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Are Joint Audits a Proper Instrument for Increased Audit Quality?

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Joint audits are recently controversial discussed to increase audit quality and decrease audit market concentration in Europe, complementing the existing and future rotation rules by the 8th EC directive. First, this article presents a theoretical foundation of joint audits. In this context, the main influences on low balling are presented. The link between joint audits and audit quality is still controversial. Then, the main results of empirical research on joint audit are focused. A clear positive link between joint audits and audit quality cannot be found, but there is strong evidence for higher audit costs which could lead to an increased price competition. Insofar, a lower audit market concentration by joint audits is not generally connected with higher audit quality, because there are many corporate governance interactions. To test this hypothesis, we use a sample of 306 Germany and French companies between 2008 and 2012. Empirical results demonstrate unclear effect of the joint audit on audit quality in these two countries.

Keywords: Low balling; audit quality; empirical audit research; accounting policy; auditor independence; audit market concentration.

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JEL CLASSIFICATIONS

M4, H1, K2, G3

1. INTRODUCTION

The European standard setter has updated the professional standards of accountants and auditors in 2014 as a reaction to the capital markets' reduced reliance on financial accounting and auditing after the last financial crisis. The aim of this regulation is to increase audit quality by minimizing the expectation gap, increase auditor independence and prevent further audit market concentration [1,2,3]. Based on actual autonomy (auditor independence in fact) as well as on autonomy perceived as such by the capital markets (auditor independence in appearance), the audit reform contains several reform measures to strengthen auditor independence. In a green paper of 2010, the European Commission (EC) discussed the implementation of mandatory joint audits as a reform measure to increase audit quality. It was proposed to implement joint audits between a Big Four audit firm and a second tier company. The reform measure was justified by the existence of an oligopoly in the European audit market [4]. Also, mandatory joint audits might be another instrument for increased market dynamics. The EC proposed joint audits to reduce audit market concentration and to offer the possibility of becoming an active player in the market to the small auditor. France is the only EU member state, where listed companies are required by now to appoint two independent auditors, who share the audit mission and sign the audit report together. The aim of this regulatory provision was to improve auditor independence, but the indirect consequence of this legal rule is less concentration of the audit market compared to the other EU countries. After the finalization of the audit reform, mandatory joint audits are not introduced. The European standard setter has concentrated on external rotation and separating of audit and non audit duties [5,6].

The recommendation on joint audits is intended to increase financial statement credibility, increase audit quality and minimize audit market concentration in Europe. The voluntary character after the EU audit reform is a driving force for companies to reflect on the cost of this choice. This article mainly discusses the impact of joint audits on audit fees and audit quality in France and Germany. We present a sound theoretical

background of joint audits as well as a proper review of empirical audit research and introduce an empirical study for the French and German capital market. Chapter 2 gives an agency-theoretical foundation of joint audit with special consideration of concentration, auditor independence and low balling. In section 3, the existing empirical audit studies on joint audit are presented in detail. Chapter 4 contains the results of our own empirical study for the French and German capital market. A summary and recommendations for future research are given in chapter 5.

2. THEORETICAL FOUNDATION

2.1 Audit Market Concentration

Few big audit firms dominate the European audit market for listed companies. This oligopolization of the European audit market pushes small and medium-sized audit firms out of the market [4]. Furthermore, different reports have analyzed the impact of audit market concentration on an international level [7], e.g. the EC's "Green Paper" on "Audit Policy: Lessons from the Crisis", the report "Auditors: Market concentration and their role" from the House of Lords in the UK or the United States General Accounting Office's reports on "Public Accounting Firms: Mandated Study on Consolidation and Competition" and "Audits of Public Companies: Continued Concentration in Audit Market for Large Public Companies Does Not Call for Immediate Action". Over the past 25 years the audit market has undergone a development towards strong concentration.

The competitive situation in the audit market and the tendencies towards supplier concentration can be discussed through numerous approaches used in industrial economics. Here, explanations are sought for on how the number of market players and their competitive interaction along with market imperfections, generated by offering heterogeneous products and services, and market entry barriers or asymmetric information influences the market behavior and the market structure. According to the structure-conduct-performance paradigm, the market structure is determined by exogenous factors. The industrial and competitive analysis is granted outstanding significance. The structure of the audit market is thus an essential factor of competitiveness for audit companies. The market concentration can be interpreted as a strategic competitive advantage of an enterprise, provided that a

higher additional benefit for the client is offered. This additional benefit of a basic product or service can be reduced to a lower bid price or an additional service with appropriate surcharge [4].

Recently, the structure-conduct-performance theory experienced a considerable advancement through the endogeneity of cause variables of market structure. Hereby, among others, game theory is important, which analyses the competitive interactions and effects of asymmetric information distribution and therefore considers interdependencies between market structure and market behavior. Within the scope of the transaction cost theory efforts are made to bring into focus the structures of authority and surveillance in companies and to clarify possible coordination problems. Last but not least, an economic analysis of the influence of the legal environment on the market structure and market behavior is just as important.

DeAngelo [8] has first applied the size of an audit company as a surrogate for audit quality. According to that, big audit firms – measured by the number of clients – tend to be more independent of one specific client than medium-sized audit companies, which have only few relevant clients. Therefore it is possible to pursue incentives to satisfy the wishes of management to approve unrestrictedly, even under accounting errors. DeAngelo [9] explains this assessment with quasi-rents. The original inspection induces startup costs for the auditor and transaction costs for the client, which develops a bilateral monopoly. In a bilateral monopoly, both contracting parties are interested in a long-term perpetuation of their relations. From an auditor's point of view, a change of the auditor would lead to a loss of client-specific quasi-rents. The companies that have to be audited would have to incur additional searching cost, finding a new qualified auditor. Since big audit firms have more mandates than medium-sized firms and therefore a higher diversification of risk, according to DeAngelo [8] the probability increases that the auditor reports correctly accounting errors as well as balance sheet manipulations. The impending loss of quasi-rents of a client can easier be cushioned by other mandates on the lines of cross-subsidization and tends to lead to a lower financial dependency relating to one mandate [10]. Especially the appearing damage of the auditor's reputation plays an important role for big audit firms, if capital markets assume a decreasing audit quality. Due to this, not only the mandate in question could go astray, but also

additional ones on other national and international audit markets. Therefore, with increasing size of the audit firm, independence and demand increase also from a capital market's point of view. A positive influence on trust building on the capital market can be the result of commissioning one of the big audit firms, as management follows the trend and assigns preferably one of the Big Four.

As a follow-up study, Palmrose [11] investigated the connection between audit firm size and audit fee. Hereby, it is assumed, that big audit firms demand a markup when owning a market position approaching such as that of a monopoly, in order to signalize higher audit quality. These hypotheses are contrary to low balling, after which audit firms agree with the client upon a not cost-covering audit fee in the first audit period hoping this would lead to future rationalization effects. Consequently, it is examined whether the existence of economies of scale entails lower audit fees of audit companies in comparison to competition. Palmrose [11] could prove that the "Big Eight" invoiced higher audit fees (price premium). This was said to be attributable to the higher audit quality or the monopolistic structures on the audit market. Beside this, it was confirmed that the Big Eight spend relatively more hours of work on a mandate comparable in scale.

While the literature stresses the advantages of joint audit regimes, which would lead to lower market concentration and more audit experience and expertise, there are main restrictions.

These advantages cannot be realized by joint audits, since there are only Big Four audit companies involved. Furthermore, practical experience suggests frequent changes from small to larger audit companies [12]. The review of empirical studies in chapter 3 will show that joint audits are often dominated by a Big Four audit firm.

2.2 Audit Quality

According to the two-tier principal agent theory, external audits are an incentive to strengthen public trust in financial accounting [13]. External auditing is a monitoring and bonding instrument for management activities and is meant to motivate legally sound and orderly financial accounting [14]. The audit constitutes an action delegated by the investors of a company in terms of a principal agent relationship [2,15]. It is necessary due to the investors' lack of time and

professional resources and the rational apathy in the publicly owned firm. The relationship between the auditor and the capital market is reflected in the gatekeeper function. Also, the auditor is meant to support the supervisory body or audit committee in supervising the management (assistant role).

According to Antle [16], the auditor is an economic agent and attributed to the classic agency conflicts of hidden characteristics, information, action and transfers, resulting in the risks of adverse selection and moral hazard [17]. The principal-agent issues of an auditor may impair his ability and freedom to make a sound assessment [18]. Adverse selection may be the result of an auditor's lack of qualifications, or his bias towards the audited company. In addition to this pre-contractual principal-agent conflict, post-contractual information asymmetries pose the danger of a moral hazard due to improper audits (shirking) and assessments. There is also the possibility of a moral hazard if the auditor and management collaborate. In such a case, the auditor might tolerate faulty financial accounting and grant an unqualified audit opinion in exchange for hidden transfer benefits. Since an auditor's compensation is not fully transparent to the capital market, incurring the risk of hidden actions, there is a danger of biased judgment by the auditor and untruthful reporting on the outcome of the audit.

The traditional agency models neglect auditor changes, with extreme cases allowing for indefinite mandates [19]. The risks of an asymmetrical distribution of information in audits can be magnified through the low balling phenomenon. Low balling indicates that the audit fees for the initial mandate as negotiated with the client do not cover the actual costs. This strategy can have a negative impact on auditor independence and lead to higher incentives to form a coalition with the management [8]. According to the basic model of DeAngelo [8], the first audit will cause startup costs because the auditor will have to familiarize himself with the business activities and environment of the company first. The auditor chooses a low-balling strategy to crowd competitors out. These losses of the first audit represent a market entry barrier for competing auditor firms. These information and cost advantages are an additional market entry barrier in later audit cycles [20]. Fee cutting, which implies a continuous increase of auditor fees through strategic market considerations, has a positive effect on quasi

rents and strengthens the incentives for low-balling. A lack of fee cutting, however, does not necessarily mean that a low balling strategy was not utilized. Reversely, the presence of fee cutting is not necessarily evidence of a low balling strategy.

Joint audits can enhance audit quality due to the prevention of auditor dependence, distinguishing between the auditing of capital market oriented and non-capital market oriented corporations [21]. The necessity of joint audits is solely related to large management operated corporations, because traditional agency conflicts are characteristic in this group. Shareholders in small and medium-sized companies have greater influence on the management than an average private shareholder in a public company. In a stock corporation, the assistant role of an auditor to support the audit committee becomes more and more important. Although, a long-term single contract between client and auditor seems sensible, the independence in appearance might be limited due to a special trust relationship between management and auditor in a long-term assignment.

According to DeAngelo [8], quasi-rents according to low balling can lead to higher financial incentives to give up the independence of the auditor, if the probability of exposure by the investors is low. Therefore, low-balling, which is connected with a lack of independence, can be prevented by joint audits. Literature assumes stricter and more relentless audits under joint audits, because the auditor intends to diminish the risk of having his successor complain about his low performing upon review of years' audits. The avoidance of organizational blindness under joint audits is pointed out, as negatively influencing the audit efficiency, even under observation of independence. Hence, the long-term single auditor simply trusts his results from previous years instead of anticipating important changes in the company development and adjusting his auditing strategy.

The advantages of joint audits with regard to low balling are not secured because of system immanent disadvantages. Therefore, for corporations, which aim to offer high audit quality to the capital market, compulsory joint audit regimes may be unfavorable [22]. The overall impact of joint audits on audit quality is, from a theoretical point of view, not explicit, therefore, even with the auditor applying low balling, a joint audit does not necessarily imply higher quality

but the interruption or shortfall of learning and experience effects can have an altogether negative effect on the quality of financial accounting and audit.

3. EMPIRICAL RESULTS OF JOINT AUDIT RESEARCH IN EU-MEMBER STATES

3.1 General Remarks

Empirical joint audit research is concentrated on the French and Scandinavian capital market. Quality of financial accounting and audit can be estimated by various proxies, which provide limited informational value. The extent of accounting policy is often estimated by discretionary accruals [23,24]. Investors tend to disapprove of an accounting policy with maximum results, especially regarding companies in a situation of losses [24], the reason being that asymmetric flow of information between management and investors are encouraged in order to deliberately conceal the actual economic situation, or, for reasons of image policy, to portray it as being better than it is. Under a thorough and independent examination, the auditor will scrutinize a positive image policy more critically and will not tolerate questionable aspects of accounting. Since, as mentioned above, the risk of collaboration between management and auditor can be decreased by joint audits, the following surveys will establish to what extent a possible enhancement of auditor independence through joint audits might reduce accounting policy and create a more conservative application of accounting standards.

Besides the quality of financial accounting, audit quality can be determined by diverging variables, e.g. based on restricted going concern opinions, assuming that an independent auditor, facing companies with substantial liquidity issues, decides to restrict or deny the going concern opinion. With joint audits, an increased rate of restricted or denied approval is expected, since the management wishes an unrestricted attestation and imposes pressure on the auditor to have him comply. In addition, auditor independence can be determined by the audit fees paid, which, in the EU, requires the audited corporation to report in the notes and, in case of capital market oriented companies, disclosure of the audit firm in the transparency report. In this context there seems to be an increasing relation between non-audit and audit fees along with a

decreasing independence in appearance, as quasi-rents per client according to low balling increase with higher additional income, and the auditor can be restricted in his ability to judge in order to keep his assignment.

There is only limited evidence that joint audits are connected with higher audit quality, but there is evidence for higher audit costs [25,26,27]. Furthermore, lower audit market concentration by joint audit regimes cannot be a clear indicator for better audit quality. The full impact of joint audit is still uncertain and requires further empirical research.

3.2 Denmark

There are a few EU member states, which abolished mandatory joint audits. Denmark introduced mandatory joint audits for listed companies in 1930 (Danish Companies Act). The Danish audit market is divided in two segments ("state authorized" and "registered" accountants). There was an obligation until 2005 to elect two independent auditors or audit firms, whereas at least one auditor had to be state authorized. However, there were no further regulations to separate the joint audit. The former introduction of joint audits in Denmark was justified to increase auditor independence. In 2001, mandatory joint audits were abolished for business years after 2004. It was pointed out that the historical reasons of a „one man audit“ are not up to date any longer, the costs of a joint audit are extremely high and that there is too much coordination between the joint auditors [28].

One of the rare empirical surveys for the Danish audit market was conducted by Thinggaard and Kiertzner [28], who measured the audit fees of 126 listed firms at the Copenhagen Stock Exchange in 2002. A significant negative connection between a "de facto" joint audit with equal audit duties and the audit fees was established in large companies in contrast to joint audits with a dominant auditor. This result was grounded by competition of the joint auditors, which leads to lower audit costs. The descriptive statistics provide that the Danish audit market is - similar to France - characterized by a dominant auditor in a joint audit settlement. Moreover, one joint audit partner was mainly responsible for the combined audit and non-audit duties. Nearly every company elects at least one Big Four company as the dominant joint auditor. Nonetheless, Thinggaard and Kiertzner [28] cannot prove a price premium in a joint audit

settlement with two Big Four firms. The Danish government has abolished mandatory joint audits since the business year 2005 and this reform measure has led to an increased market concentration. Empirical surveys to measure the influences of the reform on audit quality have not been conducted, yet.

Holm and Thinggaard [29] and Lesage, Ratzinger-Sakel and Kettunen [26-27] could not find empirical evidence for a link between joint audits and audit quality. Holm and Thinggaard [29] focus on 117 non-financial companies listed on the Copenhagen Stock Exchange (CSE) for the years 2003-2007 (time of joint audit abolishment). The authors measure audit quality by abnormal accruals, which is a central indicator for earnings management. The results are not significant, so that the hypotheses were neglected that joint audits are connected with lower earnings management or higher audit quality in comparison to single audits. Lesage et al. [30] also concentrate on audit quality in Denmark with a focus on listed non-financial companies for the years 2002-2010. In this context, 432 observations were conducted for 2005-2010 (period to choose between single or joint audit) and 582 observations for 2002-2010. They also do not find any significant relation between joint audits and abnormal accruals.

3.3 France

The only European country with currently mandatory joint audits is France, whereas voluntary joint audit regimes in other countries (e.g. in Germany) are restricted to specific audit circumstances (e.g. consolidations) or to a short time period [31]. In France, all listed consolidated firms must be evaluated by two audit firms (Code de Commerce Art. L 823-20 since 1966). In contrast to the German law, which implies an annual re-election of the auditor by the shareholders (§ 318 Abs. 1 German Commercial Law), the auditors in France are elected for six years to prevent an opinion shopping by the company's management. Furthermore, in contrast to Germany, a combination of audit and non-audit duties is not allowed in France. Lesage and Ratzinger-Sakel [30,27] compare the French and German audit market, where joint audits are voluntary, through an analysis of 386 French and 386 German companies (only single audits included) for the years 2005-2010. No statistical significance between joint audits and abnormal accruals measures was found, so that the extent of earnings management in France does not differ from Germany.

The empirical study of André, Broye, Pong and Schatt [32] addresses 360 French and 337 UK companies in the business year 2005 and shows that the market share of non-Big Four audit firms in France is much higher than in Great Britain. However, it is not clear whether joint audits are the reason of establishing second tier audit firms and lower market concentration of Big Four companies in France. Furthermore, André et al. [32] state significantly higher audit fees in France in comparison to single audit regimes because of higher communication costs in a joint audit. According to the empirical study of Oxera (2007), the lowest degree of market concentration was conducted for France. However, in comparison to the aforementioned studies, a direct link between this effect and the existence of a joint audit cannot be proven. They state that the extent of earnings management is lower in France than in Germany, whereas many influencing factors and only joint audits are present. There are some empirical studies for the French audit market, which concentrate on the personal composition of joint audits. Marmousez (2008) conduct a study by 177 French listed companies for the business year 2003 with regard to possible links between joint audits and conservatism as a measure for accounting quality. The existence of two Big Four audit firms was connected with a lower accounting quality in contrast to a joint audit with at least one SME audit company. In opposition to this result, the survey of Piot [33,34] of SBF-Index firms for the years 1999-2001 failed to prove an empirical link between the existence of a Big Four audit firm in the joint audit and the extent of accounting policy. 467 French firms for the business year 2003 are subject of the study by Francis, Vanstraelen and Richard [7], whereas at least one Big Four audit firm in the joint audit leads to a lower extent of earnings management. In this context, one has to mention the results of Le Maux (2004), that French joint audits are characterized by a dominant Big Four auditor and not by an equal audit ("de facto" joint audit).

3.4 Sweden

In Sweden, joint audit used to be mandatory for banks until 2006. Since then, the Swedish Financial Supervisory Authority is no longer obliged but still has the right to appoint a second (or more) for the audit of insurance companies and banks. However, the SFSA rarely executes its right to appoint a second auditor, which is only exercised when deemed necessary. Zerni, Kallunki and Nillson [35] focus on 1.171 listed

non-financial Swedish companies for the years 2000-2006 and test the influence of joint audits on entrenchment discounts. This means that large shareholders might use their power to expropriate minority shareholders, which leads to suboptimal performance for them. Furthermore, Zerni, Haapamaki, Järvinen and Niemi [36] consider the link between voluntary joint audit in Sweden in 2001-2007 by 1.257 observations of listed non-financial Swedish companies and a sample of privately held Swedish companies. They state that companies with voluntary joint audits are connected with higher earnings conservatism, lower abnormal accruals, better credit ratings and lower risk forecasts of becoming insolvent within the next year.

3.5 Austria

Joint Audits are not mandatory in Austria. Insofar it is not surprising of an empirical research gap in this country. The only empirical study for the Austrian audit market by Severus (2007) was conducted by a case study interview of 35 Austrian auditors. The auditors mainly argue that the supervision of the audit process and the communication process in a joint audit settlement will lead to a higher quality of the audit result. A significant difference in audit judgment in comparison to a single audit was pointed out.

Table 1 presents a summary of the empirical audit research with regard to joint audits [27]. We concentrate on studies with regression statistics which measure possible impacts of joint audits on audit quality and/or audit market concentration.

The publication of the EC audit green paper (EC, 2010) adopted the strategy of joint audits. First, the disappearance of the Arthur Andersen and the implication of Big audit firms in accounting scandals explain the lack of the investor confidence in audit services [37]. Second, the French experiences with joint audits and the consequence of this strategy may have a positive effect on audit market concentration. Third, the audit services of big auditors offered to listed companies became insufficient, present a systematic risk and are not guaranteed.

To resolve this problem and minimize the audit risk associated to audit market concentration, the choice of joint audit should increase the probability of detecting a misstatement, and thus contribute to auditor competence. Otherwise, the choice of joint audit presents a positive fact. For

example, the auditors benefit from their mutual experience and especially in complexes business area and increase the auditor independence. In the case of joint audits, it's difficult to the manager to impose the choice of some methods to two auditors, and it's easier to the auditors to resist to the manager incentives. This means that the probability of detecting of a financial misstatement increase in the case of joint audits compared to single audits. But the empirical results are mixed so that we deduct the following hypotheses.

H1 (H2): Joint audits increase (decrease) audit quality by increasing auditor independence and reducing audit market concentration in Europe.

4. EMPIRICAL SURVEY OF THE FRENCH AND GERMAN AUDIT MARKET

4.1 Methodology

To test the impact of joint audits on audit quality, we collected data from Thomson Financial database. Data was chosen for France and Germany for the period 2008-2012. This period was characterized by the presence of the important debate on legal audit in Europe and the publication of the Green paper in 2010; this recommendation on audit quality was an important issue in the corporate governance discussion. Even, these two countries use respectively joint- and single audits.

To test our hypothesis, we excluded banks, insurance companies and financial enterprise (SIC 6000-6999) of our sample, because of their degree of complexity and their additional accounting and audit rules. Finally, every firm introduced in the stock market during the last six years is excluded, because they chose Big Four to signal private information. The motivation of the choice of Germany and France is justified by the obligation of the France enterprises listed on the capital market to use joint audits. In contrast, the German legislator accords a flexible choice to use joint audit. These two countries play a key role in the development of the European regulation and their experiences can influence the attraction of joint audits in Europe. Finally, these sample criteria result in a total number of firms equal to 307 enterprises. We consider three different measures to test our hypotheses. First, we use the working capital accruals as realized working capital minus normal working capital.

Table 1. Empirical research on joint audits

Year of publication	Authors	Country, sample time period	Variable	Mainresults
Mainstudies				
2010	André et al. [38]	France, Italy and UK 177, 102 and 210 2007-2008	Auditfees (auditcosts)	positive link between mandatory joint audits and audit fees in comparison to single audits
2008	Ballas and Fafaliou [39]	15 European countries 2.862 1998-2001 and 2002-2004	auditmarketconcentration	decreased concentration in France and Denmark after the collapse of Arthur Andersen (mandatory joint audits there) increased concentration in the other countries
2007	Broye [40]	France 428 2005	auditmarketconcentration	Big Four are in charge of about 50% of the mandates and earn 86% of the audit fees in France (mandatory joint audits) (higher concentration in the large client segment) Big Four in the UK earn 99% of the audit fees
2011	Holm and Thinggaard [29]	Denmark 117 2003-2007	abnormal accruals (auditquality) auditfees (auditcosts)	no negative link between mandatory/voluntary joint audits and earnings management in comparison to single audits a switch from joint to single audit is connected with lower audit fees on the first year after the switch
2012	Ittonen and Peni [41]	Denmark, Finland, Sweden 715 2007	auditfees (auditcosts)	negative link between voluntary joint audits and audit fees in comparison to single audits
2012	Lesage, Ratzinger-Sakel and Kettunen [26,27]	Denmark 432 (582) 2005-2010 (2002-2010)	abnormal accruals (auditquality) auditfees (auditcosts)	no impact on audit quality positive link between mandatory/voluntary joint audits and audit fees (no impact on total fees)
2012	Lesage and Ratzinger-Sakel [30,27]	France and Germany 386 and 386 2005-2010	auditfees (auditcosts) abnormal accruals (auditquality)	positive link between mandatory joint audits and audit (total) fees no impact of joint audits on audit quality
2007/2008	Piot [33,34]	France 817 and 887 1997 and 2003	auditmarketconcentration	lower concentration in France in comparison to the rest of Europe (mandatory joint audit) increased concentration over time (still price competitive in 2003)
2010	Zerni et al. [35]	Sweden 1.171	auditquality	voluntary joint audits mitigates entrenchment discounts

Year of publication	Authors	Country, sample time period	Variable	Mainresults
2012	Zerni et al. [36]	Sweden 1.257 observations 2001-2007	auditfees (auditcosts) earnings conservatism, abnormal accruals, credit ratings, risk forecasts (audit quality)	positive link between voluntary joint audits and audit fees positive impact on perceived and actual audit quality
Other studies				
2012	Audoussert-Coulier [25]	France 254 2002 and 2003	effect of auditor choice on audit cost	choice of one Big Four and one non Big Four/two Big Four lead to Big Four price premium
2012	Bennouri, Nekhili and Touron [42]	France 85 2002-2008	effect of auditor choice on audit quality	negative link between firms with two Big Four and the amount of related party transactions
2009	Francis et al. [7]	France 467 2003	determinants of joint audit pair choice effect of auditor choice on financial statement quality	companies with less concentrated ownership structures and lower rates of family ownership appoint at least one Big Four negative link between two Big Four in the joint audit and abnormal income-increasing accruals
2007	Gonthier-Besacier and Schatt [43]	France 127 2002	effect of auditor choice and fee balance on audit cost	lower audit fee/client size ratio for firms with two Big Four in a joint audit no effect of balanced allocation of audit fees in the joint audit on the amount of audit fees
2012	Holm and Thinggaard [44]	Denmark 116 2005	determinants of auditor pair choice	negative link between voluntary joint audits and non-audit fees (dependent auditors)
2012	Marmousez [45]	France 175 2003	determinants of auditor pair choice	no incentives for small firms to engage Big Four Positive link between firms with audit committees, larger firms and international view and the engagement of two Big Four
2008	Thinggaard and Kiertzner [28]	Denmark 126 2002	effect of auditor choice and fee balance on audit cost	lower audit fees by balanced allocation of audit fees in the joint audit
2010	Zerni et al. [35]	Sweden 1.171 2000-2006	opting for voluntary joint audit	positive link between board members' equity ownership and strong minority ownership

$$AWCA_t = WC_t [(WC_{(t-1)} / S_{(t-1)}) * S_t]$$

With

- $AWCA_t$ = Abnormal working capital accruals in year t ;
- WC_t = Non-Cash working capital in year t ;
- $WC_{(t-1)}$ = Non-Cash working capital in the year preceding year t ;
- S_t = Sales in the year t ;
- $S_{(t-1)}$ = Sales in the year preceding year t .

Second, we use the abnormal accruals obtained by Kothari, Leone and Wasley [46]. The discretionary accruals are estimated from the following equation:

$$TA / A_{ijt-1} = \alpha_0 [1 / A_{ijt-1}] + \beta_1 [(\Delta REV_{it} - \Delta REC_{it}) / A_{ijt-1}] + \beta_2 [PPE_{it} / A_{ijt-1}] + \beta_3 [ROA_{ijt-1}] + \xi_t$$

With

- TA total accruals = difference between earning and operating cash flow;
- ΔREV = change in net revenues for firm i in industry j for year t ;
- ΔREC = change in accounts receivable for firm i in industry j for year t ;
- PPE = gross property plant and equipment for sample firm i in industry j for year t ;
- ROA = return on assets;
- ξ_t = random error term.

According to Subramanyam [23] and DeFond and Park [47], discretionary accruals as defines as the errors terms from the following equation:

$$e = TA / A_{ijt-1} - (\alpha_0 [1 / A_{ijt-1}] + \beta_1 [(\Delta REV_{it} - \Delta REC_{it}) / A_{ijt-1}] + \beta_2 [PPE_{it} / A_{ijt-1}] + \beta_3 [ROA_{ijt-1}])$$

Empirical studies demonstrate that earnings management is used to differentiate audit quality between auditors. For example, DeFond and Jiambalvo [48] showed that the Big Four resist to manager's pressures and maintain their independent opinions. Other authors concentrate on the relation between audit quality and earnings management. Becker, DeFond, Jiambalvo and Subramanyam [51] found a positive relation between the presence of non-Big Six and the level of discretionary accruals. Through an extensive comparison of NASDAQ

firms between 1975 and 1994, Francis et al. [49] also observed a lower level of abnormal accruals among Big Six-audited companies.

Finally, we use the natural logarithm of total audit fees as a proxy of audit quality. Current research confirms a positive relation between audit quality and audit pricing [50]. According to the literature review, we predict a positive relation between audit fees and audit quality.

The effect of national audit regime is measured with a dummy variable equal "1" if the firm has a joint audit and "0" otherwise. We use two measures for auditor choice, the first is a dummy variable, equal to one if the firm is audited by two Big Four in France and one Big Four in Germany and "0" otherwise. The second measure is the natural logarithm of total audit fees. Finally, we use different variables related to the firm characteristics. First we use the company size proxied by the natural logarithm of total assets. It is stated that larger firms minimize their earnings management due to their political costs. Third, firms with high leverage may increase the managerial incentives to adjust earnings management [48]. To control the debt covenant violation, we use the long term debt to total assets in our model. Forth, it is argued in the literature that financial distress companies have large negative accruals. This is due to the contractual renegotiation [51]. For the firm performance, we use three different measures (ROA, sales growth and cash flow from operating activities) and state that the level of earnings management is increasing by firm performance [38,52,53]. Finally, we use the price-to-book ratio (PTR) as the market value of common equity divided by the book value of shareholders' equity, to detect the high litigation risk [54] and earnings per share (EPS), as earnings per share before extraordinary items scaled by stock price at the beginning of the period, and market capitalization (log of market value) to capture the relation between the shares outstanding and earning management. The two models are presented as follow:

First model:

$$Y (AWCA_t \text{ or } DA) = \beta_0 + \beta_1 \text{ joint audit} + \beta_2 \text{ Big Four} + \beta_3 \text{ Two Big Four} + \beta_4 \text{ audit fees} + \beta_5 \text{ size} + \beta_6 \text{ ROA} + \beta_7 \text{ loss} + \beta_8 \text{ OCF} + \beta_9 \text{ debt} + \beta_{10} \text{ sales growth} + \beta_{11} \text{ current ratio} + \beta_{12} \text{ PTR} + \beta_{13} \text{ EPS} + \beta_{14} \text{ MCap} + \xi$$

In sum, the first model uses the AWCA and DA as a proxy of audit quality. Our analysis is focused on the value of discretionary accruals obtained from two different methods: abnormal working capital and the Kothari et al. [46] model. Previous studies in this area demonstrate that high level of accruals influence the quality of the financial statement quality and the auditors have a higher risk of reputation.

Second model:

$$\begin{aligned} \text{audit fees} = & \beta_0 + \beta_1 \text{joint audit} + \beta_2 \text{Big Four} \\ & + \beta_3 \text{Two Big Four} + \beta_4 \text{size} + \beta_5 \text{ROA} + \beta_6 \text{loss} \\ & + \beta_7 \text{OCF} + \beta_8 \text{debt} + \beta_9 \text{sales growth} \\ & + \beta_{10} \text{current ratio} + \beta_{11} \text{PTR} + \beta_{12} \text{EPS} \\ & + \beta_{13} \text{MCap} + \xi \end{aligned}$$

Subsequently, our second model uses audit fees as a proxy of audit quality. Previous studies demonstrate that the quality of the control of the financial statement depends on the number of hours engaged in the legal audit mission [55]. For this reason, we suggest a correlation between audit fees and audit quality.

The variables are:

<i>AWCA_t</i>	= Abnormal working capital accruals in year <i>t</i>
<i>DA</i>	= Discretionary accruals
<i>Joint audit</i>	= Dummy variable; value 1 if the client firm employs a joint audit, otherwise zero
<i>Big Four</i>	= Dummy variable, value 1 if the client firm employs a big Four audit firm in the single audit two
<i>Big Four</i>	= Dummy variable, value 1 if the client firm employs two big four audit firms in the joint audit
<i>Audit fees</i>	= Log of total audit fees
<i>Size</i>	= Log auf total assets
<i>ROA</i>	= Return on Assets
<i>Loss</i>	= Dummy variable, value 1 if earnings are negative
<i>OCF</i>	= Net operating cash flow to total assets
<i>Debt</i>	= Long term debt to total assets
<i>Sales growth</i>	= (Sales <i>t</i> /Sales <i>t-1</i>) - 1
<i>PTR</i>	= Price to book ratio
<i>EPS</i>	= Earnings per Share before extraordinary items scaled by stock price at the beginning of the period and

Market value = Log of market value.

4.2 Empirical Results

Empirical data is focused on 2008-2012 for the German and French audit market. We use earnings management as a proxy of audit quality from two different methods. The first measure is abnormal working capital accruals. Table 2 for Panel A provides the descriptive statistics of the magnitude of the abnormal working capital accruals in France and Germany. The results demonstrate that the magnitude of earnings management is lower in France (0.033) than in Germany (0.052). For the second measure, we use the discretionary accruals obtained by Kothari et al. [30]. The mean of the discretionary abnormal accruals for the French (Germany) sample is equal to 0.534 (0.834) with median equal to 0.429 (0.664). The mean comparison test between these two countries demonstrates the presence of a significant difference between France and Germany for the AWC and DAC variables. This finding is consistent with previous studies. The outcome is mainly related to the strictness of the audit regime and the role of the H3C and their inspection activity after 2008 especially in the French context. This result is confirmed by the test of means reported in Panel B. This shows that the differences in earnings management level between France and Germany is significant.

Table 3, Panel A, reports the descriptive statistics for continuous variable. For the mean of the AWC and DAC variables are negative (respectively, equal to -0,002 and -0.689). These results demonstrate that auditors in the French and German context do not accord a flexible choice for the firm manager to choice the accounting method. This strategy limits the accounting manipulation [51] and increase financial statement credibility. The mean of the natural logarithm of the audit fees is equal to 13.716, with 50% of our sample paid € 367 000. The mean size of our sample is equal to 20.35 with a performance and debt average equal respectively 3.5% and 15.2%. Also, we note the presence of the positive growth of the sales value (8.8%). Table 3 for panel B reports the descriptive statistics in the French and German context. We analyse the difference between the two sub-samples that the descriptive statistics demonstrate that the mean of the audit fees is higher in France compared to Germany. This result is the consequence of the obligation to

designate two auditors in France. The choice of joint audit increases the total of audit fees. Finally, table 4 reports the descriptive statistics for frequency variables.

The abnormal working capital accruals and the discretionary abnormal accruals of the year are scaled by the sales of that year. Our empirical analysis focuses on the absolute value of discretionary accruals. Previous studies in this area found positive discretionary accruals, so that auditors have a higher risk of reputation loss. The means test reports abnormal working capital accruals and discretionary accruals between France and Germany are significant at 1%.

The Pearson correlation matrix presented in table 6 shows several statistically significant correlations between more than independent variables. The Variance Inflation Factors (VIF) in table 5 are high, which shows multi-collinearity between the different variables. For this reason, we exclude the market capitalization from our model. In addition, there is a positive relation between earnings management obtained from Kothari et al. [46] and Big Four and joint audit variable. This result is consistent with the result of Azibi and Rajhi [37].

The multivariate analyses are presented in Tables 7-12. To test our hypotheses, we use the ordinary least square method (OLS) with three different dependent variables. The output result demonstrates that joint audits have an insignificant positive coefficient for the three models. This finding signals that joint audits do not have a significant positive effect on audit quality in France and Germany. This means that the green paper recommendation for mandatory joint audits do not have a positive impact on audit quality in France and Germany. Insofar, the non-implementation of mandatory joint audits after the finalization of the European audit firm may is justified according to our results. Then, joint audits are not a proper instrument to resolve the problem associated to audit market concentration. The empirical results obtained in this research do not support our first hypothesis and confirm our second. This output launches a further debate on the effects of joint audits on audit quality in Europe (other countries).

For the control variables, the empirical output demonstrates that Big Four and Two Big Four variables have an insignificantly positive effect

on earnings management. This result is confirmed with the results obtained by Azibi and Rajhi [37]. While, the performance variables (without sales growth) are significant at 1%. For the ROA, the output estimation demonstrates the presence of the positive coefficient for this variable for the two models. This result is consistent with Dechow et al. [52] and Abarbanell and Lehavy [38]. However, the coefficient of the OCF is negatively significant at 1%. This means that firms with high operating cash flows have a less level of discretionary accruals.

Whereas, the debt variable is only negative significantly for the second model at 1%. This result is in concordance with Becker et al. [51] and demonstrates that firms with financial distress have negative accruals. We find a positive relation between audit fees and earnings management. This confirms that high level of audit fees increase earning management in the second model and increase the dependence of auditor vis-à-vis their clients. For PTR, this variable is only positively significant at 5%. This means that firms with the high litigation risk have a high level of earning management.

Finally, the EPS variable is significant at 1% only for the second model. This means that firms with high level of outstanding share have a lower level of earnings management.

The regression analysis demonstrates that joint audits do not have a significant effect on abnormal accruals obtained from the abnormal working capital model. This means that joint audit do not influence accounting practice of generation abnormal accruals compared to the single audit case. *Hypothesis 1* is not supported by our results.

This regression analysis also demonstrates that joint audits have an insignificant impact on earnings management. Insofar, joint audit do not limit significantly the discretionary accruals obtained from the Kothari et al. [46] model. *Hypothesis 1* is not supported by our results.

The empirical findings obtained from this model demonstrate that joint audits do not have a significant impact on audit fees. Again, *hypothesis 1* is not supported by our results.

Table 2. Descriptive statistics for absolute value of abnormal working capital accruals and discretionary abnormal accruals and test of means

Panel A: Descriptive statistics for absolute value of abnormal working capital accruals and discretionary abnormal accruals						
Abnormal working capital accruals						
Country	N	Mean	STD	25 %	50 %	75 %
France	640	0.033	0.046	0.007	0.018	0.038
Germany	895	0.052	0.084	0.012	0.030	0.060
Discretionary abnormal accruals						
Country	N	Mean	STD	25 %	50 %	75 %
France	640	0.534	0.442	0.194	0.429	0.763
Germany	895	0.834	0.824	0.405	0.664	1.064
Panel B: Test of means (Bonferroni Test): Multiple comparison of absolute value of abnormal working capital accruals and discretionary abnormal accruals						
Variables	Means difference		SDE	Significance		
Absolute value of abnormal working capital accruals	0.019		0.003	0.000		
Discretionary abnormal accruals	0.299		0.035	0.000		

Table 3. Descriptive statistics for continuous variable
Panel A: Descriptive statistics for continuous variable for the sample

Variables	France					Germany				
	Mean	SD	Min	Max	Med	Mean	SD	Min	Max	Med
AWC	-0.001	0.057	-0.323	0.498	-0.000	-0.002	0.099	-1.46	0.774	-0.001
DAC	-0.521	0.457	-3.022	0.564	-0.425	0.810	0.848	-12.015	1.623	-0.659
Audit fees	14.130	1.704	10.596	19.844	13.887	13.420	1.566	10.596	22.168	13.142
Size	20.974	2.166	16.659	26.08	20.809	20.380	2.134	15.728	26.432	20.134
ROA	0.038	0.081	-0.856	0.379	0.041	0.187	0.121	-0.937	0.782	0.046
OCF	0.070	0.095	-0.816	0.433	0.069	0.070	0.116	-1.607	0.525	0.075
Debt	0.175	0.230	0	2.514	0.135	0.136	0.120	0	0.568	0.116
Salesgrowth	0.062	0.224	-0.855	1.971	0.044	0.106	1.197	-0.856	34.476	0.050
Current ratio	1.492	0.786	0.258	6.076	1.318	2.008	1.905	0.058	33.253	1.636
PTR	1.594	2.703	-23.41	48.97	1.26	1.838	3.082	-29.01	76.51	1.390
EPS	2.882	8.745	-58.27	114.7	1.56	2.077	8.724	-88.5	102.06	0.88

Panel B. Descriptive statistics for continuous variable by country

Variables	Mean	SD	Min	Max	Med
AWC	-0.002	0.084	-1.460	0.774	-0.001
DAC	-0.689	0.072	-12.015	1.623	-0.556
Audit fees	13.716	1.662	10.596	22.168	13.444
Size	20.628	2.167	15.728	26.432	20.489
ROA	0.035	0.106	-0.937	0.782	0.044
OCF	0.070	0.108	-1.607	0.525	0.072
debt	0.152	0.175	0	2.514	0.125
Salesgrowth	0.088	0.925	-0.856	34.476	0.047
Current ratio	1.793	1.561	0.058	33.253	0.492
PTR	1.737	2.931	-29.01	76.51	1.34
EPS	2.413	8.739	-88.5	114.7	1.13

Table 4. Descriptive statistics for frequency variable
Panel A: Descriptive statistics for frequency variable for the sample

Variables	0	1
Big four	1339	196
Twobigfour	852	683
Loss	1274	261
Joint audit	861	674

Panel B: Descriptive statistics for frequency variable by country

Variables	France		Germany	
	0	1	0	1
Big four	547	93	727	168
Twobigfour	364	276	488	407
loss	547	93	727	168
Joint audit	348	292	513	382

Table 5. Variance inflation factor (VIF)

Variable	VIF	1/VIF
Size	4.97	0.201328
Audit fees	4.69	0.213231
Joint audit	2.95	0.338818
ROA	2.77	0.361219
Two big four	2.70	0.370367
OCF	1.83	0.546065
loss	1.81	0.553514
Big four	1.24	0.807687
EPS	1.20	0.836607
Debt	1.11	0.904763
Currentratio	1.10	0.911613
PTR	1.02	0.977483
Sales growth	1.02	0.984844
Mean VIF	2.18	0.458715

Table 6. Correlation matrix

	AWC	DA	Joint audit	Big four	Twobigfour	Audit fees	size	ROA	loss	OCF	debt	Sales growth	Current ratio	PTR	EPS
AWC	1	-----													
DA	-----	1													
Joint audit	0,009	0,072	1												
Big four	0,034	0,007	0,432	1											
Two big four	0,010	-0,053	-0,791	-0,342	1										
Audit fees	-0,002	0,110	-0,008	0,013	0,012	1									
Size	-0,007	0,090	-0,006	0,006	0,002	0,875	1								
ROA	0,023	0,196	0,043	0,006	0,006	0,047	0,136	1							
loss	-0,025	-0,178	-0,069	-0,005	0,027	-0,122	-0,209	-0,635	1						
OCF	-0,25	0,082	-0,011	-0,039	0,015	0,044	0,128	0,657	-0,345	1					
debt	-0,014	-0,000	-0,014	-0,036	0,035	0,209	0,231	0,070	-0,045	0,051	1				
Salesgrowth	0,008	-0,015	0,042	-0,003	-0,028	-0,001	0,018	0,092	-0,029	0,051	-0,020	1			
Current ratio	0,102	0	-0,024	0,026	0,008	-0,248	-0,235	0,047	0,032	-0,032	-0,139	-0,004	1		
PTR	-0,026	0,050	-0,006	0,010	0,012	0,003	0,001	0,095	-0,017	0,089	-0,081	0,004	-0,004	1	
EPS	0,034	-0,054	-0,010	-0,017	0,018	0,033	0,172	0,256	-0,279	0,153	-0,083	0,004	-0,011	-0,011	1

Table 7. Regression results with MCO, dependent variable abnormal accruals obtained from abnormal working capital

Variables	Coef	t-stat	p-value
Intercept	-1.2694	-6.39	0.000
Joint audit	0.0917	1.48	0.139
Big four	-0.0727	-1.22	0.225
Two big four	-0.0158	-0.27	0.789
Audit fees	0.0626	2.69	0.007
Size	-0.0127	-0.69	0.489
ROA	1.4816	5.31	0.000
loss	-0.1710	-2.67	0.008
OCF	-0.4815	-2.15	0.031
Debt	-0.1836	-1.72	0.086
Sales growth	-0.0294	-1.51	0.131
Current ratio	0.0056	0.47	0.639
PTR	0.0082	1.34	0.181
EPS	-0.0103	-4.65	0.000
Number of observations	1530		
R²	7.88%		
Adj R²	7.09%		
Prob > F	0.000		

Table 8. Regression results with MCO, dependent variable abnormal accruals obtained from abnormal accruals model (Kothari et al. 2005) [46]

Variables	Coef	t-stat	p-value
Intercept	-0.0219	-0.98	0.327
Joint audit	0.0018	0.26	0.796
Big four	0.0051	0.76	0.449
Two big four	0.0052	0.79	0.429
Audit fees	0.0002	0.09	0.930
Size	0.0009	0.47	0.636
ROA	0.2712	8.62	0.000
Loss	0.0090	1.30	0.194
OCF	-0.3616	-14.46	0.000
debt	-0.0040	-0.33	0.739
Sales growth	0.0001	0.05	0.956
Current ratio	0.0040	3.03	0.002
PTR	-0.0005	-0.76	0.449
EPS	0.0002	0.98	0.327
Number of observations	1530		
R²	13.37%		
Adj R²	12.63%		
Prob > F	0.000		

Table 9. Regression year per year with MCO, dependent variable abnormal accruals obtained from abnormal working capital

	2012			2011			2010			2009			2008		
	Coef	t-stat	p-value	Coef	t-stat	p-value	Coef	t-stat	p-value	Coef	t-stat	p-value	Coef	t-stat	p-value
Intercept	0.0614	1.25	0.211	-0.1754	-3.86	0.000	0.0331	0.91	0.362	-0.0735	-1.25	0.212	0.0170	0.38	0.702
Joint audit	-0.0502	-2.21	0.028	-0.0079	-0.51	0.610	0.0057	0.54	0.591	0.0314	1.73	0.085	-0.124	-0.70	0.487
Big four	0.0663	2.16	0.031	-0.0024	-0.21	0.836	-0.0060	-0.61	0.539	0.105	0.48	0.635	-0.0051	-0.56	0.578
Two big four	-0.0193	-1.61	0.108	-0.0155	-0.97	0.333	0.0057	0.57	0.569	0.0478	3.13	0.002	-0.0142	-0.73	0.464
Audit fees	-0.0039	-0.69	0.493	0.0106	1.85	0.065	0.0050	1.13	0.259	-0.0001	-0.02	0.982	-0.0058	-1.33	0.186
Size	-0.0094	-1.30	0.196	0.0023	0.35	0.724	-0.0182	-3.02	0.003	-0.0123	-1.14	0.256	-0.0055	-0.82	0.414
ROA	-0.1517	-2.17	0.031	0.565	7.26	0.000	0.289	5.10	0.000	0.4558	5.72	0.000	0.2719	4.71	0.000
Loss	-0.0086	-0.52	0.604	0.0594	3.82	0.000	-0.0182	-1.45	0.149	0.0318	2.05	0.041	0.0062	0.39	0.694
OCF	0.0065	0.14	0.891	-0.4426	-6.67	0.000	-0.539	-11.61	0.000	-0.6087	-9.41	0.000	-0.0529	-11.79	0.000
Debt	-0.0013	-0.04	0.965	-0.0032	-0.13	0.894	-0.004	-0.24	0.807	-0.0107	-0.35	0.727	0.0150	0.72	0.473
Sales growth	0.0912	7.47	0.000	0.0046	-2.29	0.023	0.0130	1.03	0.304	0.0023	0.09	0.929	0.0026	1.25	0.212
Current ratio	-0.0047	-1.34	0.182	0.0274	8.82	0.000	-0.007	-2.31	0.021	0.0056	1.31	0.192	0.0022	1.25	0.212
PTR	-0.0004	-0.43	0.669	-0.0035	-1.93	0.055	-0.003	-3.57	0.000	-0.0067	-1.10	0.272	-0.0014	-0.46	0.643
EPS	-0.0003	-0.80	0.427	0.0006	1.20	0.232	0.0002	0.40	0.689	0.0008	1.43	0.155	0.0003	0.59	0.553
Number of observations	307			307			307			307			307		
R²	21.55%			35.64%			36.43%			27.74%			34.66%		
Adj R²	17.79 %			32.55%			33.38%			24.28%			31.48%		
Prob > F	0.0000			0.0000			0.0000			0.0000			0.0000		

Table 10. Regression year per year with MCO, dependent variable abnormal accruals obtained from Kothari et al. [46] model

	2012			2011			2010			2009			2008		
	Coef	t-stat	p-value	Coef	t-stat	p-value	Coef	t-stat	p-value	Coef	t-stat	p-value	Coef	t-stat	p-value
Intercept	-2.279	-3.91	0.000	-1.508	-3.03	0.003	0.1485	0.54	0.591	-1.706	-4.71	0.000	-0.0486	-0.16	0.875
Joint audit	0.2613	0.96	0.340	0.0293	0.17	0.864	0.0258	0.32	0.749	0.0647	0.58	0.564	-0.1184	-0.96	0.339
Big four	-0.1788	-0.49	0.627	-0.1496	-1.17	0.242	-0.0645	-0.86	0.391	-0.1770	-1.30	0.195	0.0166	0.26	0.794
Two big four	-0.1560	-1.08	0.280	0.1503	0.85	0.395	-0.0177	-0.23	0.818	0.0571	0.61	0.545	-0.0982	-0.73	0.465
Audit fees	0.134	1.97	0.050	0.0190	0.30	0.763	0.0718	2.13	0.034	0.0649	1.62	0.106	0.0374	1.23	0.220
Size	0.1558	1.79	0.075	0.185	2.48	0.014	-0.1898	-4.12	0.000	-0.0549	-0.82	0.412	-0.0225	-0.48	0.631
ROA	1.202	1.43	0.152	5.795	6.77	0.000	0.3856	0.89	0.372	0.1653	0.34	0.736	0.5200	1.30	0.194
Loss	-0.394	-1.97	0.050	0.2804	1.64	0.102	-0.3235	-3.37	0.001	-0.2262	-2.36	0.019	-0.2273	-2.09	0.038
OCF	0.472	0.82	0.410	-0.6560	-0.90	0.368	-1.615	-4.57	0.000	-1.0432	-2.62	0.009	-1.4738	-4.74	0.000
Debt	-0.1288	-0.35	0.729	-0.5996	-2.28	0.023	-0.0912	-0.66	0.507	0.2356	1.25	0.213	-0.3402	-2.35	0.020
Sales growth	-0.0923	-0.63	0.529	-0.0512	-2.29	0.023	0.1379	1.43	0.154	0.047	0.29	0.769	-0.1748	-1.84	0.067
Current ratio	0.0335	0.79	0.431	-0.0107	-0.31	0.754	-0.0249	-1.07	0.286	0.0198	0.75	0.455	-0.0035	-0.29	0.770
PTR	0.0134	1.08	0.281	0.0548	2.70	0.007	-0.0198	-2.48	0.014	-0.0390	-1.04	0.301	-0.0200	0.94	0.350
EPS	-0.0100	-1.76	0.079	-0.0145	-2.65	0.009	-0.0074	-1.96	0.051	-0.0066	-1.74	0.083	-0.0070	-1.97	0.049
Number of observations	307			307			307			307			307		
R²		13.73%			33.35%			18.78%			10.61%			14.53%	
Adj R²		9.59%			30.15%			14.89%			6.32%			10.37%	
Prob > F0.0001				0.0000			0.0000			0.0025			0.0000		

Table 11. Regression of audit fees model

Variables	Coef	t-stat	p-value
Intercept	-0.3844	-1.76	0.079
Joint audit	0.0518	0.76	0.448
Big four	0.0393	0.60	0.551
Two big four	0.0923	1.42	0.157
Size	0.6888	69.51	0.000
ROA	-0.0136	-0.04	0.965
Loss	0.0848	1.20	0.230
OCF	-0.7200	-2.93	0.003
Debt	-0.0947	-0.80	0.421
Sales growth	-0.0270	-1.26	0.209
Current ratio	-0.0444	-3.37	0.001
PTR	0.0038	0.55	0.580
EPS	-0.0211	-8.76	0.000
Number of observations	1530		
R²	78.68%		
Adj R²	78.51%		
Prob > F	0.000		

Table 12. Regression of audit fees model (estimation year by year)

	2012			2011			2010			2009			2008		
	Coef	t-stat	p-value	Coef	t-stat	p-value	Coef	t-stat	p-value	Coef	t-stat	p-value	Coef	t-stat	p-value
Intercept	-0.2652	-0.53	0.596	-0.2579	-0.57	0.572	-0.5415	-1.14	0.253	-0.0415	-0.08	0.937	-1.3904	-2.35	0.020
Joint audit	0.0344	0.15	0.882	-0.1868	-1.19	0.236	0.1478	1.06	0.291	-0.0506	-0.31	0.756	0.5501	2.32	0.021
Big four	0.2809	0.90	0.371	0.0793	0.67	0.501	-0.1223	-0.94	0.347	0.1384	0.70	0.485	0.0350	0.28	0.777
Two big four	0.0313	0.25	0.799	0.0547	0.34	0.735	-0.0164	-0.12	0.902	0.0337	0.25	0.805	0.6470	2.52	0.012
size	0.6877	29.14	0.000	0.6898	33.71	0.000	0.6990	33.50	0.000	0.6737	28.06	0.000	0.7084	29.52	0.000
ROA	-0.0078	-0.01	0.991	0.1400	0.18	0.859	0.7387	1.00	0.317	-0.6451	-0.91	0.366	-0.1911	-0.25	0.804
Loss	-0.0500	-0.30	0.767	0.0488	0.31	0.757	0.3555	2.16	0.032	0.0916	0.67	0.504	0.0072	0.03	0.973
OCF	-1.0784	-2.23	0.027	-0.4151	-0.62	0.537	-0.6160	-1.04	0.301	-0.3720	-0.65	0.516	-0.2728	-0.45	0.650
Debt	-0.0421	-0.13	0.893	-0.2375	-0.99	0.322	-0.2432	-1.04	0.300	0.0116	0.04	0.966	0.0133	0.05	0.962
Sales growth	0.0788	0.63	0.529	-0.0298	-1.45	0.149	-0.1090	-0.65	0.514	-0.2587	-1.09	0.276	0.2096	1.14	0.256
Current ratio	-0.0647	-1.81	0.071	-0.0407	-1.32	0.186	-0.0799	-2.22	0.027	-0.0846	-2.37	0.018	0.0061	0.26	0.792
PTR	0.0001	0.02	0.988	-0.0278	-1.53	0.127	0.0130	1.01	0.315	0.0381	0.98	0.327	0.0199	0.59	0.553
EPS	-0.0169	-3.55	0.000	-0.0231	-4.74	0.000	-0.0314	-4.95	0.000	-0.0128	-2.34	0.020	-0.0318	-4.82	0.000
Number of observations	307			307			307			307			307		
R²	77.70%			33.35%			82.89%			77.42%			77.11%		
Adj R²	76.79%			30.15%			81.19%			76.50%			76.16%		
Prob > F	0.0000			0.0000			0.0000			0.0000			0.0000		

5. CONCLUSION

The European Commission discussed in its green paper of 2010 the implementation of mandatory joint audits in the European member states to reduce audit market concentration, increase auditor independence and to generate an appropriate audit quality. In this context, France as the only EU member state with mandatory joint audits was mentioned as a potential leading example. Main critics arose after the publication of the green paper so that the European audit reform, which was finalized in 2014, does not contain mandatory joint audits. But the European legislator has increased the incentives for joint audit regimes because the member states can implement a longer tenure for external rotation from 10 years to 24 years. The main research question is whether joint audits lead to increased audit quality by higher audit independence and reduced audit market concentration.

Based on the principal-agent theory, auditor independence reduces the probability of collaboration with management against the company's target groups by having his impartiality compromised thus filing unfounded reports. Joint audits could be a useful regulation measurement to strengthen audit quality and decrease audit market concentration. However, the link between joint audit and accounting or audit quality is controversial. Insofar, the aim of the analysis was to evaluate the principal-agent theory and recent results of empirical audit research. Increased audit quality will not necessarily be reached by joint audit regimes. The total effect on accounting and audit quality can be negative even under low balling.

Our study tests the impact of joint audits on audit quality for French and German listed companies for the business years 2008-2012. We use three proxy of audit quality (abnormal working capital, abnormal accruals obtained from Kothari et al. (2005) and audit fees) [46]. To test our main hypotheses, we use the Ordinary Least Square method. Descriptive statistics state a difference of the magnitude of earnings management between France and Germany. This confirms the results of former empirical audit research. The multivariate analysis demonstrates that joint audits do not have a significant positive effect on audit quality and market concentration in Germany and France. The coefficient of the joint audit is not significant in the case of the three

estimations outputs with different dependent variables.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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