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An Empirical Analysis of Key Audit Matters

in the Financial Industry

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An Empirical Analysis of Key Audit Matters in the Financial Industry

Working Paper19/01

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Abbreviations

ACCA	Association of Chartered Certified Accountants
ECB	European Central Bank
EM	Earnings Management
EQ	Earnings Quality
EU	European Union
FITL	Financial Instruments to Total Loans
FRC	Financial Reporting Council
FTSE	Financial Times Stock Exchange
FVA	Fair Value Accounting
FVFI	Fair Value of Financial Instruments
GDP	Gross Domestic Product
IAASB	International Auditing and Assurance Standard Board
IASB	International Accounting Standard Board
ISA	International Standard on Auditing
IFAC	International Federation of Accountants
IFRS	International Financial Reporting Standard
KAM	Key Audit Matters
LLP	Loan Loss Provision
ML	Maximum Likelihood
OCR	Optical Character Recognition
OLS	Ordinary Least Squares
PIE	Public Interest Entity
PIOB	The Public Interest Oversight Board
SME	Small and Medium-Sized Enterprise
UK	United Kingdom
US	United States

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1. Introduction

1.1. Motivation

The most recent financial crisis shook the financial sector down to its foundation and is described as one of the worst since the Great Depression in the 1930's.² The crisis provided transparency into a once occulted reality, and thus revealed how excess risk-taking lead to the instability of the financial system and outlined the interconnection between the different institutions over the interbank market.^{3,4}

In the twelve months following the financial crisis, the European governments spent €4.589 billion (representing 39% of the European Union member states' GDP) to help banks and prevent a complete breakdown of the financial system. In the immediate aftermath of the financial crisis, the main focus was put on the salvaged banks, hedge funds, rating agencies, supervisors, and central banks.⁵ However, the fact that governments had to bailout banks that were given clean audit reports by their respective auditors between 2007 and 2009 adjusted the lens of how the crisis was being perceived.⁶

Both regulators, the European Union (EU) as well as the International Auditing and Assurance Standards Board (IAASB), revisited the audit report in response and made amendments to their legislations. Instead of attempting to narrow the expectation gap, the regulators rather focused on the information gap between the auditor and the reader. The expectation gap can be explained as the variance between the theoretical expectations of the reader contrasted with the actual reality of the process. The information gap relates to the gap between the information a reader demands in order to make informed investment decisions and the information that is available in the audited financial statements.⁷

The information gap is thought to be narrowed after the implementation of a Key Audit Matters (KAM) section in the independent auditor's report. KAM can be best described as "*those matters that keep the auditor awake at night*"⁸, and typically are new, complex

² cf. Barrell and Davis (2008) p.1

³ cf. Barrell and Davis (2008) p.6

⁴ cf. Seager (09/29/2008)

⁵ cf. European Commission (2011) p.2

⁶ cf. European Commission (2010) p.4

⁷ cf. Vanstraelen *et al.* (2011) p. 6

⁸ Leibfried (2016) p.2

accounting topics subject to near-absolute management discretion, corporate transactions, or the implications of special situations. The KAM section should not be a simple list of these topics but rather is an in-depth analysis and has now been rendered mandatory for companies based in the EU for the fiscal years 2016 (if a country adopted the International Standard on Auditing) and 2017, respectively.^{9,10}

Since the year 2017 marks the first year in which KAM for all European public interest entities (PIEs) can be observed, there arises the chance to base the investigation on the first KAM reporting cycle for the Eurozone.

1.2. Contribution to Academia

The United Kingdom (UK) and Ireland already implemented the KAM reporting for the fiscal years that started after the 12th of October 2012.¹¹ Therefore, most research results until now are based on the independent auditor's reports of the Financial Times Stock Exchange (FTSE) companies. Furthermore, researchers focus mainly on questions such as how to qualify and quantify KAM data after the application of ISA_{UK&I} 701.^{12,13,14,15,16}

In contrast, this following research focuses on the KAM reporting within a specific sector: the banking sector. It could be done so, since the sample size drastically increased in 2017. This study is seeking to provide answers to two key questions:

1. Are there bank characteristics that influence the reporting of specific KAM?
2. Are there bank characteristics that increase the number of reported KAM?

By emphasizing the effect of a specific company's unique characteristics on the KAM reporting process, this study offers a different approach than what current research addresses so far. The combination of research regarding the individual characteristics with the results of the analysis on reported KAM allows one to build bridges between the auditors' identification process and the informational values of the independent auditor's

⁹ cf. Leibfried (2016) p.2

¹⁰ cf. Federation of European Accountants (2015a) p.2

¹¹ cf. KPMG (2016).

¹² cf. Henselmann and Seebeck (2017).

¹³ cf. Financial Reporting Council (2015).

¹⁴ cf. Financial Reporting Council (2016).

¹⁵ cf. ACCA (2018).

¹⁶ cf. Mazars (2016).

report. The informational value of the KAM reports are important; the results of an eye-tracking study show that the matters reported in the auditor's report influence the readers in their information search and increases the attention to financial statement disclosures mentioned.¹⁷ Furthermore, the use of a quantitative statistical approach guarantees objective results when executed properly.

1.3. Organization of the Research

Chapter 1 puts the topic of KAM into perspective by providing insights into the historic context and presents the main research questions of this work.

Chapter 2 introduces the regulations that implement KAM in the auditor's reports for PIEs in the EU and an explanation of the reporting requirements.

Chapter 3 comprises a review of the relevant literature and a focus on the results of the Financial Reporting Council's analyses of the first and second year reportings in both the UK and Ireland. The block concludes with the introduction of the hypotheses that are subsequently examined in the later stages.

Chapter 4 explains the empirical approach starting with the selection process for the sample, followed by the build-up of the database, the statistical model, and the independent variables.

Chapter 5 presents the results of the statistical test of the hypotheses and is thus the centre piece of this work. After each of the different regressions, an in-depth interpretation is affiliated.

This work finalises with Chapter 6, which contains a summary of the results and some concluding words.

¹⁷ cf. Sirois *et al.* (2018) p.2

2. Regulatory Background for Key Audit Matters

2.1. The European Union's Statutory Audit Directive

There have always been discussions about amending the Statutory Audit Directive (2006/43/EC) by the EU.^{18,19} After the events of the financial crisis in 2008, politicians were quick to highlight shortcomings in the audit system, as auditors failed to deliver reliable audited financial statements for companies with intrinsic weaknesses in their financial health. The reason for this failure was said to be a conflict of interest and an overly concentrated market at the top-end.^{20,21} This concentration led to a lack of competition as an investigation initiated by the House of Lords in the UK found out. Only one company within the FTSE 100 was audited by a non-Big Four²² auditor and companies generally change their auditor only once every 48 years.²³

In response to the troubles, the EU finally followed through with their new audit legislation. They passed a new directive (2014/56/EU) as well as a new regulation (537/2014/EU) which both were implemented on June 16th 2014. The member states had time until June 17th 2016 to adopt measures necessary to get up to par in compliance.²⁴

The main goal of both the directive and the regulation is to bolster the public trust in the auditors. Michel Barnier, the European Commissioner for Internal Market and Services suggested: *“Investor confidence in audit has been shaken by the crisis and I believe changes in this sector are necessary.”*²⁵

In the aim to secure the public trust, four key elements were covered within the new policy framework:

1. 10-year mandatory audit firm rotation for all PIEs in the EU which can be extended once for an additional period of up to 14 years under discretion of each member state. PIEs are defined as a) all entities governed by the law of a member

¹⁸ cf. European Commission (2014) pp.1-2

¹⁹ cf. PwC (2014a) p.3

²⁰ cf. European Commission (11/30/2011) p.1

²¹ cf. Sikka (2009) pp.1-4

²² Big Four stands for the four biggest auditors in the world – Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers

²³ cf. Jones (03/30/2011).

²⁴ cf. Federation of European Accountants (2015a) p.2

²⁵ European Commission (11/30/2011) p.1

state and listed on a stock exchange; b) all credit institutions in the EU no matter of the place they are listed at; c) all insurance undertakings in the EU, irrespective of the insurance type or listing; d) all entities that are designated as PIE by the member state.²⁶

2. Restrictions on non-audit services to PIE auditor clientele such as tax services, bookkeeping services, valuation services, and more. In general, all services that might give rise to a conflict of interest are curbed. All services that are not prohibited can be further conducted but are subject to a cap of 70% of the total average fees earned at the PIE in the last three years.²⁷
3. The role and responsibilities of the audit committee; though already in place in most companies on a voluntary basis, the policy framework now makes this a must for all PIEs. The audit committee's main responsibilities are the surveillance of the financial reporting process, the monitoring of audits, the selection of the auditor, and the monitoring of the statutory auditor's independence.²⁸
4. Auditors reporting minimum requirements; under the new policy the independent auditor's report has to contain: a) information by whom the statutory auditor was appointed; b) the date of appointment; c) information on the most significant assessed risks of material misstatement, how those risks got assessed and key observations arising from those risks; d) explanations about the auditor's capacity to detect irregularities; e) confirmation of the auditor's consistency between audit opinion and report to the audit committee; f) declaration that none of the prohibited non-audit services mentioned before were not performed; g) list of all services in addition to the statutory audit that were performed by the statutory auditor in the respective PIE.²⁹

The EU framework acts as exactly such, covering the basics and each member state might include more specifics in certain instances. This working paper looks to focus on the risk assessment procedure (see 4c) in regard to the two questions. In combination with Article 21 of Directive 2014/56/EU, which states that

²⁶ cf. KPMG (2014) p.2

²⁷ cf. KPMG (2014) p.5-7

²⁸ cf. KPMG (2014) p.9

²⁹ cf. KPMG (2014) p.13-16

“Member States shall require statutory auditors and audit firms to carry out statutory audits in compliance with international auditing standards adopted by the Commission”³⁰,

it can be regarded as the regulatory rationale to report KAM in the form they can be found in the annual reports nowadays. The international auditing standards in this context are later defined by the EU as the ISA set by the International Auditing and Assurance Standards Board (IAASB).^{31,32}

2.2. The International Standard on Auditing

The IAASB is an independent standard setter that serves the public by setting the high-quality ISA. The IAASB is a member of the International Federation of Accountants (IFAC) but is not legally bound to IFAC’s governing bodies with regard to the standard setting process. The supervision of the IAASB falls in the responsibility of The Public Interest Oversight Board (PIOB), an independent organisation of members that are audit practitioners.³³

Section 2.1 outlines the new auditing frameworks, Directive 2014/56/EU and Regulation 537/2014/EU, which increase the importance of the ISA and hence the IAASB for the auditing process. Many EU states have already adopted the ISA on a voluntary basis, even though ISA is not yet adopted by the European Commission and therefore is not obligatory for every member state to comply.

By April 2015, 25 of the 28 EU member states had already adopted the ISA on a national level. The three exceptions that yet have to adopt the ISA are France, Germany and Portugal. Those countries argue that they await the European Commission to take the lead in this regard.³⁴ That is not to say they have no standard frameworks on the national level, and that they do likely still want to keep things close to baseline, as France and Germany use the ISA as a guideline for their own national auditing standards. For France this is the *“Normes d’exercice professionnel”* and for Germany the *“Institut der Wirtschaftsprüfung*

³⁰ European Union (04/16/14) p.16

³¹ cf. European Union (04/16/14) p.16

³² cf. Federation of European Accountants (2015a) p. 7

³³ cf. IFAC (n.d.).

³⁴ cf. Federation of European Accountants (2015b) pp.3-4

Standard”.^{35,36} Nevertheless, until the European Commission adopts the ISA and therefore implements a general auditing standard in the EU, the risk of a lack of harmonisation between the member states exists and the quality of ISA translation mechanisms cannot be fully guaranteed.³⁷

Similar to the EU, the IAASB reacted to the financial crisis in 2008 by amending their standard framework. This was done with the implementation of ISA 700, which defines the new improved structure of the audit report. The idea behind the new structure is to lower the information gap that was heavily criticised for being too big.³⁸ The new structure provides the reader of the auditor report with information about the audit conclusion, the reasons for the conclusion, the going concern, Key Audit Matters, Management responsibility, Auditors responsibility, and declaration according to laws and other regulation.

Whereas the EU directive and regulation enter into force for June 2017 year-ends, the IAASB’s Auditor Reporting standard already becomes effective for the audits of financial statements with periods ending on or after the 15th December 2016.³⁹ Hence, the reporting of KAM is required one year earlier for countries that adopted the ISA as their auditing standard.

KAM disclosure and how information represented needs to be communicated to the reader of annual reports is covered by the new ISA 701 and marks the single biggest change to the auditor’s report. In the following two subchapters 2.2.1 and 2.2.2, the ISA 701 is thoroughly described since it is the foundation of the KAM reporting.

2.2.1. Identification of Key Audit Matters after ISA 701

Before diving into the reporting requirements set out by ISA 701, it is necessary to define what KAM are and how the identification process looks like.

The IAASB defines KAM in the ISA 701 as: ” [...] *Those matters that, in the auditor’s professional judgment, were of most significance in the audit of the financial statements of the current period. Key audit matters are selected from matters communicated with*

³⁵ cf. Federation of European Accountants (2015b) p.9

³⁶ cf. Federation of European Accountants (2015b) p.13

³⁷ cf. Federation of European Accountants (2015b) p.3

³⁸ cf. Vanstraelen *et al.* (2011) p.6

³⁹ cf. IAASB (2016) p.8

those charged with governance."⁴⁰ The IAASB implemented a three-step process within the ISA 701 for the identification of all KAM that fulfil this definition.

In the first step, the auditor needs to identify all matters that are observed or discussed with those responsible for the monitoring of the company.

In the second step, the auditor chooses which matters are deemed significant or require attention. Possible reasons for an issue to be classified as material for the company are:

1. Issues with a higher assessed risk because of higher complexity in recognition requirements. For instance, the recognition of derivatives.
2. The existence of significant management judgement with regard to accounting estimates in the financial statements, that require the auditor to apply significant judgement themselves during the auditing process. Examples in the context of the financial statements of banks are the provisions or impairments of loans and the valuation of Goodwill.
3. Exceptional events or transactions with substantial impact on the audit of the period, such as litigations and acquisitions of companies or loan portfolios

In the third step the auditor chooses from the significant matters identified. According to ISA 701.A29 this could be for example due to the necessity of increased deployment of resources and services for the audit, such as the addition of experts or in-depth analysis usually due to complexity in the accounting standard.⁴¹

The reduction of the significant matters to the Key Audit Matters that are presented in the auditor's report shall prevent an information overload for the reader of the annual report.⁴²

The identification process defined by ISA 701.9 and 701.10 should be regarded as a guideline for auditors. The final decision about which of the matters find their way into the report is subject to the professional judgement of the auditor himself.⁴³

For the visualisation of this funnel-like identification process of KAM by the auditor see Figure 1.

⁴⁰ IAASB (12/15/2016) p.3

⁴¹ cf. IAASB (12/15/2016) p.12

⁴² cf. IAASB (12/15/2016) p.12

⁴³ cf. IAASB (12/15/2016) p.3

Figure 1: Identification of Key Audit Matters⁴⁴



2.2.2. Communication of Key Audit Matters after ISA 701

Now that the KAM identification process is explained and a sense which topics can be regarded as KAM is developed, it is necessary to understand the reporting requirements set out by the IAASB.

The KAM generally have to be reported in a separate section of the auditor's report. The section needs to be named Key Audit Matters or use the official translation of Key Audit Matters respectively, if the report is not in English.⁴⁵

The introduction of the KAM section of the auditor's report should contain the definition of KAM and a brief explanation of the identification process. This information is thought to eliminate misunderstandings about the objective of the KAM reporting for the reader. Additionally, it needs to be stated that the KAM have been audited during the regular audit of the financial statements. Therefore, there is no individual audit result published for the different KAM.⁴⁶

Each individual KAM needs to be highlighted with an appropriate headline and the auditor has to refer to the footnote in the financial statement that is affected by the KAM. For example, the auditor needs to refer to the footnote for loans if a KAM with regard to

⁴⁴ Own source

⁴⁵ cf. IAASB (12/15/2016) pp.3-4

⁴⁶ cf. IAASB (12/15/2016) pp.3-4

impairments of loans is reported. The reference is followed by an explanation of the underlying risks of misstatement for the respective KAM. Keeping in mind the goal of garnering public trust, granularity and transparency are strongly promoted, the reasons for the classification as KAM need to be explained.⁴⁷

After having explained the KAM in detail, the auditor is obliged to provide information on the risk-oriented audit approach in reaction to the identified risk, i.e. audit technique. The standardized structure of the KAM reporting improves the comparability and lowers the information cost for the reader.⁴⁸ Though the KAM reporting has a standardized structure, the content and topics have to be tailored to the individual firm.⁴⁹

The IAASB defines special circumstances in the ISA 701 that allow auditors to exclude identified KAM from the communication, but reasoning must still be provided for the exclusion of an identified KAM, usually manifesting as legal or regulatory requirements that preclude the disclosure of the matter. Another reason for the exclusion can be that the auditor in its professional opinion believes the communication of the KAM is connected to such adverse consequences which outweigh the public benefits through the negative impact.⁵⁰

If the auditor comes to the conclusion that there exists no KAM that need to be communicated, he is obliged to include a statement to this effect within the KAM section of the auditor's report.⁵¹

⁴⁷ cf. IAASB (12/15/2016) p.4

⁴⁸ cf. IAASB (12/15/2016) p.4

⁴⁹ cf. Leibfried (2016) p.2

⁵⁰ cf. IAASB (12/15/2016) p.4

⁵¹ cf. IAASB (12/15/2016) pp. 4-5

3. Literature Review and Hypotheses

3.1. Literature Review

The FRC already implemented KAM reporting for fiscal years that start after 1st October 2012 in the UK and Ireland.⁵² Therefore, the extended auditor reports from the publicly listed companies in the UK are of particular interest for research purposes, since they offered the unique possibility to understand the impact of ISA 701 in advance. There exists a desire to converge both audit standards and processes from a global perspective as an analysis of the stakeholder responses to the IAASB's *Invitation to Comment: Improving the Auditor's Report* shows.⁵³ Thus, it can be assumed that the independent auditor's reports in other Eurozone member states will resemble those in the United Kingdom.

Until now most research focus on topics such as how many KAM are reported, which KAM are reported the most, how ISA 701 changed the word count and the readability of the independent auditor's report, and the quality of the KAM reporting. The scope of the prior research is rather generic without a clear focus on a specific industry, using indices such as the FTSE 350 as their sample.^{54,55,56,57,58}

Figure 2 shows the results of an FRC analysis on the most frequently reported KAM in the first-year audit reports after the implementation of ISA_{UK&I} 701 for the FTSE 350 companies. The values reflect the instances when a risk is being reported and the total number of KAM reported for the sample is 650. The most frequently reported KAM are Impairment of Assets, Tax, Goodwill Impairment, the risk of management override of controls, and the risk of fraud in revenue recognition. These five KAM alone make up 50.7% of the reported KAM for the 31 categories and thus, appear to be of most significance for the auditors in the first year.⁵⁹

⁵² cf. KPMG (2016).

⁵³ cf. Simnett and Huggins (2014) p.1

⁵⁴ cf. Henselmann and Seebeck (2017).

⁵⁵ cf. Financial Reporting Council (2015).

⁵⁶ cf. Financial Reporting Council (2016).

⁵⁷ cf. ACCA (2018).

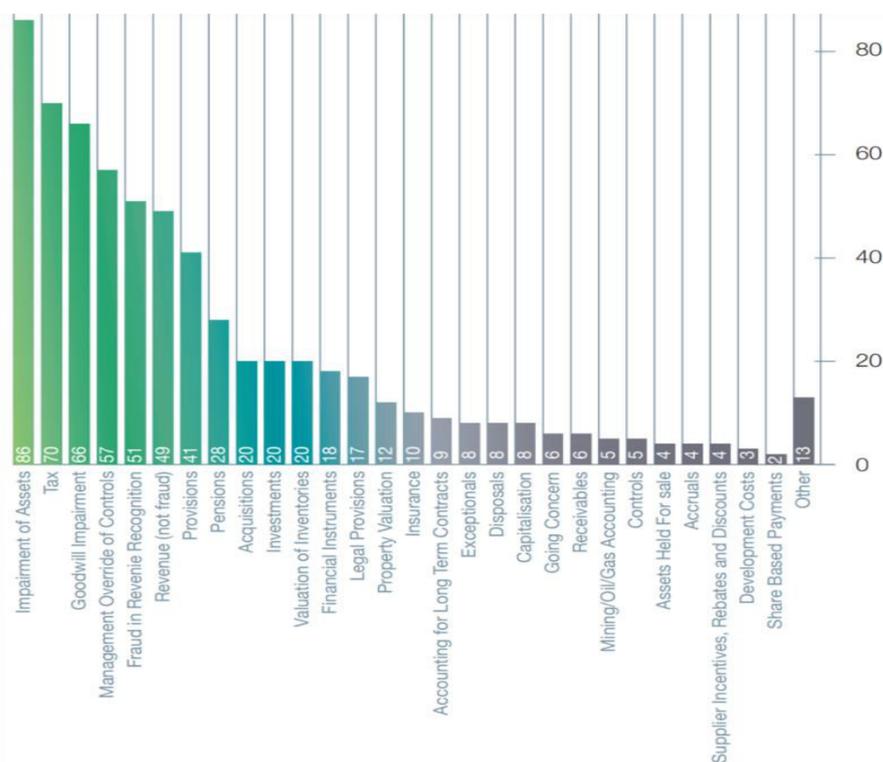
⁵⁸ cf. Mazars (2016).

⁵⁹ cf. Financial Reporting Council (2015) p.18

The Association of Chartered Certified Accountants (ACCA) analyse 560 audit reports⁶⁰ for the year 2016 and find relatively similar results with Impairment of Assets, Revenue recognition, Allowance for doubtful debt, Goodwill impairment, and Taxation considered to be the top five most frequently reported KAM.⁶¹ Hence, three out of the five topics are matching with the findings of the FRC.

The FRC compares the first-year and second-year results in their 2016 report and finds sharp drops in the reporting frequency of KAM regarding impairment of assets, management override of controls, and fraud in revenue recognition. The FRC believes this to be a desirable development since especially the two latter KAM are considered to be too generic and therefore should not be included in a list of company specific risk factors in the first place.⁶²

Figure 2: List of reported risks in the United Kingdom for the fiscal year 2013⁶³



⁶⁰ The audit reports are from Brazil, Cyprus, Kenya, Nigeria, Oman, Romania, South Africa, the UAE and Zimbabwe.

⁶¹ cf. ACCA (2018) p.16

⁶² cf. Financial Reporting Council (2016) p.16

⁶³ Financial Reporting Council (2015) p.18

The average number of KAM reported that the FRC finds is 4.2 for the whole sample and 4.1 for the banking & financial services sector in the first year.⁶⁴ In the second-year analysis the average declines for the banking & financial services sector by 0.6 KAM to 3.5.⁶⁵ The ACCA find even lower results for the banking & financial services sector with only 2.2 average KAM per company.⁶⁶

In their 2016 report, the FRC analyses the quality of the KAM reporting across the auditors Deloitte, EY, KPMG, and PwC by assessing whether auditors avoid using generic wording. It is important to understand that this type of analysis is completely subjective without any quantitative foundation. Nevertheless, the results are still important since they provide some indications with regard to the informational value of the reported KAM. Furthermore, survey gatherings suggest that readers of auditor's reports unsurprisingly prefer firm specific wording over boilerplate language.⁶⁷

Accountancy Europe included into their report of September 2018 at least 62 banks of the European banking sector⁶⁸. Most of them reported under IFRS (59 banks), two banks reported according their national accounting rules and one bank reported under US GAAP. All of the banks are supervised under the Single Supervisory Mechanism (SSM) by the ECB. The top ten main categories represent about 90% of all KAM categories.⁶⁹ The average number of reported KAM is 4,4 while the number of KAM per report differs from 1 KAM (one bank in Germany and one bank in Luxembourg) to 8 KAM (6 banks).⁷⁰

Figure 3 exhibits the results of the analysis regarding the granularity of KAM texts. The results suggest a positive development for most auditors between the first and second year. Whereas the reported KAM by Deloitte, EY, and PwC in the first year were split approximately 50/50 between generic and granular, there is a huge jump in favour of the granularity for the second-year reporting. Especially for the big four audit firms the

⁶⁴ cf. Financial Reporting Council (2015) p.17

⁶⁵ cf. Financial Reporting Council (2016) p.18

⁶⁶ cf. ACCA (2018) p.19

⁶⁷ cf. Financial Reporting Council (2016) p.19

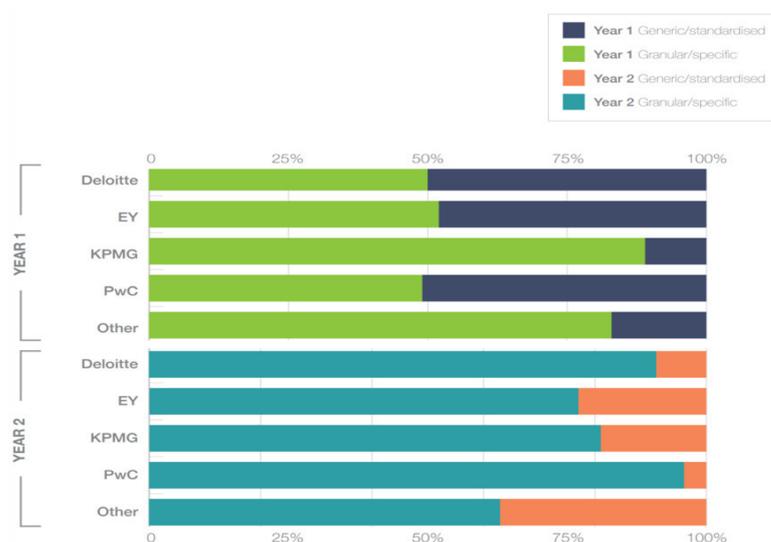
⁶⁸ cf. Accountancy Europe, (2018)

⁶⁹ Impairment of loans and receivables, IT systems, financial instruments/classification and measurement, litigation/regulatory matters/conduct (excluding taxation, income taxes, other impairments, IFRS 9 disclosure of the impact, insurance, pensions, hedge accounting. See Accountancy Europe (2018), p. 7.

⁷⁰ cf. Accountancy Europe (2018), p. 6.

overall level is very high. PwC is leading the pack with approximately 90% of granular reports, followed by Deloitte, KPMG, and EY.⁷¹

Figure 3: Degree of entity specification in the KAM description according to the FRC⁷²



The improvement in granularity over time is in line with the findings of Henselmann and Seebeck who analyse the word count for the KAM section in the independent auditor’s report of publicly listed companies in the UK for the three years after the implementation of ISA_{UK&I} 701. They find a 48.83% increase in words between year one and two, from an average 768 words to 1,143 words. Between year two and three on the other hand, they do not find evidence for a statistically significant change in the same statistic, suggesting that auditors adapted their KAM reporting after the experience from the first year, or more simply; a learning curve.⁷³

The research of Henselmann and Seebeck additionally covers an analysis of the readability of the KAM. For the assessment of the readability they use a text mining algorithm that calculates the Fog-Index for the KAM in each time period.⁷⁴

The Fog-Index is a widely used readability measure in accounting research and is a function of the variables average sentence length measured in words and percentage of complex words. A word is defined as complex if it has more than two syllables.⁷⁵ The

⁷¹ cf. Financial Reporting Council (2016) p.19

⁷² Financial Reporting Council (2016) p.19

⁷³ cf. Henselmann and Seebeck (2017) p.6

⁷⁴ cf. Henselmann and Seebeck (2017) p.10

⁷⁵ cf. LOUGHRAN and MCDONALD (2016) p.7

result of the Fog-Index “estimates the number of years of education needed to understand the text on a first reading.”⁷⁶

For the first year the Fog-Index takes a value of 25.07, for the second year a value of 24.03, and for the third year a value of 23.51, meaning that the reader needs well above 20 years of education to understand the KAM on a first reading. Hence, the readability of the reports is improving throughout the years but even in year three the KAM are relatively tough to understand. The authors compare the results with average Fog-Indices calculated for annual reports in the US for the years 2003-2013 and come to the conclusion that KAM are significantly more difficult to read as the Fog-Index for the annual reports is only 18.94 compared to the 23.51 for the KAM.⁷⁷

3.2. Research Hypotheses

The previous chapters set the stage and explored the regulations in place regarding the new audit report and especially the requirements for the communication of KAM. The outcome was that regulators intend to decrease the information gap between the auditor and the reader of the financial statements and therefore increase the public value of the annual report. In addition, the current scientific knowledge about KAM and the research fields that have been worked on already were extrapolated. In the following study, the aim is to answer the questions through theses 1 and 2 (H1, H2) which also denote their own respective hypotheses that are put under heavy analyses.

The structure of the communication of KAM in the auditor’s report is well defined and quite standardized, but the identification process is subject to the auditor’s discretion, as well as shortcomings or insights, since there is no detailed public information provided in regard to the KAM identification process.⁷⁸ Therefore, one of the main objectives of this work will be to investigate factors that appear to influence auditors’ decisions to report certain KAM topics. Thus, the first working statement will act as an umbrella:

H1: Auditors are influenced in their KAM reporting decision by specific bank individual factors.

This umbrella certainly requires specificities, therefore four sub-hypotheses postulate:

⁷⁶ LOUGHRAN and MCDONALD (2016) p.7

⁷⁷ cf. Henselmann and Seebeck (2017)p. 10

⁷⁸ cf. Leibfried (2016) p.2

H1a) Large banks report KAM with regard to Information Technology more often than smaller peers.

Social science suggests that there exists a positive correlation between size and complexity of organizations. Complexity is defined as “*the state of having many parts and being difficult to understand or find an answer to*”⁷⁹. Over the past decades banks have become bigger and less bank-centric through the addition of non-banking subsidiaries, i.e. they combine more different parts now.⁸⁰ It is assumed that with an increasing size, the division of labour becomes more differentiated and specialized and therefore more levels of supervision need to be introduced to maintain coordination and control.⁸¹

This effect does not stop at the supervision level, since larger firms tend to provide more and more distinct services, the IT complexity increases non-linearly. The reasons for this phenomenon is the inflexibility of systems, overlapping and redundant systems or excessive interfacing.⁸² Thus, it is plausible that auditors should report KAM regarding IT systems relatively more often for larger banks as the necessary effort and work for the audit is higher if it is to result in insights that resemble smaller and simpler businesses in clarity and transparency.

H1b) Large banks also report KAM related to Deferred Tax Assets more often than smaller peers.

Companies suffer from growth constraints due to market limitations. If the local market penetration has reached its maximum, the only way for further growth is to break into other markets.^{83,84} The reason for the desire to steadily grow is the general concept of economy of scales. Research finds a negative relationship between size and non-interest expense, thus by perpetually growing, larger banks can offer services cheaper than smaller competitors.⁸⁵ Consequently, larger banks are assumed to have already entered more markets with the implementation of subsidiaries both abroad and domestically than

⁷⁹ Cambridge University Press (n.a.)

⁸⁰ cf. Cetorelli *et al.* (2014) p.1

⁸¹ cf. Kahn *et al.* (1964) p.90

⁸² cf. Boochever *et al.* (2009) p.11

⁸³ cf. Ehlert (2013) p.3

⁸⁴ cf. Intriligator (2003) pp.2-3

⁸⁵ cf. Kovner *et al.* (2014) p.22

smaller banks. This brings the issue of being subject to multiple tax authorities. Since the United States (US) as the biggest economy in the world has one of the biggest bank markets as well it is fair to assume that larger banks tend to have a US tax presence more often.⁸⁶

On December 22nd 2017 a new tax reform was issued that significantly changes the US tax system by lowering the corporate tax from 35% to 21%. Most changes take effect in the 2018 tax year, however the issuing in 2017 means that for accounting purposes the impact on provisions will already be visible for the annual report in 2017.^{87,88}

Since many banks carry high deferred tax assets on their balance sheets due to the tremendous losses during the financial crisis, they are experiencing residual losses due to the tax reform. They will face large one-off hits as a result of the revaluation of the deferred tax assets.⁸⁹ This valuation adjustment is the reason why it can be assumed that auditors report KAM regarding deferred tax assets relatively more often for larger banks.

H1c) For successful banks, KAM with regard to restructuring are reported less often.

The financial crisis had severe impacts on the banking industry as a whole. As the market capitalization of publicly listed banks dropped from \$3.6 trillion to \$1.6 trillion⁹⁰ due to massive asset write-downs of up to \$2.7 trillion.⁹¹ The banks were later hit by a wave of regulation that affected both the capital requirements and profitability.⁹² European Banks still trade well below the stock price levels before the financial crisis as a result.⁹³ Additionally, in more recent years the rise of new technologies and the competition surrounding FinTech calls for a digital transformation to secure sustainable growth.

The challenge to balance short-term performance pressure and long-term goals is pivotal.⁹⁴ Thus, especially less successful banks will have to implement big restructuring programmes as the successful banks stay current with their environment and landscape.

⁸⁶ cf. Anderson (2017).

⁸⁷ cf. Wilkins (2018).

⁸⁸ cf. Bell (2018) p.1

⁸⁹ cf. The Economist (2018).

⁹⁰ cf. International Monetary Fund (2009) p.31

⁹¹ cf. International Monetary Fund (2009) p.30

⁹² cf. Deutsche Bundesbank (2018) p.51

⁹³ cf. Stoxx Limited (n.d.).

⁹⁴ cf. Walter (2018).

It can be expected that auditors will examine the management's projections regarding the outcome of the restructuring and the implications for the financial statements. Hence, it is fair to expect KAM regarding the restructuring programmes relatively less often for banks which are successful.

H1d) For banks with higher earnings quality, KAM with regard to Loan Loss Provisions (LLP) and Fair Value of Financial Instruments (FVFI) are reported less often.

Since 2005 listed companies in the EU are required to report their annual financial statements in compliance with the International Financial Reporting Standard (IFRS). The IFRS emphasizes fair value accounting (FVA), also known as mark to market accounting a lot. The economic case for FVA is to incorporate more information regarding the actual value rather than the historic cost of an asset in the financial statements.⁹⁵ Adding informational value to the financial statements is often desirable in contrast to the information gap, though there are different degrees of informational quality.

The informational quality is high for assets with liquid observable market prices or independently observable, accurate estimates of liquid market prices. Assets in illiquid markets on the other hand are prone to management manipulation as there exists no observable market price and mark to market model accounting is employed.⁹⁶ This introduction of valuation models for assets increases the risk for earnings manipulation and hence, directly influence the earnings quality in the financial statements. Therefore, for banks with higher earnings quality less KAM with the topic fair value of financial instruments are expected.

Another way for management to manipulate earnings is the exploitation of loan loss provisions for expected impairment of loans. IAS 39 requires banks to recognize impairment for credit losses that incurred before or at the balance sheet date. However, if there is an indication of impairment, the management makes an estimate for the loss based on the outstanding cash flows.⁹⁷ This model-based prediction gives the management the discretion to manipulate the LLP recognized in the income statement. With IFRS 9 the

⁹⁵ cf. Ball (2006) p.9

⁹⁶ cf. Ball (2006) p.10

⁹⁷ cf. Bank Nederlandse Gemeenten (2018) pp.272-273

accounting for loans is changed from an incurred loss model to an expected credit loss model with three stages, which will potentially amplify this problem.^{98,99}

The second main hypothesis is the following.

H2: There exist factors that influence the number of reported KAM.

Again, in order to find answers to this hypothesis it is split into sub-hypotheses:

H2a) For large banks, more KAM are reported because of higher complexity.

H2b) For successful banks, less KAM are reported because of a stable, working business model.

H2c) For banks with higher earnings quality, less KAM are reported because of the lower associated risk of fraud.

The intuitions for the sub-hypotheses of *H2* match those of the sub-hypotheses of *H1*. However, the only difference is to control whether the identified factors increase the number of reported KAM. Therefore, the same independent variables for both statistical analyses are used and the results will be shown together. As before, *H2* will be seen as true if at least one of its sub-hypotheses can be accepted.

Furthermore, the hypothesis is proposed that there are unique distinctions between the big four audit companies for the reporting frequency of IT, Tax, Restructuring, LLP, and FVFI KAM. It can be assumed that the expertise regarding specific topics deviates and thus, the effort needed for the audit and the focus set by the auditors deviates as well. Hence, Hypothesis 3 is:

H3: The reporting frequency of the KAM examined for H1 differ between the audit firms.

Additionally, it is analysed whether there exist differences between the auditors with regard to the number of KAM reported per entity. For *H3* it is argued that there might be differences in the expertise of the auditors. Now, it is assumed that there might be variations in the general understanding of KAM resulting from differences in the company's internal training of employees. If this is true, one would expect some auditors

⁹⁸ cf. PwC (2014b) p.1

⁹⁹ cf. Deloitte (n.d.).

to report less and some auditors to report more KAM than others. Therefore, Hypothesis 4 is proposed:

H4: The number of reported KAM differ between the audit firms.

The last hypothesis is developed with regard to the audit companies covers the question if there are similarities in the wording of the most frequently reported KAM. In the previous sub-chapter in Figure 3, the results of the FRC analysis regarding the granularity for the second year of KAM reporting in the United Kingdom have been exhibited and explained that readers prefer specific wording over boilerplate language. If the audit companies show similarities in the reporting it is apparent that they are using standardized wording. Thus, the reader might not get the information he is looking for and hence, the informational value is decreased. Therefore, Hypothesis 5 is proposed:

H5: The most often reported KAM do not share text similarities between the audit firms.

The following table provides a summary for all of the proposed hypotheses:

Figure 4: Summary of the Hypotheses

Hypotheses		
Main hypotheses	H1	<p>Auditors are influenced in their KAM reporting decision by specific bank individual factors.</p> <ul style="list-style-type: none"> > H1a: Large banks report KAM with regard to Information Technology more often than smaller peers. > H1b: Large banks also report KAM related to Deferred Tax Assets more often than smaller peers.. > H1c: For successful banks, KAM with regard to restructuring are reported less often. > H1d: For banks with higher earnings quality, KAM with regard to Loan Loss Provisions (LLP) and Fair Value of Financial Instruments (FVFI) are reported less often.
	H2	<p>There exist factors that influence the number of reported KAM.</p> <ul style="list-style-type: none"> > H2a: For large banks, more KAM are reported because of higher complexity. > H2b: For successful banks, less KAM are reported because of a stable, working business model. > H2c: For banks with higher earnings quality, less KAM are reported because of the lower associated risk of fraud.
Additional hypotheses	H3	The reporting frequency of the KAM examined for H1 differ between the audit firms.
	H4	The number of reported KAM differ between the audit firms.
	H5	The most often reported KAM do not share text similarities between the audit firms.

4. Empirical Analysis – Approach

The following chapter explains in detail the sample composition, the data gathering process, and the statistical methods that are later used for the analysis of the hypotheses. To already provide a brief summary, the sample contains 92 eligible banks of which 90 reported KAM in their annual report 2017. The data gathering process is fully based on and sourced from the annual reports and for the statistical method Logit and linear regression models are used.

4.1. Sample Banks Selection Process

The selection of the banks was based upon the following characteristics:

Before all else, banks need to be based in the European Union and be part of the Eurozone and therefore governed by the European Central Bank (ECB). This is of importance since the regulatory requirements for the different banks need to be similar in order to comprehensively compare the KAM reported in the annual reports. For example, the provision requirements for loan losses need to be the same etc. This was based upon the list of supervised entities published by the ECB as of 1st of January 2018, which comprises 118 significant supervised entities and approximately 3000 less significant institutions.^{100,101}

Secondly, the banks need to report their financial statements under the IFRS set out by the International Accounting Standards Board (IASB). The IAASB states in the ISA 701 that “[...] *communicating key audit matters provides additional information to users of the financial statements to assist them in understanding those matters that, in the auditor’s professional judgement, were of most significance in the audit of the financial statements of the current period.*”¹⁰² As the communication is based on the audit of the financial statements, the reporting standard needs to be the same for all banks in order to increase the explanatory value of the results and improve comparability.

¹⁰⁰ Since the ECB does not disclose a number for less significant institutions, the estimation is based on own calculations. For this purpose the number of banks of the first three pages of the list of less significant institutions is counted and divided by 3 to get to the mean of banks per page of 48.667. Then this mean is multiplied with 62 (the number of pages that contain less significant institutions) to get a total number of 3,017 institutions.

¹⁰¹ cf. European Central Bank (2018).

¹⁰² IAASB (12/15/2016) p.2

In addition, banks should not be subsidiaries because the affiliation to the parental company is most likely going to influence the business model, and thus might affect the reported KAM. One example in this regard is the Volkswagen Bank GmbH which is a 100% subsidiary of the Volkswagen Group and hence mainly focuses on vehicle financing of customers.¹⁰³ Therefore, subsidiaries are excluded from the sample to solidify the results.

Lastly, all banks included need to have published a full set of audited financial statements in the English language by April 31st 2018 as it is not possible to constantly monitor all banks for new publications. The restriction to English is simply adopted to prevent any language barriers, poor translations, as well as promoting consistency.

There are 92 banks that fulfil the criterion, yet German KfW and the Dutch NIBC do not report KAM, nor a statement that there is no KAM for the period in the auditor's report. Therefore, these banks are excluded from the sample leaving 90 banks, which are considered in the analysis. The selection for all the above-mentioned criteria is done without any aid by an algorithm and a list of all banks included in the analysis can be found in the Appendix. All information is gathered from the financial reports publicly available in the investor relations section of each companies' homepages.

4.2. Assembling of the Database

For the main analysis a data set is built upon the information on KAM provided by the annual reports of 2017. For this purpose, there is an Excel sheet with a list of all the sample banks' names. Data entries are manually looked up throughout all the annual reports, one by one for the reported KAM, and a dummy variable approach to indicate in the Excel Database which specific KAM topics are reported is employed. KAM topics are sorted by their respective content so that the analysis yields more general results. This sorting leads to 27 individual clusters. There are nine clusters, for which only one KAM is reported, therefore a category named "other" is introduced that accounts for these nine clusters in figures.

To provide an example for this procedure, it should be assumed to analyse the KAM of Deutsche Bank. First, it is necessary to look into the annual report and search for the independent auditor's report section. There the KAM topics is found: Valuation of Level

¹⁰³ cf. Volkswagen Bank GmbH (2018) p.5

3 Financial Instruments and Unobservable Inputs therein, Loan Loss Allowances in Credit Portfolios of certain Industries, Recognition and Measurement of Deferred Tax Assets, Presentation of Legal Risks in the Financial Statement, and IT Access Management in the financial reporting process.¹⁰⁴ For the first KAM then a 1 in the Excel database for the cluster Fair Value of Financial Instruments is entered, for the second KAM a 1 in the Excel database for Loan Loss Provision is entered and so on and so forth. For all other KAM clusters not mentioned in the annual report a 0 is entered.

4.3. Statistical Method – Logit, Probit and Linear Regressions

In order to provide an empirical analysis of the results, it is of critical importance to determine a process that correctly matches the needs of the data set which consists of continuous as well as discrete variables. The observations for total assets, number of employees' net income, financial instruments other than loans, earnings management measure, and number of reported KAM are the continuous variables. The dummy variables that indicate which KAM are reported for the banks and the dummy for the auditor are the discrete variables.¹⁰⁵

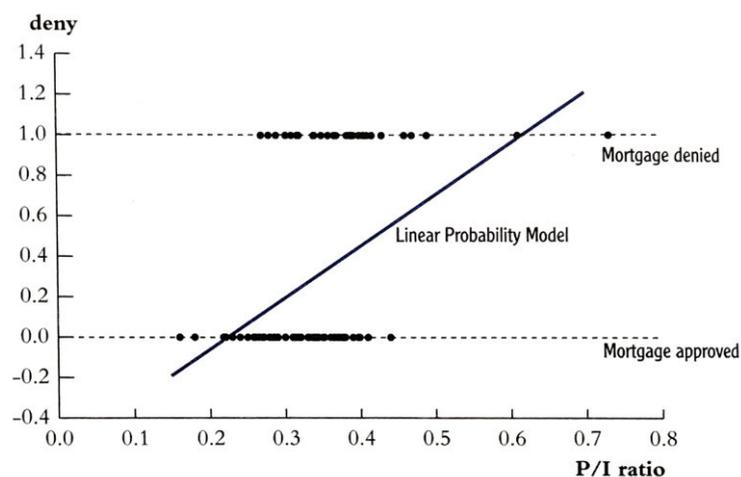
Since the main goals of this work are to analyse whether there are influential factors that increase the probability that certain KAM are reported in the independent auditor's report section of the annual reports and to identify drivers for the number of KAM, the dependent variable will in most cases be one of the dummy KAM variables or the continuous variable number of KAM.

For the analysis of the influential factors that increase the probability of certain KAM to be reported, the standard linear probability model will not provide sound results as shown by Figure 5.

¹⁰⁴ cf. Deutsche Bank AG (2018) p.374

¹⁰⁵ cf. Spiegel and Stephens (2008) p.1

Figure 5: Linear Probability Model for a Binary Dependent Variable¹⁰⁶



The linear probability regression cannot catch the nature of the binary dependent variable and does go below 0 and above 1. Since the dependent variable's outcomes are defined as either 0 or 1, taking into consideration values below 0 or above 1 as if it would be a continuous variable does not make much sense for the probability estimation. This problem can be further depicted by visualizing the underlying equation for the linear probability regression model with:

$$Y_i = P(Y_i = 1) + e_i = \beta_0 + \beta_1 * x_{i1} + e_i \quad (1)$$

Whereas the left-hand side is a binary probability measure with a value range of [0,1], the right-hand side of the equation has a defined value range of $[-\infty, \infty]$. Hence, it is necessary to adjust the value range on the left-hand side of the equation so that the probability function runs from $-\infty$ to ∞ . For this purpose, there exist two options. The first option being the Logistic (Logit) Model and the second option being the Probability Unit (Probit) Model which both can be applied to solve the issue.¹⁰⁷

The Logit model was first introduced by Joseph Berkson and is a widely used statistical method in natural science.¹⁰⁸ It assumes that the probability of occurrence of the event (in the case of this paper the occurrence of a specific KAM topic in the annual report) is defined by the following function and has in general heavier tails than a standard normal distribution:

¹⁰⁶ Stock and Watson (2007) p.386

¹⁰⁷ cf. Stock and Watson (2007) pp.384-389

¹⁰⁸ cf. Cramer (2003) p.159

$$p_i = F(Z_i) = \frac{1}{1+e^{-Z_i}} \quad (2)$$

with $Z_i = \beta_1 + \beta_2 X_{2i} + \dots + \beta_n X_{ni}$ being a linear function of the independent variable and $F(Z_i)$ being a probability function. If Z_i strives to infinity, the probability function tends to 1 and if Z_i tends to minus infinity the probability function tends to 0. Hence, the problem of the predicted probability being greater than 1 or lower than 0 is solved by adjusting the right-hand side of the linear probability equation to contain a value range that mirrors the binary dependent variable. Additionally, a quick look at the marginal effect of Z (see (3)) on the probability, which is nothing else as the first derivative of $F(Z_i)$, shows that the effects of a change in a large positive or large negative Z has next to no impact on the probability. The maximum impact of changes in Z on the probability can be observed when $Z = 0$.

$$F'(Z_i) = f(Z) = \frac{e^{-Z}}{(1+e^{-Z})^2} \quad (3)$$

Since the independent variables have a non-linear impact on the probability of $Y_i = 1$, the Logit regression coefficients $\hat{\beta}$ cannot be interpreted as the direct influence on the probability of occurrence. Therefore, the coefficient does not implicate that a change of one unit in the independent variable changes the probability of occurrence by $\hat{\beta}$ %. However, what can be inferred by looking at the coefficient is that the algebraic sign of $\hat{\beta}$ determines whether the probability of $Y_i = 1$ rises, falls or stays the same with changes in the independent variable. The direct impact can only be calculated by calculating the differential of p_i with respect to the independent variable X .

$$\frac{dp}{dX} = \frac{dp}{dZ} * \frac{dZ}{dX} = f(Z) * \hat{\beta}_2 \quad (4)$$

Since Z is changing constantly depending on X , and the marginal effect is depending on Z , the impact on the probability of occurrence of a change in X is also changing constantly. In practice it is most common to report the marginal effects around the mean.^{109,110}

The Probit model uses a link function as well to transform the continuous variables into probabilities. To be more specific with Probit, the link function in use is the cumulative

¹⁰⁹ cf. Dougherty (2016) pp.372-373

¹¹⁰ cf. Stock and Watson (2007) pp.389-396

standardized normal distribution $F(Z)$. If a variable Z is defined that is linearly dependent on the independent variable X and X determines the probability of the event (see (5)) then the probability of the occurrence of an event can be calculated using the cumulative standardized normal distribution $F(Z_i) = p_i$ for all Z . With this method the possible value range is again transformed from $[-\infty, \infty]$ to $[0,1]$.

$$Z = \beta_1 + \beta_2 X_2 \quad (5)$$

In order to obtain the marginal effect of the independent variable X on the probability of occurrence, similar to the Logit model, the first derivative of p with respect to X is calculated:

$$\frac{dp}{dX} = \frac{dp}{dZ} * \frac{dZ}{dX} = f(Z) * \hat{\beta}_2 \quad (6)$$

Since $\frac{dp}{dZ} = F'(Z) = f(Z)$ and $F(Z)$ being the cumulative standardized normal distribution, $f(Z)$ is nothing else than the standardized normal distribution. With this in mind it becomes clear that if Z_i tends to infinity the cumulative standardized normal distribution $F(Z_i)$ tends to 1, and if Z_i tends to minus infinity the cumulative standardized normal distribution tends to 0.

Analogous to the Logit model the Probit model's regression coefficients cannot be interpreted as the direct influence of the independent variable on the probability of occurrence, as the effect is not constant for every value. Anew, the algebraic sign of the estimator is decisive for the direction of the dependency.^{111,112}

In both models the maximum likelihood (ML) method is used to calculate the estimators. Instead of minimizing the sum of residuals as with a standard ordinary least squares approach, the ML-method maximizes a likelihood function so that a parameter is obtained that makes it most probable to observe the underlying data sample.¹¹³

The estimators differ between Logit and Probit due to the functional form of both models i.e. Logit is using a logistic distribution and Probit is using a standardized cumulative normal distribution. It is assumed that the estimators (coefficients) differ as follows¹¹⁴:

¹¹¹ cf. Dougherty (2016) pp.378-379

¹¹² cf. Wooldridge (2010) pp.566-567

¹¹³ cf. Dougherty (2016) pp.391-400

¹¹⁴ cf. Stock and Watson (2007) pp. 398-399

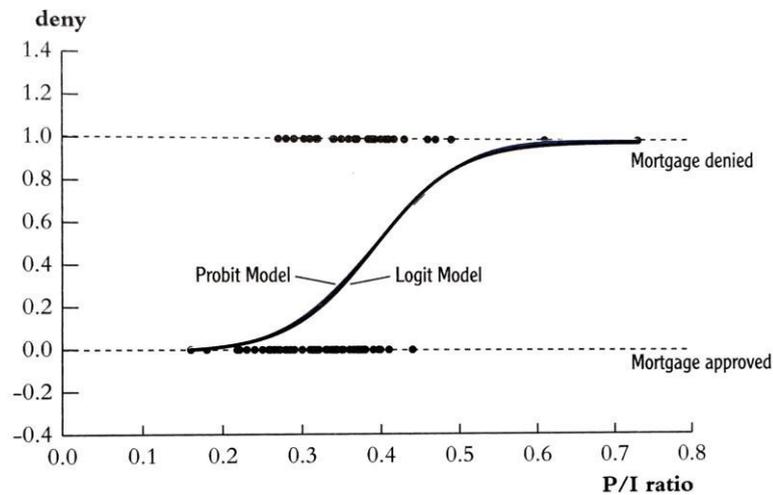
$$\beta_{logit} \cong 4 * \beta_{OLS}$$

$$\beta_{probit} \cong 2.5 * \beta_{OLS}$$

$$\beta_{logit} \cong 1.6 * \beta_{probit}$$

Even if the estimators differ between the two models, in general both Logit and Probit produce relatively similar results. The next graph plots both models for the same sample and indeed, the results look alike with both regressions moving nearly identical.

Figure 6: Probit and Logit Models for a Binary Dependent Variable¹¹⁵



For the purpose of this work the Logit model is chosen to check for significance. Relevant literature states that the approximation of the estimators is reasonably good even in small samples and that the distribution is more robust due to its fatter tails.^{116, 117}

Thus, the formula that is used for the most parts of the hypotheses testing is:

$$p_{KAMi} = F(Z_{KAMi}) = \frac{1}{1+e^{-(\beta_1+\beta_2X_{2i}+\dots+\beta_nX_{ni})}}, \text{ whereas } X_{ni} \text{ is the factor } n \text{ for bank } i.$$

The statistical analysis regarding the number of KAM reported in the auditor's report is conducted with a linear regression model with the general formula of $Y_i = \beta_0 + \beta_1 * x_{i1} + \dots + \beta_n * x_{in} + e_i$. The estimators are calculated using the standard ordinary least squares approach. Some variables such as size and number of employees are being logarithmic transformed to obtain more normal distributed variables. For all other

¹¹⁵ Stock and Watson (2007) p.395

¹¹⁶ cf. Mc Fadden (1973) p.119

¹¹⁷ cf. Amemiya (1985) p.269

variables, the β_i estimator can be interpreted as the linear relation between an increase of one unit in the independent variable and a resulting change of the dependent variable of $\beta_i * 1$.¹¹⁸

4.4. The Independent Variables for the Regression Models

After explaining the statistical model that will be used later for the analysis of the hypotheses, it should be focused on the independent variables.

4.4.1. Bank Size and Complexity

The bank size is controlled by the two different independent variables, number of employees and total assets. The number of employees is a common measure for size in literature used for the categorization of companies. It will control for organizational complexity in the sense that banks with more employees are expected to have more management layers and so then more stakeholders. The additional management layers therefore increase the information cost of the top management and make the coordination more difficult.¹¹⁹

The second independent variable for size is the total assets figure, which offers the advantage to be easily accessible in the financial statements. Total assets sum up the volume of all activities of a bank and therefore, function as a good indicator for the business size.¹²⁰

Lastly, the sum of trading and available-for-sale securities and derivatives are used to control for business complexity. This is the same metric the Bank of International Settlements uses in their assessment of global systematically important banks.¹²¹ The more financial instruments besides loans on the balance sheet of a given bank the more difficult the managing of all risks associated with the products becomes, and thus the more tedious the valuation requiring a vaster diversification and amplitude of models. Therefore, that can be seen as an adequate measure for business complexity.

¹¹⁸ cf. Dougherty (2016) pp.85-89

¹¹⁹ cf. Hall *et al.* (1967) p.10

¹²⁰ cf. Schildbach (2017) p.6

¹²¹ cf. Basel Committee on Banking Supervision (2013) p.9

4.4.2. Success

The net income figure is used as an absolute measure for a bank's success, since it reflects the company result after the deduction of all expenses.¹²² It can be assumed that banks that are able to showcase positive net income figures in the current tough market environment due to historically low interest rates have already adapted their business models.

4.4.3. Earnings Management

A lot has been written about earnings quality (EQ) and earnings management (EM).^{123,124,125,126} The theory on EQ is quite ambiguous with excessive explanations doing more harm than good. Some researchers define EQ as the degree of how well reported earnings represent the Hicksian income, while others define EQ as the degree of how well earnings reflect the real performance of a company.^{127, 128}

The Hicksian income was developed by John Hicks in 1939 and relates to the economic-based definition of earnings. Hicksian income is the income that can be consumed by a company in a period without changing the status quo, meaning that the company is equally well-off at the start and the end of each period. Hicksian income can be regarded as the absence of all user-decision contexts, accounting recognition rules, difficulties in the measurement of the economic value of assets and liabilities, management's judgement, and the auditor's influence. Despite the unobservability of Hicksian income, it is assumed that there are approximations and that the variance between higher quality earnings do not differ as much from those approximations than lower quality earnings.¹²⁹

The authors that define EQ as the degree of how well earnings reflect the real performance of a company take the perspective of one akin to financial analyst. Their objective is to evaluate the current performance of a company, whether future performance is predicted

¹²² cf. Stickney (2010) p.145

¹²³ cf. Schipper and Vincent (2003).

¹²⁴ cf. Dechow and Schrand (2004).

¹²⁵ cf. Lo (2008).

¹²⁶ cf. Schipper (1989).

¹²⁷ cf. Schipper and Vincent (2003) p.1

¹²⁸ cf. Dechow and Schrand (2004) p.13

¹²⁹ cf. Schipper and Vincent (2003) p.2

by the current performance and if the current stock price reflects the value of the company. The EQ is assumed to be high if all three objectives are achieved.¹³⁰

No matter the definition of EQ, a high EQ secures the informational value of the reported earnings and therefore allows the reader of the financial statements to fairly assess the soundness of a company.¹³¹

According to Healy and Wahlen:

*Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.*¹³²

This leads by definition to a negative correlation between EQ and EM. For companies with a high EQ the EM has to be low and for companies with a high EM the EQ has to be low due to the manipulation.

As for EQ there exist multiple arguments for EM. This increases the difficulty to find a consensus on how to best investigate the effects of EM. Another factor that makes EM more challenging to prove is the lack of a control group and the unclear differentiation to capital management. Despite all these difficulties there is a widespread believe in the existence of EM.¹³³ This widespread believe arises from the identified incentives for EM.

In the case of banks those incentives are the possibility for management to lower the cost of capital by signalling private information to the public and that regulators may monitor banks based on earnings.¹³⁴ The signalling effect is associated with the bank managers opinion that investors see smooth earnings as a sign for a good bank. Therefore, they up the ante by increasing provisions when earnings are high.

This behaviour leads to the belief in academia that there is a positive correlation between pre-provision earnings and provisions.¹³⁵ Hence, the LLP can be used as a proxy for EM. In order to make the LLP comparable between the sample banks, the metric LLP divided

¹³⁰ cf. Dechow and Schrand (2004) p.5

¹³¹ cf. Schipper and Vincent (2003) p.2

¹³² Healy and Wahlen (1999) p.8

¹³³ cf. Healy and Wahlen (1999) p.11

¹³⁴ cf. Beatty *et al.* (1995) p.5

¹³⁵ cf. Collins *et al.* (1995).

by last year's total outstanding loans is being used for the regressions. It is necessary to normalize the LLP since the absolute value for banks with larger loan portfolios must be higher. Thus, the higher the ratio, the higher the degree of EM.

4.4.4. Dummy Variables

In the following regression analysis, dummy variables are used for the different audit firms. This allows to find differences between the auditors regarding the reporting frequency of the specific KAM that are analysed. Additionally, a dummy variable for the test of *H1b* is created, which indicates if a bank has a subsidiary in the United States and so is subject to the US tax authorities. This allows to filter for the effect of the US tax reform on the KAM reporting.

5. Empirical Analysis - Results

In this chapter the analysis results for the sample are presented. Starting by providing a general overview and explaining the differences for the countries in this sample and comparing the reported sample KAM to the findings for the FTSE. This data is then put under the scope of all hypotheses.

5.1. General Results

After applying the selection criteria explained in chapter 4.1. to the list of banks that are supervised by the ECB, there are 92 banks left. Then the German KfW bank and the Dutch NIBC are excluded from the sample, since their auditor did not report a single KAM. This alone is not an exclusion criterion itself as auditors are allowed to not report a KAM in certain scenarios. Nevertheless, if they do not report a KAM they are obliged to document the reason for this decision.^{136,137} In the case of KfW bank and NIBC there was neither an explanation given, nor a KAM reported. Therefore, it can be assumed that both are non-PIEs which do not fall under the new audit requirements and can thus be excluded as they do not add any informational value and may distort the results. This leaves us with 90 banks of which 35 are audited by PwC followed by KPMG with 29, Deloitte with 17, EY with 15, Mazars with 2 and Cailliau Dedouit et Associés with only one bank. The accumulated number for the audit companies exceeds the number of banks in the sample due to the joint-audit approach applied in France.

5.1.1. Sample Analysis by Region

The Eurozone comprises the 19 countries of the European Union that use the EURO as their main currency.¹³⁸ Figure 7 shows a bar chart for the number of banks in the sample per country. Since there is no Slovakian bank that matches all selection criteria, this country is not considered in the graph. The top five countries with the most banks in the sample are Germany, the Netherlands, Italy, France, and Spain. Together the five countries comprise 47 out of 90 possible banks and thus, 52% of the sample. From a total asset perspective, the importance increases even further as the banks comprise 1.968 trillion out of the 2.524 trillion assets of the sample which is around 78%. In order to provide insights into the differences between the banking sectors across the countries, the

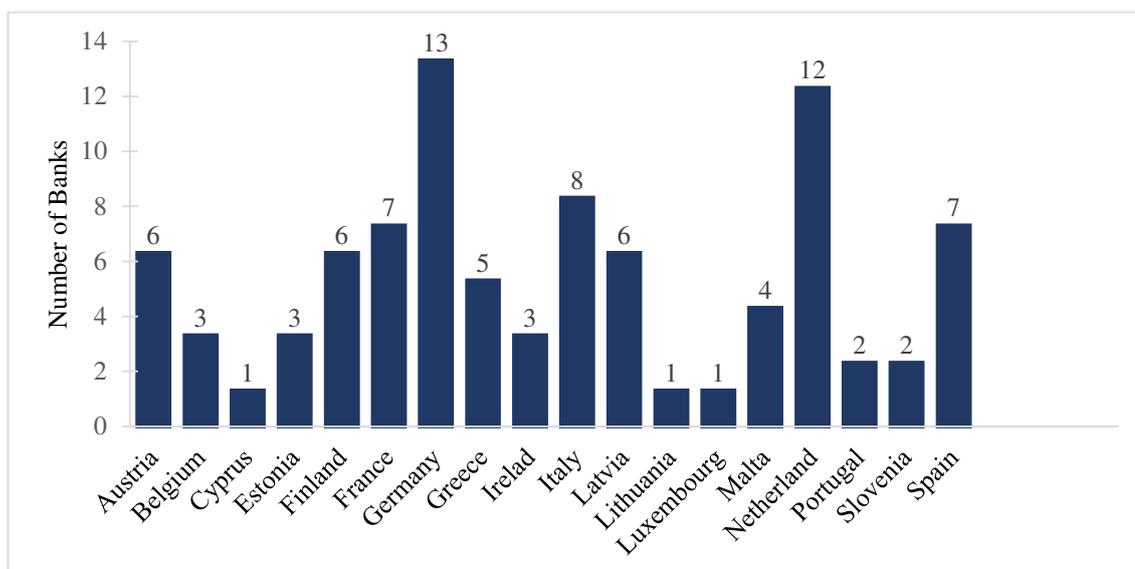
¹³⁶ cf. IAASB (12/15/2016) p.4

¹³⁷ cf. IDW-Verlag (2017) EPS 401 p.9

¹³⁸ cf. Europäische Union (n.d).

structure for the German, Italian, Dutch, French, and Spanish banking sector are explained more closely since those countries will probably be the main drivers for the later results and hence a sector analysis allows us to form proper expectations. For all other countries information about the average number of KAM reported, the average size, the average net income, and earnings management are provided.

Figure 7: Number of Banks per Country



Germany has more banks than any other European nation, which is not surprising - it is by far the largest economy in the Eurozone measured in terms of GDP. Furthermore, Germany is known for its scattered, unconsolidated, and three-pillar structured banking sector. The first pillar consists of private banks, the second pillar are the public institutions and the third pillar is made up of the cooperative banks.¹³⁹ Since Germany is an export-driven economy, a big portion of the banks' balance sheets is made up by Eurozone long-term debt rather than only domestic debt. In comparison with the other Eurozone member states, Germany's banking sector is the second least concentrated with an Herfindahl index¹⁴⁰ well below 500, only undercut by Luxembourg.¹⁴¹ Scattering and the resulting tough competition between the market participants is hurting the banks' profitability. In 2016 the return on capital was only around 2%.¹⁴² To set this value into perspective, the expected cost of capital for the two largest private German banks, being Deutsche Bank

¹³⁹ cf. Gilquin (2014) p.1

¹⁴⁰ The Herfindahl index is a measure for market concentration and takes values between 0 and 10,000, with 10,000 being a completely monopolistic market and 0 being a completely unconcentrated market.

¹⁴¹ cf. Reid *et al.* (2017) p.17

¹⁴² cf. Reid *et al.* (2017) p.19

and Commerzbank, is between 8% - 10%.¹⁴³ This lack of profitability comes with a direct need for restructuring of the eroding business models.¹⁴⁴ In general, the German banks in this sample are quite large with six out of thirteen banks having total assets of more than €100 billion. As Deutsche Bank being by far the largest German bank, it has nearly three times the assets of DZ Bank, its next biggest competitor.

Although there are nearly as many Dutch banks as German banks in the sample, the sector structures are quite different in both countries. The Dutch banking sector is relatively large in size due to tax incentives such as deductibility of interest payments on mortgages and business loans. Nevertheless, the sector is highly concentrated and dominated by a few large banks after a big wave of consolidation in the 1980's and 1990's. The degree of concentration in the bank market is reflected by a Herfindahl index of roughly 2.250 points, which is 1.750 points higher than for the German bank market.¹⁴⁵ Due to the variety of government incentives, the Dutch banks did not specialise and follow a rather generalist approach.¹⁴⁶ This however has no negative impact on their overall profitability with an average return on capital of 8%. The relatively high return on capital indicates the nearly completed restructuring process in the Netherlands.¹⁴⁷ Dutch banks in contrast to German banks hold nearly exclusively domestic long-term debt and have therefore less credit risk exposure towards the other Eurozone countries.¹⁴⁸ The Dutch banks with largest total asset value are the ING Groep, Rabobank and ABN Amro.

Just like the German banking sector, the Italian banking sector is quite diversified and still relatively unconsolidated, which is the reason why the third most banks in the sample are Italian banks. However, due to the need of cost cutting and in response to technological progress, there have been mergers occurring mainly between smaller to medium-sized banks, which results in a Herfindahl index of 500 points.¹⁴⁹ The role as domestic lenders for Italian banks is more critical than in any other Eurozone country, since the Italian economy is mostly driven by small and medium-sized enterprises (SME), which lack access to global capital markets. Therefore, the balance sheet of Italian banks

¹⁴³ cf. Maisch (06/30/2018).

¹⁴⁴ Maisch (2018).

¹⁴⁵ cf. Reid *et al.* (2017) p.17

¹⁴⁶ cf. DeNederlandscheBank (2015) p.3

¹⁴⁷ cf. Reid *et al.* (2017) p.19

¹⁴⁸ cf. European Central Bank (2016) p.20

¹⁴⁹ cf. Reid *et al.* (2017) p.17

is in big parts made up by the domestic loan business.¹⁵⁰ As for Germany, the Italian banking sector is in the middle of a restructuring process. The average return on capital in 2016 was a negative 10%, which is the worst result for the five most important countries in that sample. The biggest Italian banks in terms of assets are Unicredit and Intesa San Paolo. Otherwise, only Monte dei Paschi di Siena has an amount of total assets of slightly more than €100 billion.

The French banking sector is of particular importance as one of the main economic assets for the country. The overall strength of the French banking sector in an international context is proven, looking at the top European banks and the list of Global Systemically Important Banks. Four French banks are ranked among the top European banks and six are considered to be systemically important. The common equity tier 1 capital with on average 13.6% places the French financial sector among the most resilient ones in the Eurozone.^{151,152} A Herfindahl index of slightly above 500 suggests that the market concentration of the French banking sector is not that intense, but the index underestimates the significant number of cooperative banks that are not owned by a central body. Similar to the Netherlands, the French banks follow a universal banking model combining all services in a single institution. The French banks' profitability of 8% average return on capital indicates that the status of restructuring can be seen as largely completed. In contrast to the banks in other Eurozone countries, the French banks were less impacted by the financial crisis, which lead to the advantage of not having to focus as much on non-performing loans and cost cutting and continue to focus on growth.¹⁵³ Similar to Germany, the balance sheet of French banks is not purely driven by domestic long term loans, but rather a healthy mix of domestic and Eurozone debt securities.¹⁵⁴ The largest French financial institution in the sample is BNP Paribas followed by Crédit Agricole, and Société Générale.

After the financial crisis, the Herfindahl index for the Spanish banking sector displayed a huge jump. The index was slightly above 500 points in 2008 and doubled by 2016. This development was driven by a huge wave of consolidations partly through state

¹⁵⁰ cf. European Banking Federation (n.d.b).

¹⁵¹ cf. European Banking Federation (n.d.a).

¹⁵² cf. Fédération Bancaire Française (2017).

¹⁵³ cf. Reid *et al.* (2017) p.19

¹⁵⁴ cf. European Central Bank (2016) p.20

intervention.¹⁵⁵ The average common equity tier 1 capital ratio reached 12.36% and the average return on capital is 7%.^{156,157} Similar to Italy, Spanish banks are mostly holding domestic long-term loans.¹⁵⁸ Therefore, the Spanish banking sector was knocked by the financial crisis and the subsequent European debt crisis, and is still in the middle of a restructuring process in order to reduce the non-performing loan portfolios. The unfavourable economic environment with low interest rates, reduced margins, and deleveraging tendencies of the customers are hard to overcome. Despite these adversities, larger banks aim to adopt new technology to improve the efficiencies in both front and back offices earlier and are already fairly advanced on digital and infrastructure replacement.¹⁵⁹ The Spanish banking sector is dominated in size by Santander followed by BBVA.

Now that a sense for the structural differences between the driving countries has been established, one should observe the independent variables that are later used in the statistical model to test for the hypotheses, starting with the size, then profitability, and concluding with the degree of earnings management of the banks in this sample.

Figure 8 shows the median bank size measure by total assets in € million per country. The median is chosen instead of the mean since the observations for total assets are not normally distributed and hence, the numerous outliers would distort the true picture of the sample. The highest median value across the countries can be observed for France with €759,621 million, while Estonia displays the lowest median with only €459 million. Hence, the median French bank is 1,655 times “larger” than its Estonian peer.

Overall, the striking size of the French banks is in line with the information provided for the banking sector, whereas the size of the median Dutch bank is a little bit lower than expected. The median for the whole sample is €50,881 million in total assets and the results are in accordance with the earlier findings about the asset and bank distribution of the sample in regard to France, Germany, Italy, the Netherlands, and Spain.

¹⁵⁵ cf. Reid *et al.* (2017) pp.15-16

¹⁵⁶ cf. Reid *et al.* (2017) p.19

¹⁵⁷ cf. European Banking Federation (n.d.c).

¹⁵⁸ cf. European Central Bank (2016) p.20

¹⁵⁹ cf. European Banking Federation (n.d.c).

Figure 8: Banks' Median Total Assets for the Sample Countries

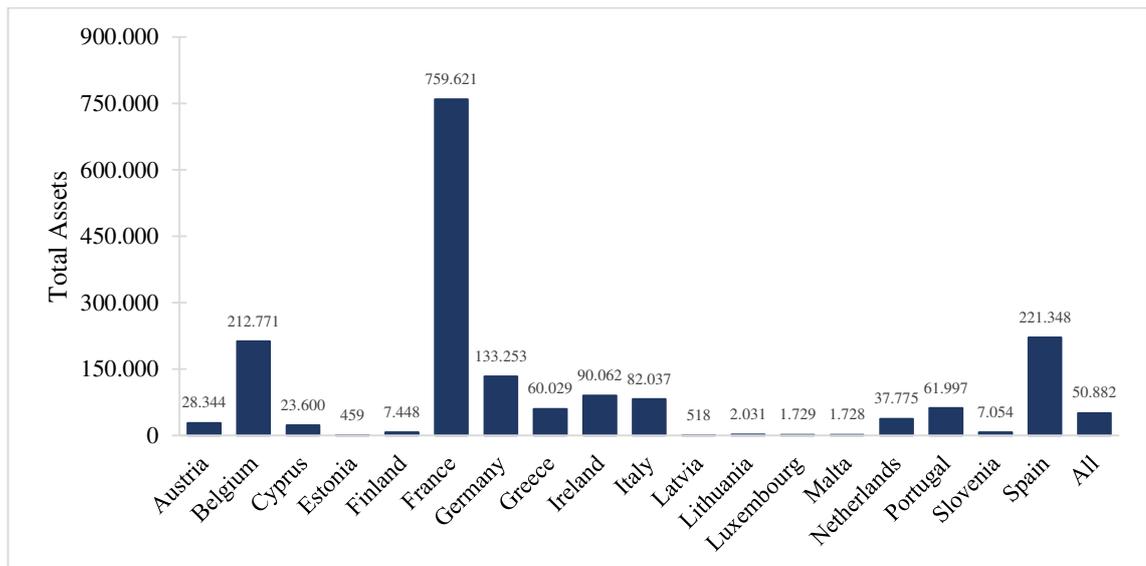


Figure 9 exhibits the median bank profitability measured by net income in € millions per country and again displays the median due to the numerous outliers. Similar to the total assets case before, the highest net income can be observed for French banks with a median of €845 million. The lowest median of all countries can be found for Portugal, with a negative median net income of € -607 million, closely followed by Cyprus with a negative median net income of € -552 million. With the exception of these two countries, all others have a positive median net income. The overall median net income for the whole sample is €121 million.

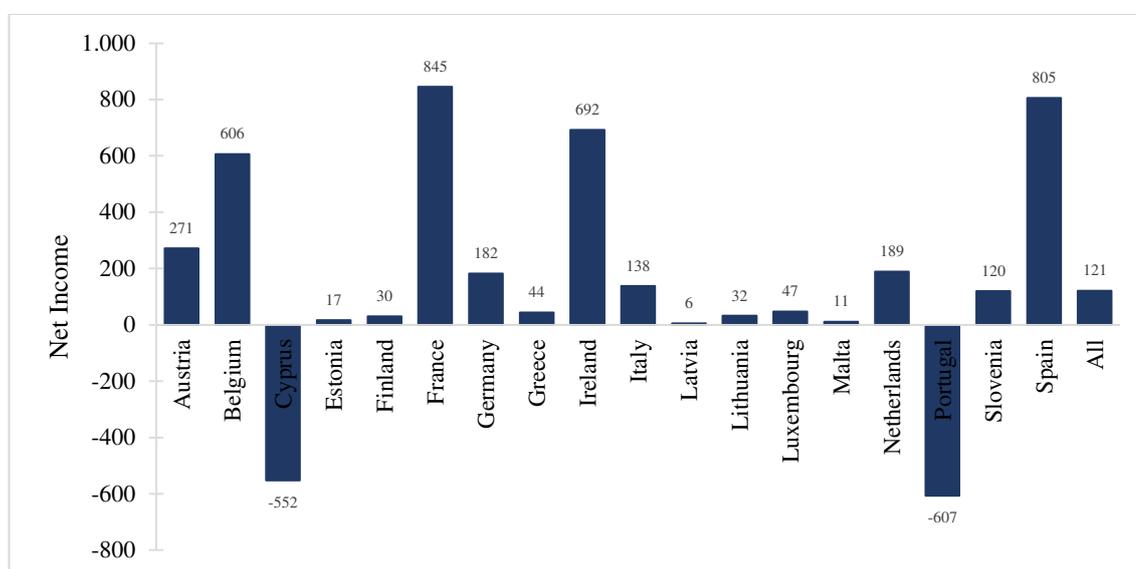
Banco Comercial Português and Novo Banco are the only two Portuguese banks in the sample. Novo Banco clearly drives the apparent unprofitability of Portuguese banks by reporting a negative net income of € -1,400 million, while Banco Comercial Português reported a net income of € 186 million. Novo Banco is considered as the “good” bank, which was introduced after the breakup of its predecessor Banco Espírito Santo, the once-second-largest private bank in Portugal. A lot of the problems regarding the loan quality of Banco Espírito Santo and its bad reputation are still affecting Novo Banco today and the banks’ need for a complete rebuilding process remains to hinder its profitability.¹⁶⁰

For Cyprus, the second country which’s banking sector has a negative median net income bears many resemblances. As the Bank of Cyprus Holdings Public Limited Company is the only Cypriot bank in the sample, the data for that country is very limited.

¹⁶⁰ cf. Novo Banco (2018) pp.7-10

Nevertheless, the bank's profitability mainly suffers from the quality of their loan portfolio and its striking exposure of 90% towards the still slowly recovering and highly indebted Cypriot economy.¹⁶¹

Figure 9: Banks' Median Net Income for the Sample Countries

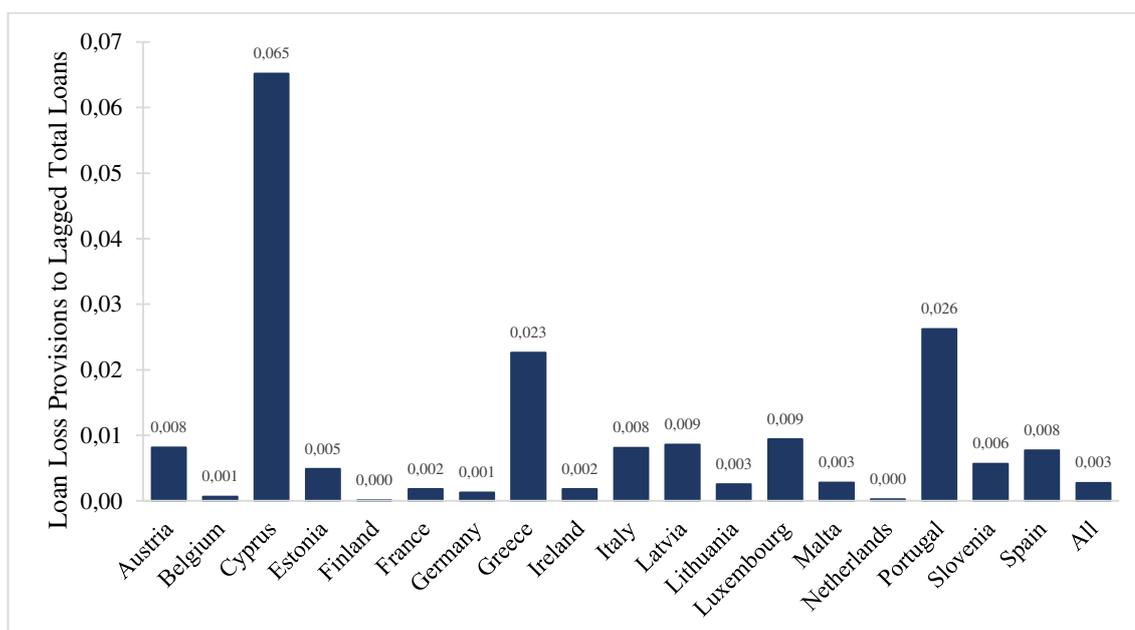


After looking at the size and the profitability of the sample banks, now the focus is on the last independent variable – the degree of earnings management. Figure 10 exhibits the median of the dimensionless LLP to Lagged Total Loans ratio per country. As explained before, the higher the ratio, the higher the degree of earnings management and the lower the earnings quality. The highest median can be observed for Cyprus with a ratio of LLP to Lagged Total Loans of 6.5% followed by Portugal with 2.6% and Greece with 2.3%. The lowest median LLP to Lagged Total Loans ratio has Finland with 0.005% and the Netherlands at 0.02%.

During the profitability analysis it was outlined that bad performance of Portuguese and Cypriot Banks are due to poor loan quality - which also applies to Greek banks. Thus, it can be argued that the relatively high ratio is justified due to the low credit quality and the therefore higher turnover of the Loan Loss Allowance account. However, in the absence of an appropriate alternative measure instead of the risk provisioning, it will be focused on the LLP to Lagged Total Loans ratio.

¹⁶¹ cf. Bank of Cyprus Holding Public Limited Company (2018) pp.3&13

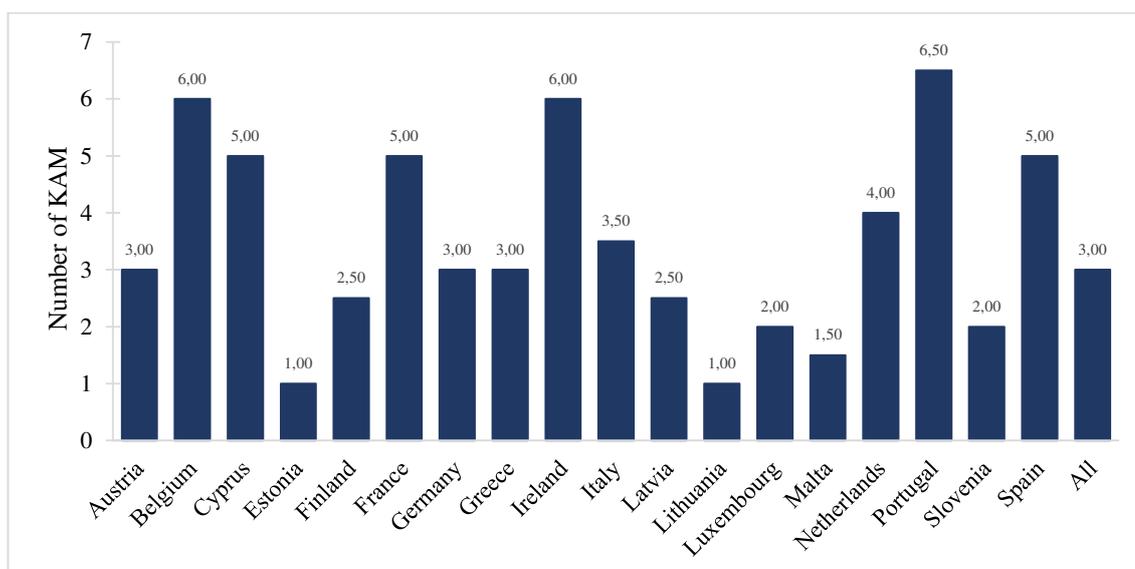
Figure 10: Banks's Median Loan Loss Provision to Lagged Total Loans Ratio for the Sample Countries



Lastly, look at the differences between the countries regarding the average number of KAM reported has to be taken. Figure 11 exhibits the median number of reported KAM for banks in each country. The highest median can be found for Portugal with 6.5 KAM closely followed by Ireland and Belgium with both 6 KAM. The lowest medians have Estonia and Lithuania with both 1 KAM and the median across the whole sample is 3 KAM. If the average of the number of KAM across the sample is taken instead, the outcome is a number of 3.4 which is nearly identical to the average number of KAM the FRC finds in their analysis and well above the findings of the ACCA.

The fact that Portugal exhibits the highest median intriguing, as there are only two Portuguese banks in the sample and Novo Banco is currently struggling with a wide range of difficulties. Therefore, those results suggest that the number of reported KAM increases when a bank faces severe problems.

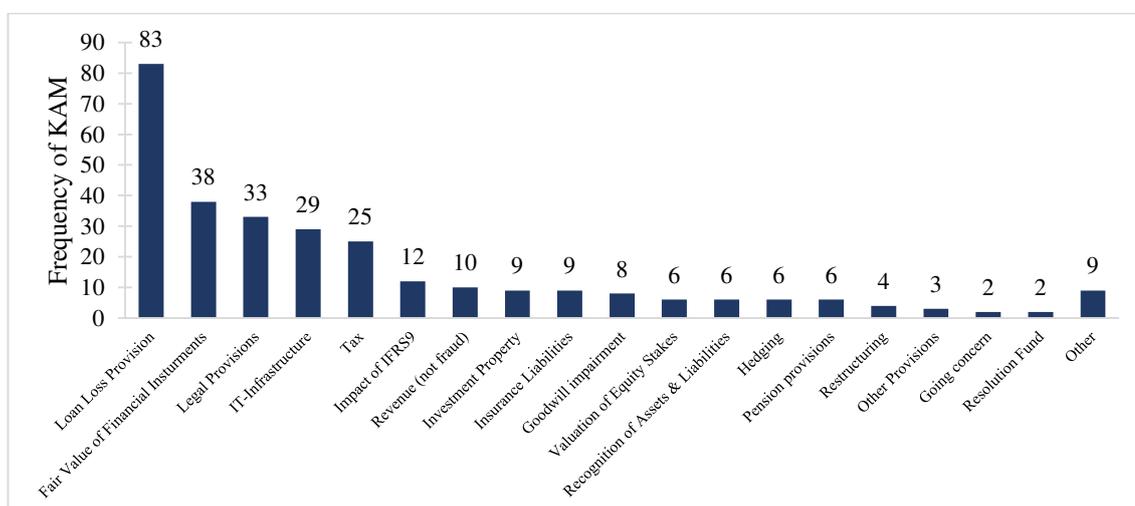
Figure 11: Banks's Average Number of KAM for the Sample Countries



5.1.2. Key Audit Matters Reported for the Sample

Figure 12 exhibits the absolute frequency for the 27 topic clusters. Overall, 308 KAM are reported for the banks in this sample. The most frequently reported KAM is the Impairment of Loan, with 83 occurrences. There are only seven banks in the sample that do not report this specific KAM, meaning that a staggering 92% of the banks *do*. The second most frequently reported KAM is the Fair Value of Financial Instruments KAM with a total of 38 occurrences, closely followed by the Legal provisions, the IT infrastructure, and the Tax KAM with 33, 29, and 25 occurrences respectively. The top five categories alone make up 67.5% of total KAM reported of that sample. The IT-Infrastructure KAM can be regarded as a control topic, whereas the other four are risk topics.

Figure 12: Reporting Frequency for KAM Clusters



The LLP KAM refers to risks arising from the impairment of financial assets accounting policy and the loans and advances accounts on the balance sheet. IAS 39 aims to identify impairment losses on loans primarily on an incurred loss basis (individual loan losses). Nevertheless, if there are indications that a loan will be impaired in the future, the management might recognize a provision that is needed to cover the expected losses based on the value of the future cash flows today. Auditors find it difficult to control these provisions given the level of management judgement involved and the possible impact of a potential impairment on the result and equity.¹⁶²

The FVFI KAM refers to the difficulties of the auditor to control the fair value of level 2 and level 3 financial instruments not quoted in active markets. For those instruments, valuation models are used by the banks though are subject to management judgment regarding the input variables. As the models are very complex, the audit can be very resource-intensive.¹⁶³

The Legal Provision KAM can be divided into a general and a specific group. The general group recognizes the risks arising from the increase in regulator and administrative investigations and class actions against credit institutions in the recent years and thus, the potential amount of legal provisions needed.¹⁶⁴ The specific group of Legal Provision KAM on the other hand covers specific ongoing litigations and the provisions that are created to cover the costs. For the evaluation of the provisions associated with litigations, the auditors need costly outside expertise, thus they report this topic as a KAM.¹⁶⁵

In the IT KAM, the auditors state their concerns about the integrity of data for the creations of the financial statements due to malfunctions of the IT access management and the impact of IT outages on essential business processes.¹⁶⁶

The Tax KAM covers the recognition practices of deferred tax assets, which are subject to discretion regarding future taxable profit and therefore, the usability of tax losses and tax credits in the future.¹⁶⁷

¹⁶² cf. Bank Nederlandse Gemeenten (2018) p.272

¹⁶³ cf. Bank Nederlandse Gemeenten (2018) p.271

¹⁶⁴ cf. BNP Paribas (2018) p.242

¹⁶⁵ cf. BAWAG Group (2018) p.221

¹⁶⁶ cf. Deutsche Bank AG (2018) p.374

¹⁶⁷ cf. Deutsche Bank AG (2018) p. 372

In comparison to the top five most frequently reported KAM with the results of the FRC some similarities and some differences can be seen. For example, the Impairment of Asset KAM is as well the most frequently reported KAM for banks (Loan Loss Provision KAM). Another similarity is the high frequency of Tax KAM for both samples. The Fair Value of Financial Instruments on the other hand seems to be a bank specific KAM and is therefore more often observed in the sample. The same is true for the Legal Provisions and IT KAM, which are in the top five KAM for banks, but only on place 13 and 25 for the sample of the FRC respectively. Thus, the KAM reporting deviates between banks and the FTSE 350 companies.

Another surprising result is the low frequency of the Impact of IFRS 9 KAM for the sample. Only for 12 banks report a KAM with this regard, even though this reporting standard will replace IAS 39 from the 1st of January 2018 onwards and will have significant impact on the opening balance sheets.¹⁶⁸

¹⁶⁸ cf. Bank Nederlandse Gemeenten (2018) p. 275

5.2. Influential Factors for Key Audit Matters Reporting

5.2.1. Analysis of the Effect of Complexity on the IT Key Audit Matter Reporting

Table 1 presents the results of the Logit regression analysis that predicts the change in probability to find a KAM regarding the information technology infrastructure with an increase in the banks' size. Model (1) accounts for the independent variable logarithmic total assets; Model (2) accounts for the independent variable number of employees; Model (3) accounts for both independent variables; and Model (4) accounts for both independent variables and the auditor dummy variables. The logarithmic total assets are used in order to obtain a sample that is closer to a normal distribution.

It is important to state that the number of observations for Model (4) exceeds those for Models (1) – (3) since multiple data points for banks following a joint-audit approach are included in the analysis to provide a true picture of the differences between auditors. This approach is applied throughout all regression analyses in chapter 5.2.. Thus, the results of regressions that include the auditor dummy variables for the auditors have no implications on the interpretation of the results for H1, H2 and their respective sub-hypotheses.

In *H1a* was argued that firm size increases the organizational complexity due to the implementation of additional management layers. Furthermore, larger banks tend to incorporate a larger number of subsidiaries with a wider spectrum of business activities, which results in greater challenges for the IT infrastructure due to increased complexity. The reasons for this phenomenon are the inflexibility of systems, overlapping and redundant systems or excessive interfacing.¹⁶⁹

¹⁶⁹ cf. Boochever *et al.* (2009) p.11

Table 1: Logit Regression Analysis of the Effect of Size on IT KAM Frequency

VARIABLES	(1) Model	(2) Model	(3) Model	(4) Model
Number Employees		1.62e-05* (6.70e-06)	3.00e-06 (7.79e-06)	-1.42e-06 (6.67e-06)
lnTA	0.406** (0.124)		0.365* (0.161)	0.484** (0.174)
KPMG				-0.0358 (0.610)
EY				-0.230 (0.725)
Deloitte				-0.0348 (0.675)
Mazars				-0.647 (1.577)
Cailliau Dedouit et Associés				-
Constant	-5.130** (1.397)	-1.103** (0.269)	-4.745** (1.679)	-5.927** (1.838)
Observations	91	91	91	98

Standard errors in parentheses

** p<0.01, * p<0.05

The results of the Logit regression analysis confirm the intuition and *H1a*. In Model (1) the positive $\beta_{\ln TA}$ estimator for logarithmic total assets is significant to the 99% level with a z-score of 3.28. The same is true for the second measure of size in Model (2) with the positive $\beta_{\#Employees}$ estimator for number of employees, at 95% with a z-score of 2.42. Plugging both independent variables into one logit regression as in Model (3), it can be seen that the positive $\beta_{\ln TA}$ estimator for logarithmic total assets stays significant with a z-score of 2.27, whereas the $\beta_{\#Employees}$ does not. The findings imply that the frequency of the reporting of an IT KAM is positively affected by total assets rather than number of employees.

An explanation is that banks with larger assets tend to change their business model from a simple lending business towards a combination of asset management, wealth management, brokerage, financial advisory, trading, and securitization business.¹⁷⁰ Banks that only rely on the lending business do often have a wide spread branch system that needs a lot of employees. Therefore, the number of employees does not need to increase

¹⁷⁰ cf. Cetorelli *et al.* (2014) p.20

significantly during this transformation, but eventually the employees of the banks become more specialised. The total assets on the other hand are positively correlated with the ratio of financial instruments to total loans (FITL) as shown in the next table. Hence, for banks with more total assets, the balance sheet comprises more financial instruments other than loans which indicate a wider range of products offered to customers and thus induces more business complexity.

Table 2: Pearson Correlation of Financial Instruments/Total Loans to Total Assets

Variables	(1)	(2)
(1) FI/TL	1.000	
(2) Total Assets	0.174	1.000

Next step is to evaluate if there are differences between the audit firms in regard to the frequency of the reporting of an IT KAM (*H3*). For this purpose, look at the results of Model (4) in Table 1, where three dummy variables are added for the audit companies KPMG, EY, Deloitte, Mazars and Cailliau Dedouit et Associés to the logit regression. PwC is the reference category since it is the most frequently occurring auditor in the sample. While the significance of logarithmic total assets for the reporting stays unchanged, none of the auditor dummy variables shows significance. Therefore, there are no differences regarding the reporting frequency of IT KAM for the different auditors.

Lastly, it is meaningful to prove *H2a*, which states that for large banks more KAM are reported due to increased complexity. Table 3 shows the results of the linear regressions where Model (1) accounts for the independent variable logarithmic total assets; Model (2) accounts for the independent variable number of employees; and Model (3) for both independent variables.

As before, there are significant results at the 99% level for both estimators in the single factor models (1) and (2), but in the multi-factor model (3) only the estimator for logarithmic total assets yields a significant result. Since now the results of a linear regression with constant rate of change can be observed, the effect for the significant independent variable can be calculated. Therefore, a one percentage change in total assets is associated with a $0.303 * \ln\left(\frac{101}{100}\right) = 0.003$ increase in the number of KAM reported for the bank. With the $\beta_{\ln TA}$ estimator for logarithmic total assets being significant, *H2a*

is confirmed, which means that there are more KAM reported for larger banks due to higher complexity and more difficult auditing processes.

Table 3: Linear Regression of the Effect of Size on the Number of Reported KAM

VARIABLES	(1) Model	(2) Model	(3) Model
lnTA	0.357** (0.0639)		0.303** (0.0820)
Number Employees		1.62e-05** (4.00e-06)	5.08e-06 (4.81e-06)
Constant	-0.353 (0.679)	3.026** (0.178)	0.110 (0.808)
Observations	91	91	91
R-squared	0.260	0.156	0.269

Standard errors in parentheses

** p<0.01, * p<0.05

5.2.2. Analysis of the Effect of Size on the Tax Key Audit Matter Reporting

Table 4 exhibits the results of the Logit regression analysis that predicts the change in probability to find a KAM regarding deferred tax assets with an increase in the banks' size or a subsidiary in the US. Model (1) accounts for the independent variable logarithmic total assets; Model (2) accounts for the independent dummy variable subsidiary in the US; Model (3) accounts for both independent variables logarithmic total assets and the dummy variable subsidiary in the US; and Model (4) takes the different auditors into consideration as well.

The justification of *H1b* was mainly based on the tax reform in the US, which was passed in late 2017 and therefore affects the tax provision accounts for this past fiscal year. This argumentation emerged after reading the Tax KAM of Deutsche Bank, where the auditor states that “[...] the Group has reduced the carrying amount of deferred tax assets by € 1.4 billion due to the US tax reform”¹⁷¹. It can be assumed that larger banks, due to growth constraints in their home country and to serve the customers' needs in the globalisation process, have more subsidiaries abroad and therefore are more likely to own a subsidiary in the US as well.

¹⁷¹ Deutsche Bank AG (2018) p.372

Table 4: Logit Regression Analysis of the Effect of Size on the Frequency of Tax KAM

VARIABLES	(1) Model	(2) Model	(3) Model	(4) Model
lnTA		0.318** (0.118)	0.534** (0.175)	0.491** (0.179)
Subsidiary US	0.318 (0.485)		-1.304 (0.707)	-1.055 (0.731)
KPMG				-0.826 (0.696)
EY				0.0872 (0.709)
Deloitte				1.443* (0.677)
Mazars				-
Cailliau Dedouit et Associés				-
Constant	-1.012** (0.292)	-4.315** (1.333)	-6.192** (1.797)	-5.940** (1.867)
Observations	90	90	90	96

Standard errors in parentheses

** p<0.01, * p<0.05

A look at the single factor Logit regression models (1) – (3) shows that only the $\beta_{\ln TA}$ estimator for logarithmic total assets is significantly different from 0 to the 99% level with a z-score of 2.69. Hence, the size measured by total assets indeed has a positive influence on the probability of a tax KAM being reported. However, there is no evidence that this KAM is driven by the US tax reform, as the dummy variable subsidiary in the US, which controls whether a bank is subject to the US tax authorities show no significance.

This result is further strengthened by Model (3), in which for both independent variables is controlled. This control allows to filter the logarithmic total assets for the effect of the US tax reform. The $\beta_{\ln TA}$ estimator for logarithmic total assets stays significantly different from 0 to the 99% level with a z-score of 3.05. The $\beta_{Subsidiary\ US}$ estimator for the binary dummy variable subsidiary in the US on the other hand is not significant. Thus, it has to be assumed that the tax reform in the US does not affect the decision of the auditor at all in regard to the reporting of a Tax KAM, whereas the size plays a role.

The explanation for this result is the following: taking a look at the composition of the banks for which a Tax KAM is reported, it is possible to categorize them into two different groups. The first group consists of very large banks compared to the median sized bank in this sample, such as BNP, Société Générale, BPCE, Deutsche Bank, and Commerzbank. The second group comprises mostly Southern European banks.

According to a publication of the BNP Paribas Economic Research Department, especially Southern European banks have built up enormous positions of deferred tax assets due to the high level of non-performing loans and the bad economic conditions following the financial crisis. For all those banks the deferred assets make up a significant percentage of the total assets and there are reasonable doubts that the banks' performances in the upcoming years are sufficient to recover the deferred tax assets. For the first group, the ratio of deferred tax assets to total assets might be lower, however the sheer size of the banks and the absolute amount for deferred tax assets are so large that the recoverability is uncertain as well.¹⁷²

Since the median size of Italian and Spanish banks is greater than the sample median, as explained in chapter 5.1.1., and it is additionally accounted for the factor of the first group, the explanation for the finding that for larger banks the probability of a Tax KAM to be reported rises, which in fact proves *H1b* even though the transmission channel is different.

The Logit regression for Model (4) yields interesting results as well. The $\beta_{Deloitte}$ estimator is significantly different from 0 at the 95% level with a z-score of 2.26. This result suggests, that a Tax KAM can be seen more often for banks that are audited by Deloitte, compared to the other auditors. This result proves *H3*.

5.2.3. Analysis of the Effect of Success on the Restructuring Key Audit Matter Reporting

Table 5 exhibits the results of the Logit regression analysis that predicts the change in probability to find a KAM regarding restructuring with an increase in the banks' success. Hereby Model (1) accounts for the independent variable net income; and in Model (2) the dummy variables for the auditors is added. Only KPMG provides an β estimator, since EY, Deloitte, Mazars and Cailliau Dedouit et Associés do not report a single Restructuring KAM and are therefore omitted.

¹⁷² cf. Humblot (2017) p.1

As explained for *H1c*, European banks work in a difficult environment with increasing competition. In order to retain their market-share and achieve sustainable growth, the banks have to adapt to the new trends. The erosion of the traditional business models severely hurts their success. Therefore, it is necessary for less successful banks to implement huge restructuring programmes.

Table 5: Logit Regression Analysis of the Effect of Success on the Frequency of Restructuring KAM

VARIABLES	(1) Model	(2) Model
Net Income	-0.0005196 (0.0005581)	-0.00112 (0.00114)
KPMG		-0.527 (1.269)
EY		-
Deloitte		-
Mazars		-
Cailliau Dedouit et Associés		-
Constant	-3.209** (0.591)	-2.560*** (0.744)
Observations	90	64

Standard errors in parentheses

** p<0.01, * p<0.05

The statistical analysis of *H1c* does not produce significant results. The β_{NI} estimator for net income in Model (1) has a z-score of -0.97 and is thus not significantly different from 0. Therefore, net income does not influence the probability to find a KAM regarding restructuring. Model (2), in which the auditor dummy variables are added, does not yield significant results either thus *H3* is not further strengthened.

The non-significant outcomes can be explained with the limited observations in this sample. Aareal Bank, Commerzbank, and HSH Nodbank are the only three banks for which a Restructuring KAM is reported by the audit companies. All three banks are German-based, which is in line with the banking sector analysis in chapter 5.1.1. However, since as stated in said chapter that Spanish and Italian banks are currently in a restructuring process as well, it is surprising that this KAM can not be identified more often. This implies that apparently, audit companies do not identify a restructuring process to be of particular importance in audits.

Now, knowing that the net income has no influence on the probability to find a KAM regarding restructuring, the relationship between net income and the reported number of KAM has to be analysed more. Two linear regressions with the dependent variable being the number of KAM reported are performed. Model (1) accounts for the effect of net income on the number of KAM; and Model (2) accounts for the effect of net income and the logarithmic total assets on the number of KAM.

It could be expected that the number of KAM is negatively correlated with net income, since more profitable banks are assumed to have less non-performing loans, a better cost structure, and a higher nominal growth.¹⁷³ Looking at the results of Model (1) in table 6 this expectation is, however, not fulfilled.

Table 6: Linear Regression of Success on the Number of KAM

VARIABLES	(1) Model	(2) Model
Net Income	0.000319** (8.85e-05)	3.52e-05 (8.89e-05)
lnTA		0.407** (0.0685)
Constant	3.174** (0.174)	-0.830 (0.690)
Observations	90	90
R-squared	0.129	0.380

Standard errors in parentheses

** p<0.01, * p<0.05

The positive $\beta_{net\ income}$ estimator for the independent variable net income is significantly different from 0 at the 99% level with a t-score of 3.60. This means in fact that net income could be a driver for the reporting of more KAM instead of decreasing the number of KAM. Measuring net income in million Euros for the sample, Model (1) suggests that if net income rises by one million Euro, the number of reported KAM will increase by 0.0003. Yet, considering the results of Model (2), the significance for the $\beta_{net\ income}$ estimator vanishes when adding the independent variable logarithmic total assets. The β_{lnTA} estimator on the other hand is significantly different from 0 at the 99% level with a t-score of 5.94. Since both variables are positively correlated with a correlation coefficient of $\rho = 0.537$ it can be assumed, that net income in Model (1) is only significant due to it functioning as a proxy for size. The results of this regression further strengthen the results

¹⁷³ cf. Culp (2017).

for *H2a*, suggesting that the main driver for the number of KAM is the complexity of a business. *H2b* on the other hand needs to be rejected.

5.2.4. Analysis of the Effect of Earnings Management on the Loan Loss Provision and Fair Value of Financial Instruments Key Audit Matter Reporting

Table 7 presents the results of the Logit regression analysis that predicts the change in the probability to find a KAM regarding LLP with an increase in EM. Model (1) accounts for the independent variable earnings management; Model (2) accounts for the independent variable loan loss provisions; Model (3) accounts for the independent variable logarithmic total loans; and Model (4) accounts for the independent variables earnings management and the different auditors. The logarithmic total loans are used in order to obtain a sample that is closer to a normal distribution. Since LLP/ Lagged Total Loans is the dimensionless measure for the detection of EM proposed by literature, the answer to *H1d* can be found in Model (1).¹⁷⁴

In *H1d* it was argued that auditors will report KAM regarding the LLP more often if there exists a high degree of EM. There are two categories of EM: accruals management and real earnings management. With the latter being costlier for a company, most research investigates on accruals management.¹⁷⁵ The most important discretionary accrual for banks are the LLP.¹⁷⁶ Therefore, auditors need to particularly focus on LLP to secure the correctness of the reported earnings and a statistical coherence between the LLP KAM and the degree of EM can be expected.

Table 7: Logit Regression Analysis of the Effect of EM on the Frequency of LLP KAM

VARIABLES	(1) Model	(2) Model	(3) Model	(4) Model
EM	14.43 (19.07)			18.12 (20.96)
KPMG				-0.493 (0.629)
EY				-0.348 (0.801)
Deloitte				0.343

¹⁷⁴ cf. Beatty and Liao (2014) p.27

¹⁷⁵ cf. Lo (2008) p.4

¹⁷⁶ cf. Beatty and Liao (2014) p. 23

				(0.881)
Mazars				-
Cailliau Dedouit et Associés				-
LLP		0.000101 (0.000254)		
lnTL			0.0170 (0.105)	
Constant	1.346** (0.302)	1.417** (0.297)	1.306 (1.051)	1.492** (0.458)
Observations	91	91	91	96

Standard errors in parentheses
** p<0.01, * p<0.05

Unfortunately, the logit regression does not yield significant results, and the control Models (2) – (3) do not yield significant results for any of the variables either. Therefore, the hypothesis has to be rejected and the intuition, that auditors report KAM with regard to LLP less often for banks with high earnings quality.

One explanation for this unsatisfactory result could be the frequency with which LLP KAM are reported. It could be seen earlier in this chapter, that 83 of the 90 banks have a KAM with the topic of LLP. It appears as if the auditors are taking this topic very seriously and put a lot of resources in the audit, regardless of the EM track record. This can be explained by the audit companies' fear to face lawsuits for allegedly allowing EM to overstate the actual earnings.¹⁷⁷

Another factor that might have influenced the results is the negative correlation between the quality of the auditor and EM. Becker et. al find evidence that companies with low quality auditors report discretionary accruals on average 1.5% – 2.1% of total assets higher than the discretionary accruals reported by companies with high quality auditors. The authors define high quality auditors as auditors that are part of the Big Six^{178, 179}. The former Big Six are nowadays referred to as the Big Four and all banks in the sample are

¹⁷⁷ cf. St.Pierre and Anderson (1984) p.257

¹⁷⁸ The Big Six comprised EY, Deloitte – Touche, KPMG, Arthur Anderson, Price Waterhouse, Coopers & Lybrand

¹⁷⁹ cf. Becker *et al.* (1998) p.6

audited at least by one Big Four auditor. Therefore, it can be assumed that all banks are audited by a high-quality auditor which limits the possibility to pursue EM.

Lastly, the underlying assumption regarding the measurement of EM could be imperfect. It was shown earlier that the measure for EM was highest for banks which suffered from loan portfolios with significantly high credit risk and high exposure to the domestic market. Since the credit quality and economic conditions vary vastly across the Eurozone, it might be impossible to analyse the influence of EM across borders.

Model (4) further shows that there is no statistically difference in the reporting frequency between the audit firms which is against *H3*.

Table 8: Logit Regression Analysis of the Effect of EM on the Frequency of FVFI KAM

VARIABLES	(1) Model	(2) Model	(3) Model	(4) Model	(5) Model	(6) Model
EM	-36.71 (20.80)				-35.67 (23.21)	-19.48 (26.05)
LLP		2.85e-05 (0.000166)				-0.000408 (0.000263)
lnTL			0.310** (0.105)		-0.448 (0.482)	-0.550 (0.509)
lnTA				0.378** (0.114)	0.250 (0.665)	0.314 (0.714)
lnFI					0.538* (0.254)	0.771** (0.288)
KPMG						0.228 (0.668)
EY						-0.885 (0.870)
Deloitte						-1.613 (0.835)
Mazars						-
Cailliau Dedouit et Associés						-
Constant	-0.132 (0.253)	-0.441 (0.236)	3.528** (1.097)	-4.431** (1.251)	-2.738 (1.756)	-3.991 (2.020)
Observations	91	91	91	91	87	92

Standard errors in parentheses
 *** p<0.01, * p<0.05

Table 8 presents the results of the Logit regression analysis that predicts the change in probability to find a KAM regarding fair value of financial instruments with an increase in EM. Model (1) accounts for the independent variable earnings management measured by Loan Loss Provisions/ Lagged Total Loans, Model (2) accounts for the independent variable Loan Loss Provisions, Model (3) accounts for the independent variable logarithmic total loans, Model (4) accounts for the independent variable logarithmic total assets, and Model (5) for the independent variables earnings management, logarithmic total loans, logarithmic total assets, and logarithmic financial instruments. Additionally, Model (6) takes the auditors into consideration. Again, the logarithm of total loans and total assets is used in order to obtain a sample closer to the normal distribution.

Considering the results from Model (1), the hypothesis is rejected, that for banks with higher EQ and hence lower degree of EM a KAM with regard to FVFI is reported less often. With a z-score of -1.73 it is not possible to disprove that $\beta_{EM} = 0$. This result implies that EM does not play a role in the auditors' decision-making process to report the FVFI KAM. Model (2) does not yield significant results either. However, taking a look at the results of Model (3) it can be seen that the log Total Loans as a single factor yield a significant result with a z-score of 2.97 and a positive algebraic sign for the estimator, which also holds for Model (4) with a z-score of 3.33.

Table 9: Pearson Correlation of Log. Total Assets, Log. Financial Instruments, and Log. Total Loans

Variables	(1)	(2)	(3)
(1) lnTA	1.000		
(2) lnFI	0.867	1.000	
(3) lnTL	0.980	0.823	1.000

Log Total Loans is a proxy for overall size of a bank and larger banks unsurprisingly do have more financial instruments on their balance sheets, which is proven by the highly positive correlation presented in Table 9. Model (5) takes those three independent variables, together with the measure for EM, into consideration. The z-score of 2.12 for the positive estimator of logarithmic Financial Instruments in the Logit regression and insignificant results for all other independent variables confirms the intuition that the driver for the reporting probability of a FVFI KAM indeed is the number of financial instruments recognized on the balance sheet and not EM.

Even though the financial instruments account can be considered as the influential factor for the reporting of a FVFI KAM, the auditors take into account the risk arising from management discretion. PwC states in the independent auditor's report of the Bank Nederlandse Gemeenten N.V. that "*given the size of the financial instruments, any deviation in the main assumptions could have a significant impact on result and equity.*"¹⁸⁰ Therefore, EM might not be the driving factor for the reporting of a FVFI KAM itself, but it is the reason why auditors believe the FVFI is of critical importance.

¹⁸⁰ cf. Bank Nederlandse Gemeenten (2018) p.272

Model (6) provides results for the proposed Hypothesis 3; none of the auditor dummy variables shows significance, meaning that there are no differences in the reporting frequency between the audit firms.

Table 10: Linear Regression EM on Number of KAM

VARIABLES	(1) Model
EM	-4.723 (7.943)
Constant	3.472** (0.190)
Observations	90
R-squared	0.004

Standard errors in parentheses

** p<0.01, * p<0.05

Table 10 shows the results of the linear regressions that analyse the impact of the degree of EM on the number of KAM reported for the different banks. It was argued in *H2c*, to expect to find more KAM for banks with a higher degree of earnings management. The results reject this hypothesis, as the coefficient for EM is not significant with a t-score of only -0.59. Thus, EM does not affect the number of reported KAM.

5.3. Differences between the Audit Firms

5.3.1. Analysis of the Number of Reported Key Audit Matters by the Different Audit Firms

The results for *H3* show the existence of significant differences in the reporting frequency of specific KAM between the audit firms, since Deloitte is reporting Tax KAM more often than its peers. Now, the focus shifts to the question of whether there are differences between the auditors with regard to the number of reported KAM (*H4*). This study suggested earlier that this may be the case due to variations in the general understanding of KAM between the auditors.

Figure 13: Relative Frequency of Reported Number of KAM

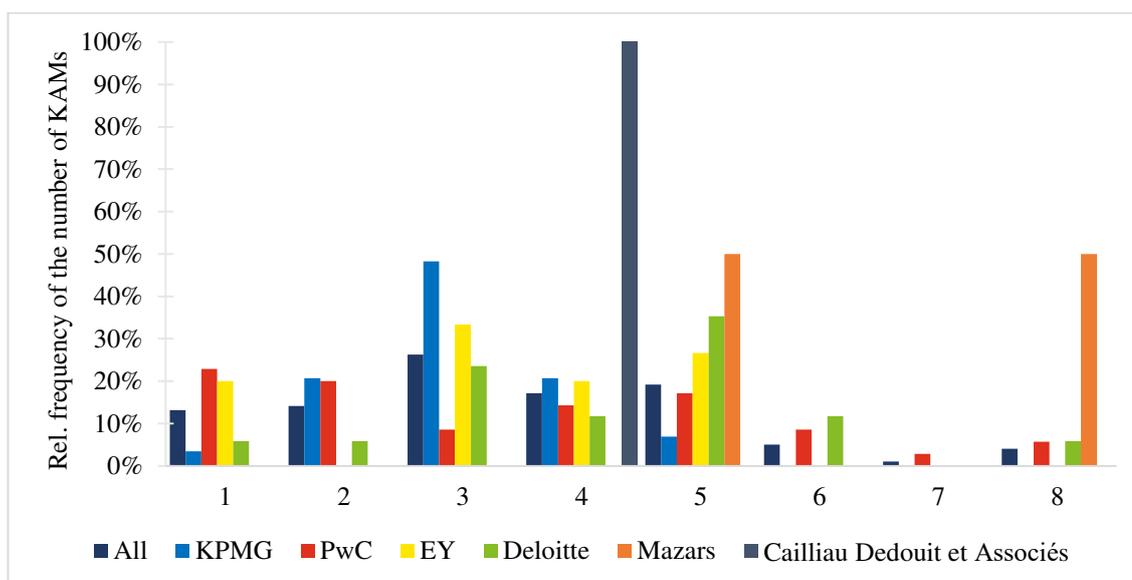


Figure 13 exhibits the relative frequency of the number of reported KAM for the whole sample and the different audit companies. The minimum number of reported KAM for a bank is one and the maximum number of KAM is eight. The maximum is observed for the French BNP Paribas and the Portuguese Novo Banco. The most frequently reported number of KAM for the sample is three, clearly driven by KPMG and EY who report this number in 48% and 33% of their audits respectively. The most commonly observed number of KAM for banks audited by PwC is one and five for those audited by Deloitte. The results for the non-Big Four audit companies Mazars and Cailliau Dedouit et Associés are 5 and 8 with same frequency for Mazars and 4 for Cailliau Dedouit et Associés. However, due to the limited number of observations for both companies these results have only very limited explanatory value.

These results suggest that Deloitte reports more KAM than the other audit firms, as the banks that they audit have more than three KAM in 65% of the observations. This of course affects the average number of reported KAM, which is highest for Deloitte with 4.3, followed by PwC with 3.5, EY with 3.3, and KPMG with 3.1. This data does lean towards the suggestion that Deloitte reports more KAM than the others and that there actually is a difference between the audit firms.

However, this turns out to be a fallacy looking at the results of the linear regression in the following table. In Model (1) the number of reported KAM is regressed on the dummy variables for the audit firms, the net income, the logarithmic total assets, and the earnings management measure.

Table 11: Linear Regression for the Effect of the Auditor on the Number of KAM

VARIABLES	(1) Model
KPMG	-0.502 (0.334)
EY	-0.567 (0.426)
Deloitte	0.172 (0.409)
Mazars	1.207 (0.995)
Cailliau Dedouit et Associés	0.856 (1.340)
Net Income	6.58e-05 (8.16e-05)
lnTA	0.409** (0.0708)
EM	4.530 (6.824)
Constant	-0.736 (0.721)
Observations	99
R-squared	0.460

Standard errors in parentheses

** p<0.01, * p<0.05

Since none of the β estimators for the audit firms is significantly different from 0, the result proves that there is no statistically difference between Deloitte, EY, KPMG, Mazars, Cailliau Dedouit et Associés, and PwC. Therefore, $H4$ has to be rejected. The factor that is of significance for the number of reported KAM is the size of a bank. Thus, the reason why the average number of reported KAM for Deloitte is greater than for the other audit firms is that they simply audit comparably larger banks, which is proven by the positive Pearson correlation of 0.23 between logarithmic total assets and the dummy variable for Deloitte.

5.3.2. Analysis of Text Similarities of Key Audit Matters Between the Different Audit Firms

In order to find an answer for Hypothesis 5, the texts for the most frequently reported KAM have to be compared. The process is started by creating separate documents for each bank and KAM; i.e. if an auditor happened to report a LLP, FVFI, IT, Legal, and

Tax KAM for a bank, there would be five different word documents for that bank. Afterwards, the bank with the longest text for each of the five KAM is identified. The reason for this is that these banks are later used as the basis for the comparison. The potential to find standardized text passages would naturally increase with the word count, as auditors might fill up the descriptions with boilerplate language in order to increase it. The banks with the longest description for the LLP, FVFI, IT, Legal, and Tax KAM were Novo Banco for LLP, Bank Nederlandse Gemeenten for FVFI, Deutsche Bank for IT, Rabobank for Legal, and Eurobank for Tax.

After finishing the previous steps, the plagiarism comparison functions of a free online tool called Prepostseo¹⁸¹ which uses an algorithm to compare the text of two documents for duplications is used.¹⁸² The tool checks for similarities and shows them a) as a percentage value of the text and b) graphically by highlighting the matching text passages. For the results of the further analysis the matching frequency is expressed in rates.

It is argued for *H5* that annual report readers prefer bank specific texts rather than the use of boilerplate language, since this decreases the informational value. It can be expected high matching percentage values if auditors mostly use standardized wording and vice versa low matching percentage values, if they use bank specific texts. In a nutshell, there must be low matching rates in order for *H5* to be demonstrated.

¹⁸¹ The comparison tool can be accessed using the following link: <https://www.prepostseo.com/plagiarism-comparison-search>

¹⁸² cf. Satter (2018).

Figure 14: Average Percentage Value of Textual Similarity between the Auditors for the most frequent KAM

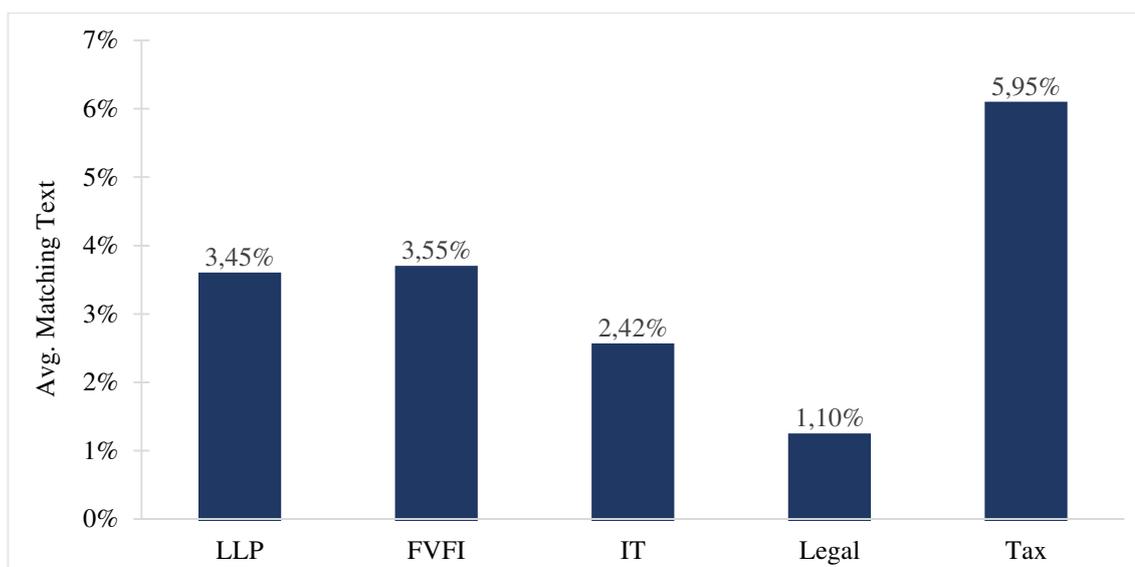


Figure 14 exhibits the average matching percentage value between the audit firms for each of the most frequently reported KAM. The highest matching percentage value is found for Tax KAM with 5.95%, followed by FVFI with 3.55%, LLP with 3.45%, and IT KAM with 2.42%. The lowest value on the other hand is found for Legal KAM with 1.10%. The overall low percentage values for the text comparison analysis indeed suggest that *H5* can be accepted and that the auditors do not use common standardized wording.

In general, most of the matching percentage arises from the matching of specific dates¹⁸³, matching common expressions, such as “as well as”, and matching technical terms; e.g., loans loss provisions, deferred tax assets or level 3 financial instruments.¹⁸⁴ However, there are two exceptions from this observation.

The first exception is the similarity between Eurobank’s and National Bank of Greece’s descriptions for the Tax KAM. The banks have a 28% matching rate mainly due to sentences such as the following:

[...] is dependent on the Banks and Groups ability to generate future taxable profits sufficient to [...]”^{185,186}, “[...] projections required to cover the time horizon up to the

¹⁸³ The 31st of December 2017 is a common date in most reports as it marks the end of the reporting cycle and thus the fiscal year.

¹⁸⁴ All examples are passages that were highlighted by the text comparison tool.

¹⁸⁵ EUROBANK ERGASIAS S.A. (2018) p.48

¹⁸⁶ National Bank of Greece S.A. (2018) pp.62-63

legal expiration of the period within which the deferred tax assets can be recovered and the adjustments required to derive the estimated tax profits from [...]”^{187,188}, and “[...] sensitivity analysis to determine the effect of changes in the assumptions and how estimation uncertainty may affect Banks and Groups projected profitability. For the purpose of our recoverability assessment [...]”^{189,190}.

The second exception is the similarity between Bank Nederlandse Gemeenten’s and Rabobank’s descriptions for the FVFI KAM. Here, the banks have a 14% matching rate because of the sentences:

[...] market prices or other market information is available, there is available, there is a high degree of objectivity involved in determining the fair value (level 1 financial instruments)”^{191,192}, “[...] in which judgements made by management and the use of assumptions and estimates such as market prices, [...], correlation and volatilities are important factors.”^{193,194}, and “[...] could have a significant impact on result and equity. Our audit work included, amongst others, understanding [...]”^{195,196}.

Even though there are some sentence similarities for both outliers, the still relatively small matching rate proves that the overall text is quite specific. One explanation for the similarities could be, that the auditors exchanged some of their thoughts before they created the auditor’s report. This assumption arises from the fact that Eurobank and National Bank of Greece are Greek and audited by PwC; and similarly, that Bank Nederlandse Gemeenten and Rabobank are Dutch and audited by PwC as well.

¹⁸⁷ EUROBANK ERGASIAS S.A. (2018) p.48

¹⁸⁸ National Bank of Greece S.A. (2018) pp.62-63

¹⁸⁹ EUROBANK ERGASIAS S.A. (2018) p.48

¹⁹⁰ National Bank of Greece S.A. (2018) pp.62-63

¹⁹¹ Bank Nederlandse Gemeenten (2018) pp.271-272

¹⁹² Rabobank (2018) p.273

¹⁹³ Bank Nederlandse Gemeenten (2018) pp.271-272

¹⁹⁴ Rabobank (2018) p.273

¹⁹⁵ Bank Nederlandse Gemeenten (2018) pp.271-272

¹⁹⁶ Rabobank (2018) p.273

6. Conclusion

The European Union and the IAASB both amended their legal and requirements framework with regard to the audit report in reaction to the financial crisis. The introduction of a new section which addresses Key Audit Matters, is thought to increase the informational value and so works to reduce the information gap. The structure of the KAM reporting is well defined however, the KAM identification process highly depends on the auditor's discretion, experience, and other human limitations.

Since the FRC already implemented the ISA 701 in UK and Ireland for the audit of financial statements for the fiscal year 2013, researchers mainly focused on the annual reports of FTSE companies to understand the implications that the new regulation will have for the PIEs in Europe. The 2017 fiscal year may mark a turning point as the first year in which all European PIEs needed KAM in their annual reports and thus the number of companies that can be analysed tremendously increases, which allows a clear focus on a specific industry.

The analysis of the sample Eurozone banks shows that most banks are either German, Dutch, Italian, Spain or France based and have a total asset median of €50.881 billion. The average number of KAM reported is 3.4, which is in accordance with previous research results regarding the FTSE. The most frequently reported KAM are LLP, FVFI, Legal, Tax, and IT KAM. Hence, the main topics differ between the banking sector and the broad market where FVFI, Legal, and IT KAM play a minor role.

The results of the Logit analysis demonstrate the application of *H1*, which states that there exist factors that influence which KAM are being reported. The size indeed increases the probability to find KAM with regard to IT and Tax. However, the argumentation presented for the derivation of *H1b* turns out to be incorrect, as it is not the US Tax Reform, but rather the size of the Deferred Tax Asset account that drive the reporting of this KAM. With regard to *H1c* there is no indication that the success of a bank influences the probability to find a restructuring KAM in the auditor's report. Nevertheless, the KAM is only reported three times within this sample banks, which suggests that auditors may not consider this topic as too critical. The last sub-hypothesis *H1d* needs to be rejected as well, as the EM independent variable is neither for the Logit regression for LLP KAM nor FVFI KAM statistically significant. After an additional analysis a magnitude of financial instruments other than loans on the probability of the reporting of

a FVFI KAM is found. Thus, the factors that drive the reporting of specific KAM are the size and the financial instruments.

The importance of the bank's size on the KAM reporting is further fortified by *H2*. While the success and the degree of EM do not influence the number of KAM that are reported, the size again yields significant results, as it is directly correlated to the number of reported KAM. With every 1% rise of total assets, the number of KAM increases by 0.003. This result again emphasizes the role that complexity plays for auditors in the KAM reporting process. Hence, similar to the first hypothesis, the second hypothesis is accepted as well.

The same is true for Hypothesis 3, where the reporting frequency of IT, Tax, FVFI, and LLP KAM between the audit companies is analysed. No evidence for differences in the reporting frequency for IT, FVFI, LLP and Legal KAM can be found. However, the results suggest that Deloitte is comparably more likely to report Tax KAM, as the dummy variable is statistically significant in the respective Logit regressions. Therefore, *H3* is accepted and it is shown that there exist differences between the audit firms.

Even though the average number of KAM reported differs between the audit companies – with the highest average observed for Deloitte – the difference is negligible nonetheless. The Linear regression that affects the dummy variables for the auditors together with size, success, and EM on the number of reported KAM show no significance for the auditors. The reason for the higher average of Deloitte is the correlation between the dummy variable Deloitte and size. Thus, *H4* needs to be rejected and the number of reported KAM does not differ between the audit firms.

The textual comparison analysis results for *H5* show that there are hardly any text similarities for the most frequently reported KAM between the auditors. The low percentage values of match indicate that auditors use bank specific wording instead of boilerplate language, which increases the information that is obtainable in the auditor's reports and is in line with the findings of the FRC for the second-year KAM reporting in the UK. Consequently, *H5* is accepted and the most often reported KAM further do not share text similarities.

The results for Hypotheses 1, 2 and 3 show that there exist bank specific factors that drive auditors in their KAM identification and reporting process. If these results are combined

with the outcomes for Hypothesis 5, it can be concluded that the introduction of KAM increased the informational value of annual reports and therefore, the implementation of such legislation can be regarded as a success for the readers.

Appendix

Name	Country	Auditor
Addiko Bank AG	Austria	Deloitte
Bank für Tirol und Vorarlberg Aktiengesellschaft	Austria	KPMG
BAWAG Group AG	Austria	KPMG
Erste Group Bank AG	Austria	PwC
Raiffeisenbank International AG	Austria	KPMG
Volksbank Wien	Austria	KPMG
Belfius Bank	Belgium	Deloitte
Dexia Bank	Belgium	Deloitte
KBC Group NV	Belgium	PwC
Bank of Cyprus Holdings Public Limited Company	Cyprus	EY
Bigbank AS	Estonia	EY
Coop Pank aktsiaselts	Estonia	PwC
LVH Group	Estonia	PwC
Aktia Bank	Finland	KPMG
Ålandsbanken Abp	Finland	KPMG
Evli Pankki Oyj	Finland	PwC
Munifin	Finland	KPMG
OP Osuuskunta	Finland	KPMG

Suomen Hypoteekkiyhdistys	Finland	PwC
BNP Paribas S.A	France	Deloitte, PwC, Mazars
BPCE	France	Deloitte, PwC, Mazars
Credit Agricole	France	PwC, EY
Banque Postale	France	KPMG, PwC
RCI Banque SA	France	KPMG, EY
Rothschild & Co	France	KPMG, Cailliau Dedouit et Associés
Société Générale S.A	France	Deloitte, EY
Aareal Bank AG	Germany	PwC
Bayern LB	Germany	Deloitte
Commerzbank	Germany	PwC
Deka Bank	Germany	KPMG
Deutsche Bank	Germany	KPMG
Deutsche Pfandbriefbank	Germany	KPMG
DZ Bank	Germany	EY
Helaba	Germany	PwC
HSH Nordbank	Germany	KPMG
LBBW	Germany	KPMG
NordLB	Germany	KPMG
ProCredit Bank	Germany	PwC
Wüstenrot	Germany	KPMG
Alpha Bank	Greece	Deloitte

Attica Bank	Greece	KPMG
Eurobank	Greece	PwC
National Bank of Greece	Greece	PwC
Piraeus Bank	Greece	Deloitte
AIB Group	Ireland	Deloitte
Bank of Ireland plc	Ireland	PwC
permanent tsb Group Holdings plc	Ireland	PwC
Banca Carige S.p.A	Italy	EY
Banca Farmafactoring S.p.A	Italy	PwC
Banca IFIS	Italy	EY
Banca Monte die Paschi di Siena	Italy	EY
Banca Sistema	Italy	KPMG
Banco Popolare	Italy	PwC
Intesa San Paolo	Italy	KPMG
Unicredit	Italy	Deloitte
AS BlueOrange Bank	Latvia	KPMG
AS Expobank	Latvia	PwC
Baltic Internation Bank	Latvia	KPMG
Citadele Banka	Latvia	KPMG
Latvijas pasta bank	Latvia	PwC
Rietumu Banka	Latvia	KPMG

Akcinė bendrovė Šiaulių bankas	Lithuania	PwC
Avanzia Bank S.A	Luxembourg	KPMG
Bank of Valletta plc	Malta	KPMG
IIG Bank (Malta) Ltd	Malta	PwC
Lombard Bank Malta plc	Malta	PwC
Medirect	Malta	PwC
ABN Amro	Netherlands	EY
Achmea Bank	Netherlands	PwC
Bank Nederlandse Gemeenten	Netherlands	PwC
BinckBank N.V	Netherlands	Deloitte
Coöperatieve Rabobank U.A	Netherlands	PwC
de Volksholding B.V	Netherlands	EY
ING Groep	Netherlands	KPMG
KAS Bank	Netherlands	PwC
Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden	Netherlands	EY
Nederlandse Waterschapsbank N.V	Netherlands	EY
Triodos Bank N.V	Netherlands	PwC
Van Lanschot Kempen N.V	Netherlands	PwC
Banco Comercial Português, SA	Portugal	Deloitte

Novo Banco	Portugal	PwC
Gorenjska Banka	Slovenia	Deloitte
Nova Ljubljanska Banka d.d. Ljubljana	Slovenia	EY
Banco de Sabadell, S.A	Spain	PwC
Banco Santander, S.A	Spain	PwC
Bankia	Spain	EY
BBVA	Spain	KPMG
CaixaBank, S.A	Spain	Deloitte
Kutxabank, S.A	Spain	Deloitte
Liberbank, S.A	Spain	Deloitte

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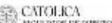
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