
AUCA	-.008	.004	-1.72	.085	-.016	.001	*
EXAIND	-.143	.15	-0.95	.341	-.438	.152	
EXAEX	-.056	.012	-4.86	0	-.079	-.034	***
EXAA	0	0	2.65	.008	0	0	***
SWITCH	-.012	.079	-0.16	.875	-.167	.143	
SIZE	0	0	-1.81	.07	0	0	*
PROF	-.004	.002	-1.92	.055	-.008	0	*
LEV	-1.301	.16	-8.11	0	-1.615	-.986	***
GROW	0	.001	0.03	.976	-.002	.002	

LIQ	-.03	.018	-1.64	.1	-.065	.006	
DUM_MAN	.041	.042	0.98	.327	-.041	.124	
DUM_FTSE	-.175	.047	-3.76	0	-.267	-.084	***
IND1	.168	.067	2.49	.013	.036	.3	**
IND2	-.001	.072	-0.02	.985	-.142	.139	
IND3	.046	.067	0.68	.495	-.086	.177	
IND4	.094	.07	1.35	.176	-.042	.231	
o	0	.	.	.	.	.	
Constant	1.156	.534	2.17	.031	.108	2.203	**

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,35

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	.043	.015	2.77	.006	.012	.073	***
IBOD	.005	.002	2.67	.008	.001	.008	***
BOEX	-.002	.001	-1.49	.136	-.005	.001	
BOA	-.009	.005	-1.97	.049	-.018	0	**
INDAC	.001	.001	0.56	.576	-.002	.003	
AUCEX	-.001	.002	-0.64	.52	-.005	.002	
AUCA	-.005	.005	-1.09	.276	-.014	.004	
EXAIND	-.142	.161	-0.88	.38	-.459	.175	
EXAEX	-.018	.012	-1.42	.155	-.042	.007	
EXAA	0	0	2.23	.026	0	0	**
SWITCH	.017	.085	0.20	.84	-.149	.184	
SIZE	0	0	-1.79	.074	0	0	*
PROF	-.003	.002	-1.51	.131	-.007	.001	
LEV	-1.058	.172	-6.15	0	-1.396	-.721	***
GROW	0	.001	-0.50	.614	-.002	.001	
LIQ	-.027	.019	-1.40	.161	-.065	.011	
DUM_MAN	.022	.045	0.48	.632	-.067	.111	
DUM_FTSE	-.183	.05	-3.66	0	-.281	-.085	***
IND1	.184	.072	2.54	.011	.042	.326	**
IND2	-.02	.077	-0.26	.797	-.171	.131	
IND3	.099	.072	1.37	.17	-.042	.24	
IND4	.136	.075	1.83	.068	-.01	.283	*
o	0	.	.	.	.	.	
Constant	1.249	.573	2.18	.029	.125	2.373	**

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,40

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	.04	.015	2.62	.009	.01	.07	***
IBOD	.005	.002	2.87	.004	.002	.009	***
BOEX	-.002	.001	-1.35	.176	-.005	.001	
BOA	-.008	.005	-1.67	.095	-.016	.001	*
INDAC	0	.001	0.36	.718	-.002	.003	
AUCEX	-.001	.002	-0.56	.573	-.004	.002	
AUCA	-.006	.005	-1.21	.227	-.015	.004	
EXAIND	-.096	.16	-0.60	.549	-.41	.218	
EXAEX	-.016	.012	-1.30	.195	-.04	.008	
EXAA	0	0	2.05	.04	0	0	**
SWITCH	.021	.084	0.26	.799	-.143	.186	
SIZE	0	0	-1.85	.065	0	0	*
PROF	-.003	.002	-1.69	.092	-.008	.001	*
LEV	-.963	.171	-5.64	0	-1.298	-.628	***
GROW	-.001	.001	-0.64	.524	-.002	.001	
LIQ	-.03	.019	-1.55	.122	-.068	.008	

DUM_MAN	.008	.045	0.18	.855	-.08	.096	
DUM_FTSE	-.18	.05	-3.63	0	-.277	-.082	***
IND1	.207	.072	2.89	.004	.067	.348	***
IND2	-.044	.076	-0.58	.563	-.194	.105	
IND3	.157	.071	2.20	.028	.017	.297	**
IND4	.195	.074	2.63	.009	.049	.34	***
o	0	.	.	.	.	.	
Constant	1.133	.568	1.99	.046	.019	2.247	**

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,45

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	.023	.016	1.43	.153	-.009	.054	
IBOD	.006	.002	3.18	.002	.002	.01	***
BOEX	-.001	.001	-0.61	.544	-.004	.002	
BOA	-.006	.005	-1.19	.234	-.015	.004	
INDAC	0	.001	-0.06	.954	-.003	.002	
AUCEX	0	.002	0.07	.944	-.004	.004	
AUCA	-.009	.005	-1.80	.073	-.019	.001	*
EXAIND	-.023	.168	-0.14	.891	-.353	.307	
EXAEX	-.016	.013	-1.27	.205	-.042	.009	
EXAA	0	0	1.68	.094	0	0	*
SWITCH	.05	.088	0.57	.571	-.123	.223	
SIZE	0	0	-1.59	.112	0	0	
PROF	-.003	.002	-1.48	.138	-.007	.001	
LEV	-.672	.179	-3.75	0	-1.024	-.321	***
GROW	-.001	.001	-1.03	.304	-.003	.001	
LIQ	-.024	.02	-1.17	.243	-.063	.016	
DUM_MAN	-.017	.047	-0.36	.721	-.109	.076	
DUM_FTSE	-.169	.052	-3.25	.001	-.271	-.067	***
IND1	.17	.075	2.26	.024	.022	.317	**
IND2	-.108	.08	-1.34	.179	-.265	.049	
IND3	.175	.075	2.34	.02	.028	.322	**
IND4	.174	.078	2.24	.025	.022	.327	**
o	0	.	.	.	.	.	
Constant	1.126	.596	1.89	.059	-.044	2.296	*

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,50

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	.007	.017	0.40	.69	-.026	.04	
IBOD	.005	.002	2.77	.006	.002	.009	***
BOEX	-.001	.002	-0.84	.401	-.004	.002	
BOA	-.004	.005	-0.75	.451	-.014	.006	
INDAC	0	.001	-0.13	.895	-.003	.003	
AUCEX	0	.002	0.25	.802	-.003	.004	
AUCA	-.009	.005	-1.73	.084	-.019	.001	*
EXAIND	-.001	.176	-0.01	.995	-.347	.345	
EXAEX	-.011	.014	-0.81	.42	-.038	.016	
EXAA	0	0	1.34	.179	0	0	
SWITCH	.053	.093	0.58	.564	-.128	.235	
SIZE	0	0	-1.31	.19	0	0	
PROF	-.004	.002	-1.78	.076	-.009	0	*
LEV	-.441	.188	-2.34	.019	-.809	-.072	**
GROW	-.001	.001	-1.06	.29	-.003	.001	
LIQ	-.02	.021	-0.93	.353	-.061	.022	
DUM_MAN	-.002	.05	-0.03	.975	-.099	.096	

DUM_FTSE	-.166	.055	-3.03	.002	-.273	-.059	***
IND1	.152	.079	1.93	.054	-.003	.307	*
IND2	-.116	.084	-1.38	.169	-.28	.049	
IND3	.242	.079	3.08	.002	.088	.396	***
IND4	.183	.082	2.24	.025	.023	.343	**
o	0	.	.	.	.	.	
Constant	1.008	.626	1.61	.108	-.22	2.235	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,55

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.011	.017	-0.65	.517	-.043	.022	
IBOD	.006	.002	2.97	.003	.002	.009	***
BOEX	-.001	.001	-0.70	.485	-.004	.002	
BOA	-.008	.005	-1.53	.127	-.017	.002	
INDAC	-.001	.001	-0.69	.493	-.004	.002	
AUCEX	0	.002	0.06	.953	-.004	.004	
AUCA	-.009	.005	-1.83	.067	-.019	.001	*
EXAIND	.083	.174	0.47	.636	-.259	.424	
EXAEX	-.011	.013	-0.82	.412	-.037	.015	
EXAA	0	0	1.23	.218	0	0	
SWITCH	.047	.091	0.52	.605	-.132	.227	
SIZE	0	0	-0.65	.518	0	0	
PROF	-.004	.002	-1.73	.084	-.008	.001	*
LEV	-.172	.186	-0.93	.355	-.536	.192	
GROW	-.001	.001	-1.49	.136	-.003	0	
LIQ	-.014	.021	-0.69	.491	-.056	.027	
DUM_MAN	.012	.049	0.25	.805	-.084	.108	
DUM_FTSE	-.173	.054	-3.21	.001	-.279	-.067	***
IND1	.158	.078	2.03	.043	.005	.311	**
IND2	-.131	.083	-1.58	.115	-.293	.032	
IND3	.293	.078	3.77	0	.141	.445	***
IND4	.262	.081	3.25	.001	.104	.419	***
o	0	.	.	.	.	.	
Constant	1.411	.618	2.28	.023	.199	2.623	**

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,60

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.017	.02	-0.85	.397	-.056	.022	
IBOD	.007	.002	2.85	.004	.002	.011	***
BOEX	-.001	.002	-0.34	.731	-.004	.003	
BOA	-.008	.006	-1.34	.179	-.02	.004	
INDAC	-.001	.002	-0.74	.459	-.004	.002	
AUCEX	0	.002	-0.12	.901	-.005	.004	
AUCA	-.009	.006	-1.45	.147	-.021	.003	
EXAIND	.13	.21	0.62	.538	-.283	.542	
EXAEX	-.009	.016	-0.56	.572	-.041	.023	
EXAA	0	0	0.78	.437	0	0	
SWITCH	.003	.11	0.03	.979	-.214	.22	
SIZE	0	0	-0.63	.532	0	0	
PROF	-.004	.003	-1.47	.142	-.009	.001	
LEV	.227	.224	1.01	.312	-.213	.666	
GROW	-.002	.001	-1.57	.117	-.004	0	
LIQ	-.003	.025	-0.12	.907	-.053	.047	
DUM_MAN	.007	.059	0.12	.901	-.108	.123	
DUM_FTSE	-.197	.065	-3.03	.003	-.325	-.07	***

IND1	.122	.094	1.30	.194	-.062	.307	
IND2	-.151	.1	-1.51	.132	-.347	.045	
IND3	.236	.094	2.52	.012	.052	.42	**
IND4	.26	.097	2.68	.008	.069	.451	***
o	0	.	.	.	.	.	
Constant	1.361	.746	1.83	.068	-.102	2.824	*

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,65

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.032	.024	-1.33	.182	-.08	.015	
IBOD	.006	.003	2.18	.029	.001	.012	**
BOEX	-.001	.002	-0.56	.578	-.005	.003	
BOA	-.006	.007	-0.87	.383	-.02	.008	
INDAC	0	.002	-0.12	.902	-.004	.004	
AUCEX	.002	.003	0.58	.559	-.004	.007	
AUCA	-.007	.007	-0.94	.345	-.022	.008	
EXAIND	.04	.254	0.16	.875	-.458	.538	
EXAEX	-.003	.02	-0.15	.884	-.041	.036	
EXAA	0	0	0.86	.39	0	0	
SWITCH	-.027	.133	-0.20	.84	-.288	.235	
SIZE	0	0	-0.55	.582	0	0	
PROF	-.003	.003	-0.99	.321	-.01	.003	
LEV	.539	.271	1.99	.047	.008	1.07	**
GROW	-.002	.001	-1.71	.088	-.005	0	*
LIQ	.001	.031	0.03	.979	-.059	.061	
DUM_MAN	.019	.071	0.26	.794	-.121	.158	
DUM_FTSE	-.166	.079	-2.11	.035	-.32	-.012	**
IND1	-.02	.114	-0.17	.863	-.242	.203	
IND2	-.277	.121	-2.29	.022	-.514	-.04	**
IND3	.173	.113	1.53	.127	-.049	.395	
IND4	.169	.117	1.44	.15	-.061	.399	
o	0	.	.	.	.	.	
Constant	1.115	.9	1.24	.216	-.652	2.881	

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,70

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.031	.026	-1.18	.238	-.082	.02	
IBOD	.007	.003	2.35	.019	.001	.013	**
BOEX	-.001	.002	-0.25	.805	-.005	.004	
BOA	-.004	.008	-0.46	.647	-.019	.012	
INDAC	-.001	.002	-0.53	.595	-.005	.003	
AUCEX	.001	.003	0.49	.621	-.004	.007	
AUCA	-.007	.008	-0.90	.367	-.023	.008	
EXAIND	.111	.272	0.41	.683	-.423	.646	
EXAEX	-.01	.021	-0.48	.632	-.051	.031	
EXAA	0	0	0.63	.527	0	0	
SWITCH	.03	.143	0.21	.834	-.251	.311	
SIZE	0	0	-0.74	.457	0	0	
PROF	-.004	.004	-1.10	.27	-.011	.003	
LEV	1.095	.291	3.77	0	.524	1.665	***
GROW	-.003	.002	-1.86	.063	-.006	0	*
LIQ	-.002	.033	-0.06	.956	-.066	.063	
DUM_MAN	-.017	.077	-0.22	.827	-.167	.133	
DUM_FTSE	-.177	.084	-2.09	.037	-.342	-.011	**
IND1	-.038	.122	-0.31	.754	-.278	.201	

IND2	-.267	.13	-2.06	.04	-.522	-.013	**
IND3	.178	.121	1.47	.143	-.06	.416	
IND4	.166	.126	1.32	.187	-.081	.413	
o	0	.	.	.	.	.	
Constant	.783	.967	0.81	.418	-1.114	2.68	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,75

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.028	.024	-1.16	.248	-.075	.019	
IBOD	.007	.003	2.67	.008	.002	.013	***
BOEX	0	.002	-0.13	.899	-.005	.004	
BOA	-.003	.007	-0.40	.688	-.017	.011	
INDAC	0	.002	-0.11	.914	-.004	.004	
AUCEX	.002	.003	0.62	.535	-.004	.007	
AUCA	-.008	.007	-1.07	.285	-.022	.007	
EXAIND	.078	.252	0.31	.756	-.416	.573	
EXAEX	-.014	.019	-0.72	.472	-.052	.024	
EXAA	0	0	0.34	.73	0	0	
SWITCH	-.028	.132	-0.21	.83	-.288	.231	
SIZE	0	0	-1.41	.159	0	0	
PROF	-.002	.003	-0.49	.627	-.008	.005	
LEV	1.922	.269	7.15	0	1.394	2.449	***
GROW	-.004	.001	-2.96	.003	-.007	-.001	***
LIQ	-.001	.03	-0.05	.963	-.061	.058	
DUM_MAN	-.04	.071	-0.56	.572	-.179	.099	
DUM_FTSE	-.09	.078	-1.15	.249	-.243	.063	
IND1	-.145	.113	-1.28	.2	-.366	.077	
IND2	-.241	.12	-2.01	.045	-.477	-.005	**
IND3	.074	.112	0.66	.511	-.147	.294	
IND4	.103	.117	0.89	.376	-.126	.332	
o	0	.	.	.	.	.	
Constant	.677	.895	0.76	.449	-1.078	2.433	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,80

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.017	.028	-0.61	.539	-.071	.037	
IBOD	.006	.003	1.76	.079	-.001	.012	*
BOEX	-.001	.002	-0.28	.782	-.006	.004	
BOA	.001	.008	0.09	.924	-.015	.017	
INDAC	0	.002	0.18	.857	-.004	.005	
AUCEX	.002	.003	0.68	.496	-.004	.008	
AUCA	-.006	.009	-0.66	.507	-.022	.011	
EXAIND	-.022	.29	-0.08	.939	-.591	.547	
EXAEX	-.015	.022	-0.69	.491	-.059	.028	
EXAA	0	0	0.02	.988	0	0	
SWITCH	-.041	.152	-0.27	.788	-.34	.258	
SIZE	0	0	-1.35	.176	0	0	
PROF	-.003	.004	-0.67	.504	-.01	.005	
LEV	2.37	.309	7.67	0	1.764	2.977	***
GROW	-.004	.002	-2.73	.007	-.008	-.001	***
LIQ	-.001	.035	-0.04	.97	-.07	.067	
DUM_MAN	-.032	.081	-0.39	.694	-.192	.128	
DUM_FTSE	-.054	.09	-0.60	.547	-.23	.122	
IND1	-.161	.13	-1.24	.216	-.415	.094	
IND2	-.199	.138	-1.44	.151	-.47	.072	

IND3	.2	.129	1.55	.122	-.053	.454	
IND4	.14	.134	1.04	.298	-.123	.403	
o	0	.	.	.	.	.	
Constant	.192	1.029	0.19	.852	-1.827	2.211	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,85

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.015	.03	-0.49	.623	-.074	.044	
IBOD	.004	.003	1.27	.204	-.002	.011	
BOEX	-.002	.003	-0.56	.573	-.007	.004	
BOA	.008	.009	0.90	.368	-.01	.026	
INDAC	.002	.002	0.63	.532	-.003	.006	
AUCEX	.004	.004	1.12	.262	-.003	.011	
AUCA	-.005	.009	-0.56	.576	-.024	.013	
EXAIND	-.077	.317	-0.24	.808	-.699	.545	
EXAEX	-.017	.024	-0.69	.49	-.065	.031	
EXAA	0	0	-0.26	.797	0	0	
SWITCH	-.017	.166	-0.10	.918	-.344	.31	
SIZE	0	0	-1.73	.084	0	0	*
PROF	-.006	.004	-1.56	.119	-.014	.002	
LEV	3.121	.338	9.24	0	2.458	3.784	***
GROW	-.002	.002	-0.96	.335	-.005	.002	
LIQ	-.009	.038	-0.24	.809	-.084	.066	
DUM_MAN	-.065	.089	-0.73	.465	-.24	.11	
DUM_FTSE	.004	.098	0.04	.967	-.189	.197	
IND1	-.154	.142	-1.09	.277	-.433	.124	
IND2	-.268	.151	-1.78	.076	-.564	.028	*
IND3	.132	.141	0.94	.348	-.145	.409	
IND4	.106	.147	0.73	.468	-.181	.394	
o	0	.	.	.	.	.	
Constant	-.486	1.125	-0.43	.665	-2.693	1.72	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,90

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.042	.04	-1.03	.302	-.121	.037	
IBOD	.003	.005	0.58	.564	-.006	.012	
BOEX	-.001	.004	-0.35	.724	-.008	.006	
BOA	.012	.012	0.96	.336	-.012	.035	
INDAC	.001	.003	0.30	.766	-.005	.007	
AUCEX	.006	.005	1.26	.207	-.003	.015	
AUCA	-.005	.012	-0.40	.686	-.029	.019	
EXAIND	.001	.423	0.00	.999	-.83	.831	
EXAEX	-.018	.033	-0.55	.579	-.082	.046	
EXAA	0	0	-0.31	.754	0	0	
SWITCH	.099	.222	0.45	.655	-.337	.536	
SIZE	0	0	-1.34	.181	0	0	
PROF	-.012	.005	-2.14	.033	-.022	-.001	**
LEV	3.935	.451	8.72	0	3.05	4.821	***
GROW	-.003	.002	-1.05	.296	-.007	.002	
LIQ	0	.051	-0.01	.992	-.101	.1	
DUM_MAN	-.087	.119	-0.73	.465	-.32	.146	
DUM_FTSE	.036	.131	0.28	.781	-.221	.294	
IND1	-.239	.19	-1.26	.208	-.611	.133	
IND2	-.358	.202	-1.77	.077	-.753	.038	*
IND3	.01	.189	0.05	.957	-.36	.38	

IND4	.124	.196	0.63	.527	-.26	.508	
o	0	.	.	.	.	.	
Constant	-.758	1.502	-0.50	.614	-3.705	2.19	

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1

Regression Results Quantile 0,95

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
NB_KAM	-.117	.058	-2.01	.045	-.232	-.003	**
IBOD	-.002	.007	-0.29	.774	-.015	.011	
BOEX	-.006	.005	-1.07	.285	-.016	.005	
BOA	.016	.017	0.93	.351	-.018	.05	
INDAC	.003	.005	0.63	.528	-.006	.012	
AUCEX	.008	.007	1.24	.213	-.005	.022	
AUCA	.005	.018	0.28	.781	-.03	.04	
EXAIND	-.23	.614	-0.37	.709	-1.434	.975	
EXAEX	.002	.047	0.04	.965	-.091	.095	
EXAA	0	0	-0.83	.407	0	0	
SWITCH	.26	.323	0.81	.421	-.373	.893	
SIZE	0	0	-1.10	.271	0	0	
PROF	-.011	.008	-1.39	.164	-.027	.005	
LEV	5.503	.655	8.40	0	4.218	6.787	***
GROW	-.003	.003	-0.86	.391	-.01	.004	
LIQ	-.004	.074	-0.06	.953	-.15	.141	
DUM_MAN	-.001	.172	-0.01	.995	-.339	.337	
DUM_FTSE	.291	.19	1.53	.127	-.083	.664	
IND1	-.289	.275	-1.05	.293	-.829	.25	
IND2	-.533	.293	-1.82	.069	-1.107	.041	*
IND3	.317	.274	1.16	.247	-.22	.854	
IND4	-.282	.284	-0.99	.322	-.839	.276	
o	0	.	.	.	.	.	
Constant	-1.369	2.179	-0.63	.53	-5.645	2.907	

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1

Table 28: Real Activity Earnings Management (Principal Component Analysis) and KAM Quality with Significance Sign

Regression Results Quantile 0,05

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	.017	.054	0.32	.75	-.089	.124	
ELKAM	.116	.05	2.31	.021	.018	.215	**
IBOD	.006	.004	1.31	.192	-.003	.014	
BOEX	-.003	.003	-0.97	.332	-.01	.003	
BOA	-.005	.011	-0.47	.639	-.027	.017	
INDAC	-.003	.003	-0.96	.337	-.009	.003	
AUCEX	.004	.004	0.97	.334	-.004	.013	
AUCA	.003	.012	0.28	.778	-.02	.026	
EXAIND	.12	.398	0.30	.762	-.66	.9	
EXAEX	-.024	.027	-0.89	.376	-.078	.029	
EXAA	0	0	1.93	.054	0	0	*
SWITCH	-.062	.209	-0.30	.767	-.471	.348	
SIZE	0	0	-0.43	.67	0	0	
PROF	0	.005	-0.04	.969	-.01	.01	
LEV	-3.007	.424	-7.09	0	-3.838	-2.175	***
GROW	.001	.002	0.51	.614	-.003	.006	
LIQ	.01	.048	0.21	.832	-.084	.104	
DUM_MAN	.02	.112	0.18	.855	-.199	.239	
DUM_FTSE	-.433	.124	-3.49	0	-.677	-.19	***
IND1	-.149	.179	-0.83	.405	-.5	.202	

IND2	.02	.189	0.10	.916	-.351	.391	
IND3	-.045	.177	-0.26	.798	-.393	.303	
IND4	-.083	.184	-0.45	.651	-.444	.277	
o	0	.	.	.	.	.	
Constant	-.57	1.412	-0.40	.686	-3.341	2.201	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,10

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	.017	.04	0.42	.675	-.062	.095	
ELKAM	.066	.037	1.79	.074	-.006	.139	*
IBOD	.005	.003	1.45	.148	-.002	.011	
BOEX	-.001	.003	-0.30	.762	-.006	.004	
BOA	-.003	.008	-0.41	.681	-.02	.013	
INDAC	-.002	.002	-0.88	.381	-.006	.002	
AUCEX	.003	.003	1.08	.281	-.003	.01	
AUCA	.004	.009	0.44	.658	-.013	.021	
EXAIND	.219	.292	0.75	.452	-.353	.791	
EXAEX	-.072	.02	-3.60	0	-.111	-.033	***
EXAA	0	0	2.15	.031	0	0	**
SWITCH	0	.153	0.00	.999	-.3	.301	
SIZE	0	0	-0.33	.74	0	0	
PROF	-.001	.004	-0.23	.814	-.008	.007	
LEV	-2.471	.311	-7.95	0	-3.081	-1.861	***
GROW	.001	.002	0.37	.709	-.003	.004	
LIQ	.004	.035	0.11	.91	-.065	.073	
DUM_MAN	.014	.082	0.17	.864	-.147	.175	
DUM_FTSE	-.361	.091	-3.97	0	-.54	-.183	***
IND1	-.131	.131	-1.00	.319	-.388	.127	
IND2	-.022	.139	-0.16	.875	-.294	.25	
IND3	.038	.13	0.29	.771	-.217	.293	
IND4	-.028	.135	-0.21	.837	-.292	.237	
o	0	.	.	.	.	.	
Constant	-.798	1.036	-0.77	.441	-2.83	1.235	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,15

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	.003	.029	0.11	.914	-.053	.06	
ELKAM	.056	.027	2.10	.036	.004	.108	**
IBOD	.003	.002	1.12	.263	-.002	.007	
BOEX	0	.002	0.07	.948	-.003	.004	
BOA	-.005	.006	-0.86	.387	-.017	.007	
INDAC	-.001	.002	-0.41	.681	-.004	.003	
AUCEX	.002	.002	0.78	.437	-.003	.006	
AUCA	-.002	.006	-0.28	.781	-.014	.01	
EXAIND	.143	.21	0.68	.497	-.27	.556	
EXAEX	-.052	.014	-3.60	0	-.08	-.024	***
EXAA	0	0	1.86	.063	0	0	*
SWITCH	-.028	.11	-0.25	.802	-.244	.189	
SIZE	0	0	-0.53	.598	0	0	
PROF	-.002	.003	-0.70	.486	-.007	.003	
LEV	-2.091	.224	-9.32	0	-2.531	-1.651	***
GROW	0	.001	0.35	.726	-.002	.003	

LIQ	-.008	.025	-0.32	.75	-.058	.042	
DUM_MAN	.036	.059	0.61	.542	-.08	.152	
DUM_FTSE	-.25	.066	-3.81	0	-.379	-.121	***
IND1	-.017	.095	-0.18	.855	-.203	.168	
IND2	-.018	.1	-0.18	.857	-.215	.179	
IND3	-.003	.094	-0.03	.978	-.187	.182	
IND4	.004	.097	0.04	.965	-.187	.195	
o	0	.	.	.	.	.	
Constant	.153	.747	0.20	.838	-1.313	1.62	

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,20

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	.004	.025	0.15	.882	-.045	.052	
ELKAM	.091	.023	3.97	0	.046	.136	***
IBOD	.003	.002	1.57	.116	-.001	.007	
BOEX	0	.002	0.00	.998	-.003	.003	
BOA	-.006	.005	-1.18	.24	-.016	.004	
INDAC	0	.001	-0.03	.974	-.003	.003	
AUCEX	.002	.002	0.94	.346	-.002	.006	
AUCA	-.003	.005	-0.60	.55	-.014	.007	
EXAIND	.051	.181	0.28	.777	-.304	.407	
EXAEX	-.036	.012	-2.88	.004	-.06	-.011	***
EXAA	0	0	2.79	.005	0	0	***
SWITCH	.022	.095	0.23	.82	-.165	.208	
SIZE	0	0	-1.17	.244	0	0	
PROF	-.002	.002	-0.93	.355	-.007	.002	
LEV	-1.904	.193	-9.86	0	-2.283	-1.525	***
GROW	0	.001	0.27	.788	-.002	.002	
LIQ	-.026	.022	-1.17	.241	-.069	.017	
DUM_MAN	.037	.051	0.72	.472	-.063	.136	
DUM_FTSE	-.207	.057	-3.66	0	-.318	-.096	***
IND1	.119	.081	1.46	.143	-.041	.279	
IND2	-.023	.086	-0.26	.791	-.192	.146	
IND3	.021	.081	0.26	.792	-.137	.18	
IND4	.019	.084	0.23	.82	-.145	.183	
o	0	.	.	.	.	.	
Constant	.386	.643	0.60	.548	-.876	1.649	

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,25

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	.004	.024	0.16	.875	-.043	.051	
ELKAM	.08	.022	3.62	0	.037	.123	***
IBOD	.003	.002	1.77	.077	0	.007	*
BOEX	-.001	.002	-0.93	.353	-.004	.002	
BOA	-.003	.005	-0.63	.526	-.013	.007	
INDAC	.001	.001	0.55	.582	-.002	.003	
AUCEX	.002	.002	1.02	.309	-.002	.006	
AUCA	-.008	.005	-1.46	.143	-.018	.003	
EXAIND	.014	.175	0.08	.935	-.329	.357	
EXAEX	-.054	.012	-4.51	0	-.078	-.03	***
EXAA	0	0	2.58	.01	0	0	***
SWITCH	-.007	.092	-0.07	.943	-.187	.173	
SIZE	0	0	-1.55	.122	0	0	
PROF	-.003	.002	-1.30	.192	-.007	.001	
LEV	-1.594	.186	-8.56	0	-1.96	-1.229	***

GROW	0	.001	0.08	.938	-.002	.002	
LIQ	-.033	.021	-1.56	.118	-.074	.008	
DUM_MAN	.033	.049	0.67	.506	-.064	.129	
DUM_FTSE	-.182	.055	-3.34	.001	-.29	-.075	***
IND1	.175	.079	2.23	.026	.021	.33	**
IND2	.016	.083	0.19	.85	-.147	.179	
IND3	.024	.078	0.31	.759	-.129	.177	
IND4	.091	.081	1.12	.262	-.068	.249	
o	0	.	.	.	.	.	
Constant	.609	.621	0.98	.327	-.609	1.827	

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,30

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.011	.021	-0.53	.596	-.052	.03	
ELKAM	.078	.019	4.06	0	.04	.115	***
IBOD	.003	.002	1.80	.072	0	.006	*
BOEX	-.002	.001	-1.21	.225	-.004	.001	
BOA	-.007	.004	-1.63	.104	-.015	.001	
INDAC	0	.001	0.28	.778	-.002	.003	
AUCEX	0	.002	-0.26	.796	-.004	.003	
AUCA	-.006	.004	-1.32	.187	-.015	.003	
EXAIND	-.076	.151	-0.50	.617	-.373	.221	
EXAEX	-.053	.01	-5.14	0	-.074	-.033	***
EXAA	0	0	2.80	.005	0	0	***
SWITCH	.015	.079	0.18	.854	-.141	.17	
SIZE	0	0	-1.86	.063	0	0	*
PROF	-.003	.002	-1.72	.086	-.007	0	*
LEV	-1.334	.161	-8.27	0	-1.651	-1.017	***
GROW	0	.001	-0.24	.813	-.002	.001	
LIQ	-.032	.018	-1.74	.083	-.068	.004	*
DUM_MAN	.017	.042	0.39	.697	-.067	.1	
DUM_FTSE	-.166	.047	-3.52	0	-.259	-.074	***
IND1	.176	.068	2.58	.01	.042	.309	***
IND2	0	.072	-0.01	.996	-.142	.141	
IND3	.031	.068	0.46	.646	-.101	.164	
IND4	.172	.07	2.46	.014	.035	.309	**
o	0	.	.	.	.	.	
Constant	1.176	.538	2.19	.029	.121	2.231	**

Mean dependent var	0.001	SD dependent var	1.000

*** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,35

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.014	.021	-0.66	.511	-.055	.027	
ELKAM	.075	.019	3.87	0	.037	.114	***
IBOD	.004	.002	2.30	.022	.001	.007	**
BOEX	-.002	.001	-1.40	.161	-.004	.001	
BOA	-.009	.004	-2.01	.045	-.017	0	**
INDAC	0	.001	0.04	.965	-.002	.002	
AUCEX	0	.002	-0.20	.843	-.004	.003	
AUCA	-.005	.005	-1.18	.237	-.014	.004	
EXAIND	-.1	.154	-0.65	.517	-.402	.202	
EXAEX	-.01	.011	-0.90	.368	-.03	.011	
EXAA	0	0	2.59	.01	0	0	***
SWITCH	.074	.081	0.92	.358	-.084	.233	

SIZE	0	0	-2.05	.04	0	0	**
PROF	-.003	.002	-1.47	.142	-.007	.001	
LEV	-1.092	.164	-6.65	0	-1.414	-.77	***
GROW	-.001	.001	-0.67	.505	-.002	.001	
LIQ	-.029	.019	-1.56	.12	-.065	.008	
DUM_MAN	.003	.043	0.06	.948	-.082	.088	
DUM_FTSE	-.161	.048	-3.35	.001	-.255	-.067	***
IND1	.155	.069	2.24	.025	.019	.291	**
IND2	-.042	.073	-0.57	.569	-.186	.102	
IND3	.023	.069	0.33	.742	-.112	.157	
IND4	.146	.071	2.05	.04	.007	.286	**
o	0	.	.	.	.	.	
Constant	1.296	.547	2.37	.018	.223	2.369	**

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,40

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.024	.023	-1.07	.284	-.069	.02	
ELKAM	.062	.021	2.98	.003	.021	.104	***
IBOD	.005	.002	2.74	.006	.001	.009	***
BOEX	-.002	.001	-1.13	.26	-.004	.001	
BOA	-.007	.005	-1.38	.167	-.016	.003	
INDAC	0	.001	0.30	.761	-.002	.003	
AUCEX	0	.002	-0.19	.85	-.004	.003	
AUCA	-.004	.005	-0.72	.472	-.013	.006	
EXAIND	-.14	.166	-0.85	.398	-.466	.185	
EXAEX	0	.011	-0.04	.968	-.023	.022	
EXAA	0	0	2.04	.042	0	0	**
SWITCH	.057	.087	0.65	.516	-.114	.227	
SIZE	0	0	-1.74	.083	0	0	*
PROF	-.003	.002	-1.60	.111	-.008	.001	
LEV	-.961	.177	-5.44	0	-1.308	-.615	***
GROW	-.001	.001	-0.68	.499	-.002	.001	
LIQ	-.03	.02	-1.50	.134	-.069	.009	
DUM_MAN	-.004	.047	-0.09	.931	-.095	.087	
DUM_FTSE	-.156	.052	-3.01	.003	-.258	-.054	***
IND1	.16	.075	2.15	.032	.014	.307	**
IND2	-.084	.079	-1.07	.287	-.239	.071	
IND3	.122	.074	1.64	.101	-.024	.267	
IND4	.136	.077	1.77	.077	-.015	.286	*
o	0	.	.	.	.	.	
Constant	.919	.589	1.56	.119	-.238	2.075	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,45

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.037	.023	-1.61	.107	-.082	.008	
ELKAM	.058	.021	2.70	.007	.016	.099	***
IBOD	.005	.002	2.70	.007	.001	.009	***
BOEX	-.001	.001	-0.47	.64	-.004	.002	
BOA	-.008	.005	-1.70	.09	-.017	.001	*
INDAC	0	.001	-0.09	.928	-.003	.002	
AUCEX	0	.002	0.25	.8	-.003	.004	
AUCA	-.006	.005	-1.12	.264	-.015	.004	
EXAIND	-.058	.168	-0.35	.729	-.389	.272	

EXAEX	-.006	.012	-0.53	.595	-.029	.017	
EXAA	0	0	1.67	.095	0	0	*
SWITCH	.042	.088	0.48	.633	-.131	.216	
SIZE	0	0	-1.68	.093	0	0	*
PROF	-.002	.002	-1.06	.288	-.007	.002	
LEV	-.79	.18	-4.40	0	-1.142	-.438	***
GROW	-.001	.001	-1.19	.234	-.003	.001	
LIQ	-.03	.02	-1.48	.138	-.07	.01	
DUM_MAN	-.003	.047	-0.07	.947	-.096	.09	
DUM_FTSE	-.151	.053	-2.87	.004	-.254	-.048	***
IND1	.156	.076	2.06	.039	.008	.305	**
IND2	-.132	.08	-1.64	.101	-.289	.026	
IND3	.213	.075	2.84	.005	.066	.361	***
IND4	.136	.078	1.75	.08	-.016	.289	*
o	0	.	.	.	.	.	
Constant	1.171	.598	1.96	.05	-.002	2.345	*

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,50

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.043	.024	-1.83	.067	-.089	.003	*
ELKAM	.042	.022	1.91	.056	-.001	.084	*
IBOD	.005	.002	2.79	.005	.002	.009	***
BOEX	0	.001	-0.26	.796	-.003	.003	
BOA	-.008	.005	-1.66	.096	-.018	.001	*
INDAC	0	.001	-0.33	.739	-.003	.002	
AUCEX	.001	.002	0.53	.593	-.003	.005	
AUCA	-.009	.005	-1.72	.086	-.019	.001	*
EXAIND	.061	.172	0.36	.722	-.276	.398	
EXAEX	-.014	.012	-1.21	.228	-.037	.009	
EXAA	0	0	1.34	.18	0	0	
SWITCH	.062	.09	0.69	.491	-.115	.239	
SIZE	0	0	-1.30	.193	0	0	
PROF	-.004	.002	-1.73	.083	-.008	.001	*
LEV	-.449	.183	-2.45	.015	-.809	-.089	**
GROW	-.001	.001	-1.16	.245	-.003	.001	
LIQ	-.028	.021	-1.36	.175	-.069	.013	
DUM_MAN	.009	.048	0.19	.85	-.086	.104	
DUM_FTSE	-.162	.054	-3.02	.003	-.267	-.057	***
IND1	.131	.077	1.69	.092	-.021	.282	*
IND2	-.142	.082	-1.74	.083	-.303	.019	*
IND3	.248	.077	3.23	.001	.097	.398	***
IND4	.174	.079	2.19	.028	.018	.33	**
o	0	.	.	.	.	.	
Constant	1.35	.611	2.21	.027	.151	2.548	**

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,55

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.064	.024	-2.71	.007	-.11	-.018	***
ELKAM	.027	.022	1.26	.21	-.015	.07	
IBOD	.005	.002	2.88	.004	.002	.009	***
BOEX	-.001	.001	-0.41	.681	-.004	.002	
BOA	-.01	.005	-2.12	.034	-.02	-.001	**
INDAC	-.001	.001	-0.39	.696	-.003	.002	

AUCEX	0	.002	0.09	.931	-.004	.004	
AUCA	-.008	.005	-1.50	.134	-.017	.002	
EXAIND	.04	.172	0.23	.817	-.297	.377	
EXAEX	-.017	.012	-1.42	.155	-.04	.006	
EXAA	0	0	1.09	.276	0	0	
SWITCH	.041	.09	0.46	.648	-.136	.218	
SIZE	0	0	-1.34	.181	0	0	
PROF	-.004	.002	-1.98	.048	-.009	0	**
LEV	-.177	.183	-0.97	.333	-.537	.182	
GROW	-.001	.001	-1.38	.169	-.003	.001	
LIQ	-.012	.021	-0.59	.557	-.053	.029	
DUM_MAN	.004	.048	0.08	.935	-.091	.099	
DUM_FTSE	-.161	.054	-3.00	.003	-.266	-.056	***
IND1	.109	.077	1.41	.16	-.043	.26	
IND2	-.154	.082	-1.88	.06	-.314	.007	*
IND3	.287	.077	3.75	0	.137	.438	***
IND4	.206	.079	2.59	.01	.05	.361	***
o	0	.	.	.	.	.	
Constant	1.594	.61	2.61	.009	.397	2.792	***

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,60

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.082	.027	-3.04	.002	-.136	-.029	***
ELKAM	.024	.025	0.97	.335	-.025	.073	
IBOD	.006	.002	2.60	.01	.001	.01	***
BOEX	-.001	.002	-0.37	.713	-.004	.003	
BOA	-.011	.006	-1.87	.061	-.022	.001	*
INDAC	-.001	.002	-0.46	.645	-.004	.002	
AUCEX	.001	.002	0.57	.568	-.003	.006	
AUCA	-.008	.006	-1.31	.191	-.019	.004	
EXAIND	.109	.198	0.55	.582	-.28	.498	
EXAEX	-.02	.014	-1.49	.136	-.047	.006	
EXAA	0	0	0.76	.449	0	0	
SWITCH	.026	.104	0.25	.803	-.178	.23	
SIZE	0	0	-1.12	.264	0	0	
PROF	-.005	.003	-1.86	.063	-.01	0	*
LEV	.212	.211	1.00	.316	-.203	.627	
GROW	-.002	.001	-1.51	.132	-.004	.001	
LIQ	-.003	.024	-0.13	.893	-.05	.044	
DUM_MAN	.002	.056	0.04	.966	-.107	.112	
DUM_FTSE	-.177	.062	-2.86	.004	-.299	-.056	***
IND1	.062	.089	0.70	.485	-.113	.237	
IND2	-.185	.094	-1.96	.05	-.37	0	*
IND3	.275	.088	3.10	.002	.101	.448	***
IND4	.221	.092	2.41	.016	.041	.401	**
o	0	.	.	.	.	.	
Constant	1.515	.704	2.15	.032	.133	2.896	**

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,65

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.098	.033	-2.98	.003	-.163	-.034	***
ELKAM	.012	.031	0.40	.691	-.048	.072	
IBOD	.005	.003	1.98	.048	0	.01	**

BOEX	-.001	.002	-0.71	.475	-.006	.003	
BOA	-.008	.007	-1.12	.265	-.021	.006	
INDAC	0	.002	0.05	.96	-.004	.004	
AUCEX	.003	.003	1.17	.242	-.002	.008	
AUCA	-.007	.007	-1.02	.307	-.021	.007	
EXAIND	.002	.241	0.01	.993	-.471	.475	
EXAEX	-.019	.017	-1.16	.247	-.052	.013	
EXAA	0	0	1.05	.295	0	0	
SWITCH	-.001	.127	-0.01	.995	-.249	.248	
SIZE	0	0	-1.02	.307	0	0	
PROF	-.004	.003	-1.26	.206	-.01	.002	
LEV	.345	.257	1.34	.18	-.16	.849	
GROW	-.002	.001	-1.56	.119	-.005	.001	
LIQ	.003	.029	0.11	.915	-.054	.06	
DUM_MAN	.001	.068	0.01	.989	-.132	.134	
DUM_FTSE	-.128	.075	-1.70	.09	-.275	.02	*
IND1	-.085	.109	-0.79	.431	-.298	.127	
IND2	-.316	.115	-2.75	.006	-.542	-.091	***
IND3	.144	.108	1.33	.183	-.068	.355	
IND4	.109	.112	0.98	.329	-.11	.328	
o	0	.	.	.	.	.	
Constant	1.384	.857	1.62	.107	-.297	3.066	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,70

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.101	.036	-2.79	.005	-.173	-.03	***
ELKAM	.018	.034	0.53	.593	-.048	.084	
IBOD	.007	.003	2.30	.022	.001	.012	**
BOEX	-.002	.002	-0.88	.382	-.006	.002	
BOA	-.007	.008	-0.90	.369	-.022	.008	
INDAC	0	.002	-0.12	.901	-.004	.004	
AUCEX	.003	.003	0.86	.389	-.003	.008	
AUCA	-.011	.008	-1.43	.154	-.026	.004	
EXAIND	-.005	.265	-0.02	.985	-.525	.516	
EXAEX	-.028	.018	-1.56	.118	-.064	.007	
EXAA	0	0	0.76	.447	0	0	
SWITCH	.023	.139	0.16	.871	-.251	.296	
SIZE	0	0	-1.29	.198	0	0	
PROF	-.002	.003	-0.60	.551	-.009	.005	
LEV	1	.283	3.53	0	.445	1.554	***
GROW	-.003	.002	-2.16	.031	-.006	0	**
LIQ	.005	.032	0.14	.885	-.058	.067	
DUM_MAN	.017	.074	0.23	.822	-.129	.163	
DUM_FTSE	-.131	.083	-1.59	.113	-.294	.031	
IND1	-.107	.119	-0.90	.369	-.341	.127	
IND2	-.291	.126	-2.30	.021	-.539	-.043	**
IND3	.072	.118	0.61	.541	-.16	.305	
IND4	.117	.123	0.96	.339	-.123	.358	
o	0	.	.	.	.	.	
Constant	1.648	.942	1.75	.081	-.201	3.497	*

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,75

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig

AlKAM	-.09	.039	-2.31	.021	-.166	-.014	**
ELKAM	.032	.036	0.89	.372	-.038	.102	
IBOD	.005	.003	1.51	.132	-.001	.011	
BOEX	-.001	.002	-0.49	.621	-.006	.004	
BOA	-.005	.008	-0.57	.569	-.02	.011	
INDAC	.001	.002	0.58	.563	-.003	.006	
AUCEX	.002	.003	0.78	.434	-.004	.009	
AUCA	-.007	.008	-0.88	.379	-.024	.009	
EXAIND	.098	.283	0.35	.729	-.457	.653	
EXAEX	-.032	.019	-1.65	.099	-.07	.006	*
EXAA	0	0	0.34	.733	0	0	
SWITCH	.046	.149	0.31	.758	-.246	.337	
SIZE	0	0	-1.76	.078	0	0	*
PROF	-.004	.004	-1.01	.31	-.011	.003	
LEV	1.948	.302	6.46	0	1.356	2.54	***
GROW	-.004	.002	-2.35	.019	-.007	-.001	**
LIQ	.009	.034	0.26	.796	-.058	.076	
DUM_MAN	-.033	.079	-0.42	.675	-.189	.123	
DUM_FTSE	-.065	.088	-0.73	.465	-.238	.109	
IND1	-.186	.127	-1.46	.143	-.436	.063	
IND2	-.267	.135	-1.99	.047	-.532	-.003	**
IND3	.083	.126	0.66	.511	-.165	.331	
IND4	.086	.131	0.66	.509	-.17	.343	
o	0	.	.	.	.	.	
Constant	.902	1.005	0.90	.37	-1.071	2.874	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,80

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.09	.039	-2.28	.023	-.167	-.013	**
ELKAM	.063	.036	1.74	.082	-.008	.134	*
IBOD	.005	.003	1.59	.111	-.001	.011	
BOEX	-.001	.002	-0.57	.571	-.006	.003	
BOA	.001	.008	0.09	.926	-.015	.017	
INDAC	.001	.002	0.48	.632	-.003	.005	
AUCEX	.003	.003	0.96	.339	-.003	.009	
AUCA	-.01	.008	-1.14	.254	-.026	.007	
EXAIND	.193	.287	0.67	.502	-.37	.755	
EXAEX	-.032	.02	-1.61	.108	-.07	.007	
EXAA	0	0	0.11	.913	0	0	
SWITCH	.003	.151	0.02	.987	-.293	.298	
SIZE	0	0	-2.29	.022	0	0	**
PROF	-.003	.004	-0.76	.446	-.01	.004	
LEV	2.485	.306	8.13	0	1.885	3.085	***
GROW	-.005	.002	-2.84	.005	-.008	-.001	***
LIQ	.009	.035	0.25	.801	-.059	.077	
DUM_MAN	-.045	.081	-0.56	.576	-.203	.113	
DUM_FTSE	-.071	.09	-0.79	.431	-.246	.105	
IND1	-.177	.129	-1.37	.171	-.43	.076	
IND2	-.202	.137	-1.48	.14	-.469	.066	
IND3	.187	.128	1.46	.144	-.064	.438	
IND4	.173	.133	1.31	.192	-.087	.433	
o	0	.	.	.	.	.	
Constant	.393	1.019	0.39	.7	-1.607	2.392	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,85

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.136	.046	-2.96	.003	-.227	-.046	***
ELKAM	.091	.043	2.15	.032	.008	.175	**
IBOD	.003	.004	0.68	.499	-.005	.01	
BOEX	-.003	.003	-1.00	.32	-.009	.003	
BOA	.006	.01	0.58	.564	-.013	.024	
INDAC	.002	.003	0.65	.519	-.003	.007	
AUCEX	.004	.004	1.15	.25	-.003	.012	
AUCA	-.007	.01	-0.67	.503	-.026	.013	
EXAIND	.236	.337	0.70	.484	-.425	.896	
EXAEX	-.035	.023	-1.53	.125	-.081	.01	
EXAA	0	0	-0.09	.931	0	0	
SWITCH	.087	.177	0.49	.623	-.26	.433	
SIZE	0	0	-2.43	.015	0	0	**
PROF	-.009	.004	-2.17	.03	-.018	-.001	**
LEV	3.017	.359	8.41	0	2.313	3.721	***
GROW	-.002	.002	-1.18	.239	-.006	.001	
LIQ	.013	.041	0.31	.756	-.067	.092	
DUM_MAN	-.049	.094	-0.52	.606	-.234	.137	
DUM_FTSE	-.03	.105	-0.29	.775	-.236	.176	
IND1	-.223	.151	-1.47	.141	-.52	.074	
IND2	-.245	.16	-1.53	.127	-.559	.07	
IND3	.223	.15	1.49	.138	-.072	.518	
IND4	.195	.156	1.26	.209	-.11	.501	
o	0	.	.	.	.	.	
Constant	-.144	1.196	-0.12	.904	-2.49	2.201	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,90

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.163	.051	-3.22	.001	-.262	-.064	***
ELKAM	.086	.047	1.84	.066	-.006	.178	*
IBOD	.001	.004	0.35	.727	-.007	.009	
BOEX	-.004	.003	-1.11	.268	-.01	.003	
BOA	.01	.01	0.91	.361	-.011	.03	
INDAC	.002	.003	0.84	.402	-.003	.008	
AUCEX	.006	.004	1.42	.157	-.002	.014	
AUCA	-.004	.011	-0.41	.681	-.026	.017	
EXAIND	.003	.37	0.01	.993	-.723	.729	
EXAEX	-.036	.025	-1.41	.159	-.086	.014	
EXAA	0	0	-0.39	.696	0	0	
SWITCH	.109	.194	0.56	.573	-.272	.491	
SIZE	0	0	-2.67	.008	0	0	***
PROF	-.008	.005	-1.64	.102	-.017	.002	
LEV	3.637	.395	9.22	0	2.863	4.412	***
GROW	-.003	.002	-1.21	.226	-.007	.002	
LIQ	.01	.045	0.23	.818	-.077	.098	
DUM_MAN	-.032	.104	-0.31	.755	-.236	.171	
DUM_FTSE	.164	.116	1.42	.157	-.063	.39	
IND1	-.28	.166	-1.68	.093	-.607	.047	*
IND2	-.281	.176	-1.60	.111	-.627	.065	
IND3	.18	.165	1.09	.277	-.145	.504	
IND4	.075	.171	0.44	.66	-.26	.411	
o	0	.	.	.	.	.	
Constant	-.478	1.315	-0.36	.716	-3.058	2.102	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Regression Results Quantile 0,95

REM_PCA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
AlKAM	-.247	.081	-3.06	.002	-.406	-.089	***
ELKAM	.083	.075	1.11	.269	-.064	.229	
IBOD	0	.007	-0.07	.944	-.013	.012	
BOEX	-.006	.005	-1.20	.23	-.016	.004	
BOA	.012	.017	0.69	.489	-.021	.044	
INDAC	.003	.005	0.68	.495	-.006	.012	
AUCEX	.008	.007	1.22	.224	-.005	.021	
AUCA	.002	.017	0.11	.915	-.032	.036	
EXAIND	.051	.59	0.09	.932	-1.106	1.207	
EXAEX	-.036	.04	-0.89	.372	-.115	.043	
EXAA	0	0	-0.96	.336	0	0	
SWITCH	.043	.31	0.14	.891	-.565	.65	
SIZE	0	0	-1.86	.063	0	0	*
PROF	-.005	.008	-0.60	.55	-.02	.01	
LEV	4.571	.629	7.27	0	3.338	5.805	***
GROW	-.003	.003	-0.97	.331	-.01	.003	
LIQ	.012	.071	0.17	.866	-.128	.152	
DUM_MAN	.058	.166	0.35	.725	-.267	.383	
DUM_FTSE	.343	.184	1.87	.062	-.018	.705	*
IND1	-.306	.265	-1.15	.249	-.826	.215	
IND2	-.363	.281	-1.29	.196	-.914	.188	
IND3	.954	.263	3.63	0	.438	1.471	***
IND4	-.124	.273	-0.45	.649	-.659	.411	
o	0	.	.	.	.	.	
Constant	-1.036	2.095	-0.49	.621	-5.146	3.075	

Mean dependent var	0.001	SD dependent var	1.000

**** p<.01, ** p<.05, * p<.1*

Where: AEM_MJM = Accrual-Based Earnings Management using the Modified Jones Model, REM_PCA = Real Earnings Activities using the Principal Component Analysis method, ALKAM= number of KAMs related to accounting-level risks disclosed in the audited report, ELKAM = number of KAMs related to entity-level risks disclosed in the audited report, NB_KAM = quantity of key audit matters and is measured as the number of risks of material misstatement disclosed in the audited report, IBOD = Independence of Board of Directors and is measured as the number of independent nonexecutive directors divided by total number of board of directors in the firm, BOEX= Board Expertise and is measured as the proportion of experienced board in accounting or related financial management on the total numbers of board members, BOA= Board of Directors Activity and is measured as the number of board of directors' meetings held in a year, INDAC = Independence of Audit Committees and is measured as the number of independent nonexecutive directors on the audit committee divided by the total number of audits committee members, AUCEX = Audit Committee Expertise and is measured as the proportion of experienced audit members in accounting or related financial management on the total members of the audit committee, AUCA = Audit Committee Activity and is measured as the average number of audit committee meetings held in a year, EXAIND = External Auditor's audit quality and represents external auditor' s independence which is measured as dummy variable of (Big 4) that takes the value of 1 when a listed firm is audited by KPMG, PwC, Deloitte, or EY and 0 otherwise, EXAEX = External Auditor's Industry Expertise used to assess the effect of KAMs disclosed by auditors' industry specialist on EM, which takes the value (1) when the incumbent auditor is an expert in the industry where their clients operate and the value (0) otherwise, EXAA = External Auditor's Activity that represents external auditor' s activity which is measured as the total fees paid by the firm to the auditing company for their auditing services. SIZE = Firm Size and is measured by the Logarithm of total assets at the year-end. PROF = Profitability and is measured by return on assets (ROA) which is calculated as net income divided by lagged total assets. LEV = Leverage and is measures as the total liabilities divided by total asset at the end of the financial year. GROW = Growth and is measured by market to-book ratio (MBV) which is used as a proxy to control for a firm's growth. LIQ = liquidity and is measured as the ratio of current assets divided by current liabilities at the end of the financial year. DUM_MAN = Dummy Variable for Mandatory implementation takes the value 1 if the year of KAM disclosure is mandatory and takes the value 0 if the year is voluntary. DUM_SWITCH = auditor's Switch and it takes the value 1 if the client has changed its external auditor since the previous year and takes the value 0 otherwise. DUM_YEAR= Dummy variable for year and represents the set of dichotomous year dummies, IND1 = Manufacturing, IND2 = Agriculture, Forestry and Fishing, Mining and Quarrying Plus Construction, IND3 = Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles Plus Transportation and Storage, IND4 = Electricity, Gas, Steam and Air Conditioning Supply, Water Supply; Sewerage, Waste Management and Remediation Activities, Accommodation and Food Service Activities, Information and Communication Plus Arts, Entertainment and Recreation, IND5 = Real Estate Activities; Professional, Scientific and Technical Activities; Administrative and Support Service Activities Plus Public Administration and Defence; Compulsory Social Security.