Effects of and experiences with joint audit

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Research

Commissioned by the Netherlands Ministry of Finance

Erasmus Competition
& Regulation institute

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1. Introduction

Although France is currently the only European country that requires listed companies, credit institutions, finance companies and investment companies to hire two different audit firms for their statutory audit, the introduction of a joint audit model has regularly been discussed by various institutions at EU (country) level, highlighting its potential benefits regarding audit quality and market concentration.

For instance, in the 2010 Green Paper entitled "*Audit Policy: Lessons from the Crisis*", the European Commission suggested the introduction of mandatory joint audits for European listed companies. The main objective was to break the Big 4 oligopoly by allowing second-tier audit firms to gain experience and compete in the market segment of the audits of large companies. Additionally, it was argued that joint audits could help mitigate the market disruption in case a Big 4 firm ceases operations.[1] However, considering the abandonment of mandatory joint audits in Denmark in 2005 and a consultation with various stakeholders, the European Commission decided not to adopt the proposed legislation.[2] Nevertheless, some countries, including the Netherlands, Spain, and the United Kingdom, are still discussing the possibility of introducing mandatory joint audits. In several countries, joint audits are currently still taking place on a voluntary basis.

In 2018 the Dutch Authority for the Financial Markets (AFM) published a report entitled "*Vulnerabilities in the Structure of the Audit Sector*" which explored joint audit as a possible instrument to improve the quality of statutory audits in the Netherlands. Although a joint audit model could reduce the current sources of market failure, the AFM argued that it cannot be said with certainty that the joint audit model will lead to high and permanently assured quality of statutory audits, because it could introduce risks of new market failure or government failure. Also, the joint audit model makes the statutory audit more complicated due to the coordination required and harmonisation between the two audit firms and requires greater project management skills. Further study into joint audits was therefore needed according to the AFM. AFM described two intermediate variants of joint audits (which could also be included in a future study): (1) the joint audit model could be applied only to listed, multinational PIEs rather than the entire PIE population,[3] and (2) the joint audit model could be formulated more as a peer review, in which an independent audit firm that has not been involved in the statutory audit first carries out an overall peer review of the audit before the auditor in question signs off.

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[1] EC, 2010.

[2] Bédard and Schatt, 2020.

[3] PIEs (Public Interest Entities) are listed legal entities, banks, insurers, and reinsurers.

In the UK, similar discussions took place in 2019, with the Competition & Markets Authority (CMA) expressing its concerns about shortcomings in audit quality and the high market concentration.[4] In the hope to increase the number of audit firms auditing the largest companies in the UK, CMA recommended a mandatory joint audit, including at least one non-Big 4 firm, for most large companies. CMA argued that an introduction of mandatory joint audits will break down the barriers to expansion for non-Big 4 firms (capacity limitations, cost limitations, etc.) as they gradually start to carry out portions of audits for some of the UK's biggest companies. Additionally, CMA argued that such a measure will increase the long-term audit quality. CMA referred to France, where joint audit is a requirement, claiming that it has been successful in reducing the concentration of the largest audits in the hands of the Big 4, and that it is possible to implement it without significant adverse consequences in terms of audit quality.

CMA's recommendation received criticism in the UK, the main one being that it is based on theoretical arguments and that it is not backed by empirical evidence.[5] For instance, Siddiqui (2019) mentioned that there is very limited empirical evidence of the effect of joint audits on audit quality and of the link between increased competition and audit quality and that there is substantial evidence of higher audit fees. He also adds that major stakeholders in the UK were opposed to the introduction of a joint audit, mainly citing increase in cost, complexity, and lack of evidence regarding audit quality as main concerns. After consultation, the UK government did not recommend mandatory joint audits but mandatory managed shared audits.[6] The proposal for mandatory managed shared audit would require FTSE 350 Audit Committees to invite a firm to tender for the group audit (which may be undertaken by a Big 4 firm) and to invite a non-Big 4 firm to tender for an audit of a subsidiary or subsidiaries within a group that are subject to statutory audit requirements. The UK audit regulator (FRC) believes that mandatory managed shared audits would increase the non-Big 4 firms' proportion of audit clients and audit fees and would allow them over time to grow their capacity and capability to take on larger, more complex audits as sole auditors.

The International Forum of Independent Audit Regulators (IFIAR) is also interested in the pros and cons of joint audits and recently published a report about the main experiences.[7]

In 2020, in the Netherlands a Committee for the Future of the Accountancy Sector (Cta) examined whether structural changes should be introduced in the accountancy sector. On January 15, 2020, Cta presented its report entitled "*Vertrouwen op Controle*" to the Netherlands Minister of Finance. The Cta concluded in its report that there was insufficient justification for taking far-reaching measures regarding the structure of the accountancy

[4] CMA, 2019.
[5] Brydon, 2019, p.17; Siddiqui, 2019.
[6] BEIS, 2021, p. 138.
[7] IFIAR, 2021.

sector (such as making joint audits mandatory), since the effects of such measures were still unclear given the information available. Therefore, the Cta recommended further research into alternative structural models, such as mandatory joint audits.

The Netherlands Minister of Finance has adopted this recommendation and asked Marlies de Vries and Chris Fonteijn to work on the recommendations.[8] One aspect of this is to identify national and international experiences with joint audits.[9] This request gave rise to the current assignment, which includes the following main research question:

What are the expected effects of making the joint audit model mandatory on, among other things, the various types of audit quality, the culture of the audit firm, the price of an audit and the market competition in the Netherlands?

This main research question is divided into three sub-questions:

- Do joint audits score better, on average, on the following four types of audit quality than audits conducted by a single audit firm:
  1. the outcome of the audit process and compliance quality (i.e., the procedural aspects of the audit);
  2. the existence, design and operation of the quality control system (i.e., the set of measures to ensure good audit quality);
  3. factors that have a material effect on quality, such as the culture within the audit firm, the governance of an audit firm and the remuneration system;
  4. perceived quality (by shareholders, investors).

- What are the observed (intended and unintended) effects of the joint audit model (on, for example, the price of an audit, competition in the market and/or the culture within the audit firm)?

- How is the joint audit model perceived by stakeholders in the Netherlands and abroad?

To answer these research questions, the following perspectives will be brought together in this report:

- objective research findings on the effects of the joint audit model;
- expert opinions of leading scientific researchers who have extensively researched joint audits; and

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[8] https://www.linkedin.com/company/kwartiermakers-toekomst-accountancysector/.

[9] https://www.rijksoverheid.nl/documenten/kamerstukken/2020/04/28/bijlage-1-instellingsbesluit-kwartiermakers-toekomst-accountancysector.

- experiences of regulators, audit firms, audit clients, and interest groups with the joint audit model in the Netherlands and abroad.

These perspectives are mapped by the following research activities:

- conducting a literature study, including both quantitative and qualitative papers;
- drafting a common opinion of scientific researchers by organizing workshops;
- gathering subjective experiences with joint audits by conducting interviews and taking questionnaires.

The reason we apply this methodology is to obtain a thorough understanding of the current state of knowledge with regard to joint audits in the Netherlands and abroad. This way, we do not only base our findings on the literature, but also consider the views and experiences of researchers, regulators, audit firms, and clients. As such, this research design allows us to paint a complete picture of the advantages and disadvantages of joint audits, in theory and practice. In this report we define a joint audit as an audit in which two (or more) audit firms are appointed to share responsibility for a single audit engagement and to produce a single audit report.

The rest of this report is organised as follows. Section 2 summarises the results from the literature study, provides expert opinions, and details the experiences of regulators, audit firms, and audit clients. Section 3 concludes.

2. Effects and experiences

From a theoretical standpoint, joint audits may have various positive effects on audit quality, market concentration and audit fees. Proponents of a mandatory joint audit system claim, for instance, that two firms might produce higher quality audits than one firm, as they are more likely to detect a breach (four eyes are better than two)[10] and report it (as it is easier for two firms to resist managerial pressure and remain independent).[11] Additionally, joint auditors, being aware that their work will be revised by the other auditor, would theoretically apply more professional skepticism.

In theory, joint audits can also positively influence the perceived quality of audits. One could argue that stakeholders with an interest in the company, such as investors, might have more confidence in the legitimacy of the financial statements if the audit report is signed by two audit firms rather than one.

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[10] Bédard and Schatt, 2020; AFM, 2018.

[11] Velte, 2017.

Another possible effect, frequently mentioned as an argument for the introduction of a mandatory joint audit, is the increase in competition between audit firms and consequently, the breakup of the Big 4 oligopoly.[12] The idea is that requiring companies to hire two audit firms instead of one will allow smaller firms to gain experience with the statutory audits of PIEs. As such, these firms might be better able to compete with the Big 4, possibly leading to a wider array of big audit firms and lower audit fees (due to increased competition). Opponents of the joint audit have responded to this argument by claiming that such a measure will likely not be successful in breaking up the oligopoly, as PIEs will only trust two Big 4 firms for the audit.[13] A way around this, would be by introducing a mandatory joint audit including at least one non-Big 4 firm.[14] However, this argument is based on the assumption that smaller audit firms want and are able to perform a significant amount of additional, complex audit work.[15] Moreover, implementing measures that intervene so strongly in the market might not be desirable from a competition policy point of view. Such an intervention might also reduce welfare as companies might not be allowed to give all the audit work to their most preferred audit firm.[16]

Regarding the effect on audit fees, two opposing arguments may be put forward. The first is that, as a result of the possible increase in competition arising from joint audit, audit fees may decrease. On the other hand, joint audit fees may be higher than single audit fees due to coordination costs incurred by the audit firms[17] and a risk premium which may be charged to the clients. The risk premium refers to the additional cost that a firm charges the audit client to cover the extra risk of mistakes made by the second auditor, for which both firms are responsible (as they both sign the audit report).[18]

Above, we described the theoretical effects of joint audits. However, it remains unclear whether these theoretical effects also occur in practice. Therefore, we analyse the empirical literature (section 2.1) and the practical experiences with joint audits of academic researchers (section 2.2), regulators (section 2.3), audit firms (section 2.4) and audit clients (2.5) to understand whether there is enough evidence for the occurrence of these theoretical effects in practice.

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[12] EC, 2010; AFM, 2018.

[13] Broye, 2007; Siddiqui, 2019.

[14] CMA, 2019.

[15] Bédard and Schatt, 2020; Siddiqui, 2019.

[16] Guo *et al.*, 2017.

[17] Deng *et al.*, 2014.

[18] Gonthier-Besacier and Schatt, 2007.

2.1 Results from literature[19]

In this section we discuss the literature on the effect of joint audit on audit quality, market concentration, and audit fees, next to any other effects. If research findings turn out to be contradictory, they will be weighted based on the impact score of the scientific journal in which they are published.[20] A higher impact score from the journal means a heavier weight for the findings. In this way, the "most reliable" results are given more weight and thus have more impact on the final verdict.

Effect on audit quality

Articles use various indicators (such as discretionary accruals, issuing a going concern warning, adjustments to annual reports, reporting of material economic errors) for audit quality and thus only provide a partial approximation of audit quality. This means that studies do not use a comprehensive measure of audit quality and that statements therefore always make partial statements about the effect on audit quality. In the present study, we do not distinguish between articles with different audit quality indicators (and indicators for perceptions of audit quality). Thus, we assume that audit quality indicators give an indication of the true effect.

The vast majority of empirical literature finds no effect of joint audit on audit quality.[21] Two papers (Zerni *et al.*, 2012; El Assy, 2015) focusing on Sweden (where joint audits are not obligatory but voluntary) and Egypt estimate a positive effect.[22] However, El Assy (2015) only studies 32 Egyptian companies (16 with joint audits and 16 with single audits). Given

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[19] Relevant literature was searched by entering all relevant keywords in the scientific literature database of Erasmus University Rotterdam (https://www.eur.nl/library/), Google Scholar (https://scholar.google.com/), and Google (http://www.google.com). We then scanned the literature obtained in this way for additional relevant literature. Both quantitative and qualitative literature was taken into account.

[20] We use the Journal Citation Reports (JCR) impact factor. The JCR factor can be found on the ERIM Journals List: https://www.erim.eur.nl/about-erim/erim-journals-list-ejl/.

[21] Audit quality can be measured in different types. The majority of empirical literature measures audit quality by looking at the technical quality of the audit (type 1), some look at perceived quality (type 4).

[22] Note that ECRi (2019) found more papers with a positive effect on audit quality. However, in the current report we define joint audits as an audit done by two different audit firms, while most papers that found a positive effect use a broader definition of joint audit as they study the four eyes principle (often within one firm).

the low number of observations and the different culture in Egypt, it is questionable whether the results are reliable and applicable to the Netherlands.[23]

All other empirical papers find no significant effect on audit quality.[24] For instance, using qualitative and quantitative methods, Holm and Thinggaard (2018) analyse audit quality differences between audits by a single big audit firm and joint audits with either one or two big audit firms in Denmark after the abolishment of the mandatory joint audit in 2005. To do this, they examine two measures of audit quality: perceived quality (type 4) and abnormal accruals (type 1). To estimate the effect on the former, the authors conducted a survey capturing Danish CFOs' views on the choice of single or joint audits and their perceptions of audit quality. For the effect on the latter, they regressed data from the mandatory joint audit abolition year (2005/2006) and the following two years. The survey results indicate that most CFOs perceive the audit quality by a single Big 4 audit firm to be the same as it is in joint audits with either one or two Big 4 audit firms. The regression analysis supports this. It provides no evidence of audit quality differences between audits made by a single Big 4 firm and joint audits conducted by any audit pair combination.

Lesage *et al.* (2017) support this finding. Specifically, they examine the consequences of abandoning a mandatory joint audit regime by analysing non-financial listed Danish companies for the 2002–2010 period (before and after the abolishment). The results indicate that there is no association between joint audit and audit quality (measured by type 1, abnormal accruals).

Exploiting a large sample of companies in France, Italy and the UK, André *et al.* (2016) also find no significant differences in the magnitude of abnormal accruals (type 1) between the countries. The authors conclude that the French mandatory joint audit does not lead to higher audit quality.

Hoos *et al.* (2019) conduct an experimental study with Dutch auditors, testing the theoretical belief that joint audits lead to improved auditor skepticism[25] and, in turn, type 3 of audit quality. To do this, they compare auditors' judgements in three review regimes: the joint audit, the internal review, and the no review regime. Auditors' judgement is measured by asking senior auditors and partners from a Big 4 firm to perform a going

[23] Additionally, we could not find the impact factor of the journal in which this paper was published, further supporting the low suitability of the finding to this context.

[24] See for instance Velte and Azibi (2015), Willekens *et al.* (2019), Lesage *et al.* (2012a), and Lesage *et al.* (2012b), Guo *et al. (2017)* and Appendix 4 of the current report.

[25] Professional skepticism can be described as the characteristic of being critical and questioning findings.

concern evaluation.[26] The results provide evidence that the auditors in all three settings follow a similar judgement process.[27] However, the auditors in the internal review regime make significantly more skeptical judgements about the going concern evaluation than auditors in the joint audit and the no review regime. In fact, auditors in the joint audit regime are the least skeptical in their judgement.

According to the authors, one possible explanation for this finding could be that accountability in a joint audit setting is divided between two audit firms and the negative consequences of the outcome are shared. This finding contradicts the theoretical belief that auditors in joint audit settings are more skeptical. In other words, this study suggests that introducing an additional audit firm in the review procedure will not lead to more professional skepticism.

Literature reviews by Bédard and Schatt (2020), Ratzinger-Sakel *et al.* (2013) and Velte (2017) confirm the scarcity of empirical evidence suggesting that joint audits lead to increased audit quality.

If one does decide to introduce a mandatory joint audit system, an important regulatory choice is whether to mandate specific audit pairs or workload sharing between the auditors. Various papers study the effect of the auditor pair composition and the work allocation in a joint audit setting on audit quality. In these papers only joint audits are investigated, and they are not compared to single audits. Regarding pair composition, the literature is inconsistent about which type of pair delivers the highest audit quality. Some studies find that audit pairs with two Big 4 firms deliver the highest quality, followed by audit pairs with one Big 4 firm (Francis *et al.*, 2009; Alfraih, 2016). Others find that the audit quality is higher in a mixed audit pair than in an audit pair consisting of only Big 4 firms (Lobo *et al.*, 2017; Marmousez, 2019).[28] Marmousez (2019) explains the latter result by the fact that the similarity in corporate governance, applied methods and reputation risk between two Big 4 firms likely leads them to rely on each other's work and reduce the incentive to exert maximum effort. Regarding work allocation, Haak *et al.* (2018) show that, contrary to expectations, a more balanced division of tasks between audit firms reduces the quality of the audit. The authors attribute this to a possible free rider effect and to difficulties in the communication and coordination process that might be larger in a balanced than in an unbalanced joint audit.

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[26] With this evaluation, auditors assess whether a company can continue operating without a significant threat of liquidation.

[27] Auditors in all three regimes consider the same number of facts and take approximately the same amount of time when formatting their evaluation.

[28] Francis *et al.* (2009) and Lobo *et al.* (2017) have a comparable impact factor. The impact factor of Alfraih (2016) and Marmousez (2019) could not be found.

Effect on market concentration

Limited empirical research has been done on the effect of joint audit on market concentration.[29] In Denmark, Lesage *et al.* (2017) estimate a significant increase in the Big 4 market share[30] after the abandonment of the joint audit (due to a preference for companies to switch to a single audit and to choose a Big 4 as single auditor). In France, the market share of Big 4 firms is lower than in other European countries when measured in terms of number of clients (Ballas and Fafaliou, 2008; Willekens *et al.*, 2019).[31] This is in part due to the survival of Mazars under the joint audit requirement (Kermiche and Piot, 2018). However, when measured in terms of fees, the market in France is more concentrated than when measured in terms of clients (Broyce, 2007 and Bédard and Schatt, 2020). This indicates that especially big clients choose a Big 4 pair.

Furthermore, Kermiche and Piot (2018) show that less concentration is only related to Mazars. Also, in France concentration increased as the estimated number of main actors decreased from eight to five from 1997 to 2003. The market share of the Big 4 plus Mazars rose from 84% in 2002 to 96% in 2017 in terms of fees (Bédard and Schatt, 2020). The Herfindahl index[32] measuring the effective number of competitors was 0.2 in 2017 (Willekens *et al., 2019)*, indicating five effective competitors. This shows that joint audits probably only saved Mazars as a main player.

Guo *et al.* (2017) support the finding of Kermiche and Piot (2018). They model what would happen if a joint audit requirement were introduced in a single audit regime. Their counterfactual analysis shows that, without any additional regulations other than the introduction of mandatory joint audits (scenario 1), the Big 4 market share would decrease, and the market share gains would be concentrated among the largest non-Big 4 (matching the conclusion of Kermiche and Piot, 2018).[33] They also examine two regulatory measures commonly discussed in connection to the introduction of joint audit: the additional requirement of at least one non-Big 4 in the audit pair (scenario 2), and a '50 – 50' split in the work between the two auditors (scenario 3). The authors find that, under scenario 2, the Big 4 market share loss is only slightly larger than in scenario 1 and the additional market share gains are once again concentrated among the largest non-Big 4. Surprisingly,

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[29] A reason for this might be that very few countries are familiar with the mandatory joint audit system, the most notable examples being Denmark (before 2005) and France (currently). The effect of joint audit on market concentration can only be investigated on country level (unlike the effect on quality and fees, which can be studied on company level).

[30] Market share is measured in terms of number of audits, not in terms of captured fees.

[31] To our knowledge, no research has been done in Denmark on the effect of joint audit on market concentration measured in terms of captured fees.

[32] The Herfindahl index is equal to the sum of squares of the market shares of all firms.

[33] In this paper market share is measured by number of clients, not audit fees captured.

under scenario 3, non-Big 4 firms gain less market share than in scenario 1. This is presumably because large companies do not trust non-Big 4 to be able to take on such a big proportion of the audit work, so they select two Big 4 firms. The last finding suggests that an unequal work distribution between auditors will be better at decreasing the Big 4 market share than a '50-50' split.

Effect on audit fee

Most studies have a clear conclusion regarding the effect of joint audit on audit fees: joint audit leads to higher audit fees for the client than single audits (André *et al.*, 2016; Lesage *et al.*, 2017; Ratzinger-Sakel *et al.*, 2013; Willekens *et al.*, 2019*;* Zerni *et al.*, 2012*)*. This can be seen as an (unintended) side effect of the joint audit model caused by the additional coordination between the firms and the risk related to the collaboration. But even in terms of fees, the empirical research is not fully consistent. In fact, a number of studies show that there is no effect on audit fees (e.g., Holm and Thinggaard, 2016).

In case a mandatory joint audit is introduced, the consideration of regulations regarding audit pair composition and work balance might be relevant. Regarding the effect of audit pair composition on audit fees in a joint audit setting, the literature is not aligned. Certain studies find that having one and two Big 4 auditors in the pair leads to higher audit fees (Audousset-Coulier, 2015), while other studies indicate that audit fees are significantly lower when the audit pair consists of two Big 4 firms (Gonthier-Besacier and Schatt, 2007).[34] According to the authors, the latter may be due to more balanced sharing of qualifications and skills, as well as of potential risks, suggesting economies of scale and scope for large audit firms.

The effect of work balance in a joint audit on audit fee is equally unclear. Haak *et al.* (2018) find that unbalanced joint audits, where one main auditor has a larger stake in the work, lead to lower fees than balanced joint audits, where the work is shared more evenly. Thinggaard and Kiertzner (2008) on the other hand report that balanced joint audits reduce audit fees compared to unbalanced audits, albeit only for large companies.[35]

Other effects

Guo *et al.* (2017) apply the discrete choice model (an approach recently introduced to the auditing literature by Gerakos and Syverson (2015)) to understand what the effect of the introduction of a joint audit requirement would be on the demand for auditors and welfare in a market without a joint audit requirement. The authors estimate three scenarios: (1) introduction of mandatory joint audits, (2) introduction of mandatory joint audits

[34] It should be noted that both papers have a comparable impact factor.

[35] The JCR impact factor of neither paper could be found.

combined with a requirement of at least one non-Big 4 in the audit pair and (3) introduction of mandatory joint audits combined with a requirement for auditors to share the workload equally ('50-50' split).

Their analysis indicates that scenario 1 decreases the welfare. This likely results from not allowing clients to give all the audit work to the most preferred auditor. Scenario 2 decreases the welfare slightly more than scenario 1, probably because this scenario is more limiting than scenario 1. Lastly, scenario 3 decreases the welfare the most. The substantial decrease (also compared to scenarios 1 and 2) is attributed by the authors to the fact that clients who would otherwise choose a Big 4 and non-Big 4 pair, now opt for a Big 4 – Big 4 pair because they do not trust smaller audit firms with 50% of the audit work (Guo *et al.*, 2017).

2.2 Expert opinions

We conducted a workshop with academic experts to discuss the effects of joint audits.[36] These are the most important take-aways from the workshop:[37]

1. Policy discussions are usually based on theoretical arguments and not backed by empirical evidence.
2. There is very limited empirical evidence of the effect of joint audit on audit quality (type 1-2-3).
3. Do not implement mandatory joint audits if the objective is to improve the technical aspect of audit quality (type 1). Firms are already capable of maintaining a high technical quality. It could however be that joint audits improve the perceived quality by external stakeholders.
4. There is no evidence of a link between competition and audit quality in the literature. Therefore, do not implement joint audit if the objective is to increase audit quality through increased competition.[38]
5. More qualitative research is needed to capture different dimensions of audit quality (than just accruals and earnings quality) that cannot be measured quantitatively. E.g., accruals do not capture culture, perception.
6. Most experts are of the opinion that the pair structure of the joint audit does influence the audit quality. Big 4 - Big 4 audit pairs most probably lead to the highest audit quality. If a third-tier audit firm (non-Big 6 firm) is part of the audit pair, the audit quality will very likely be lower (assuming that a first-tier firm would

[36] Appendix 1 provides a list with workshop participants.

[37] These points are not necessarily fully supported by all experts.

[38] In the UK, the current stance is: introduce joint audit if the objective is to increase competition but do not expect it to improve audit quality. As long as it does not harm audit quality, it is okay.

agree to pair with a third-tier firm in the first place). A third-tier audit firm does not have the expertise in house to audit listed companies/PIEs.

7. It is likely that introducing joint audits would increase competition between Big 4 firms and second-tier firms but not between Big 4 firms and small audit firms. The reason is that the smaller firms do not have the capacity to compete. In France, despite applying joint audit, the market is not less concentrated (measured by audit fees) than in other European countries.[39]
8. There is substantial evidence of a positive association between joint audit and audit fees. There has never been evidence that joint audit leads to lower fees.
9. Stakeholders (e.g., in the UK) were opposed to the introduction of a joint audit, mainly citing increase in cost, complexity, and lack of evidence regarding audit quality.
10. None of the experts advised making the joint audit model mandatory per se. It depends on the context such as whether audit risks are high in a particular sector, whether there is a risk that a Big 4 might collapse, or whether the non-Big 4 are close to the Big 4 in terms of resources. One might better think of strengthening the role of audit committees (in the audited company).[40] Quality control systems within audit firms and structures such as group audits[41] capture most of the desired effect of joint audit on quality. Joint audits might only improve the feeling that external stakeholders have that auditors are doing what they are supposed to be doing.
11. If joint audits are applied, then it should be accompanied with a workload regulation because large companies tend to choose two Big 4 firms as they do not trust smaller ones.[42]
12. Joint audit as signalling device: If joint audits conceptually would improve audit quality, then a good quality company could choose joint audits to signal its high financial quality albeit with a higher audit fee.

[39] Bédard and Schatt, 2020.

[40] E.g., in Germany, supervisory boards do not have their own budget for audit fees. They have to ask the management board for an audit budget. A strict audit committee might have more incentives to elect two audit firms in a voluntary setting whereas a management board might just give little money and select a single auditor.

[41] In a group audit, the group auditor gives guidelines and pushes other auditors toward a certain direction and there is a clear hierarchy. In contrast, in a joint audit both audit firms agree on the audit approach, without giving deadlines or guidelines to the joint auditor.

[42] The French regulator demands a balanced workload and fee division between the two firms (balance has not been defined: 60/40 is encouraged, 70/30 also okay but needs to be explained, 90/10 is not allowed).

In a second workshop we discussed the preliminary results of the present report.[43] The experts agreed with our main conclusions.

2.3 Experiences of regulators

We have sent questionnaires to regulators in the following countries: Belgium, Denmark, Finland, France, Germany, Italy, Norway, Spain, Sweden, United Kingdom, South Africa, and the United States and interviewed the Dutch regulator.[44] Only the French supervisor, H3C, had a positive stance towards joint audits.[45]

France

In France, joint audit was established by law in 1966. According to the June 1965 and June 1966 parliamentary debates records, joint audit aimed first and foremost at strengthening the financial transparency, and at reducing the risk of fraud. The presence of two joint auditors was seen as a means to reduce the risk of collusion that may exist between a single statutory auditor and the management of the audited company. In other words, joint audit was dedicated to protection of investors/owners.

According to H3C joint audit increases the quality of audit work, as:

- It requires an appropriate cross review of the audit work by the other auditor, resulting in a challenging approach between the firms ("two sets of eyes" approach),
- The presence of two joint auditors reduces the risk of collusion that may exist between a single statutory auditor and the management of the audited company,
- The presence of two joint auditors increases the power of the auditor in challenging positions of management,
- Joint audit brings complementarity in the audit work. The presence of two statutory auditors allows the availability of a broader range of skills, which is in

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[43] In this second workshop, the following experts were present: Mingcherng Deng, Qiang Guo, Claus Holm, Christopher Koch and Patrick Velte.

[44] Appendix 2 provides a list with regulators.

[45] According to article L.823-2 of the French Commercial Code, joint audit is required in France in all entities required to publish consolidated financial statements, whether these entities are PIE or non-PIE entities. According to article L.511-38 of the French Monetary and Financial Code, joint audit is also required in all the "établissements de crédit, sociétés de financement et entreprises d'investissement" (which can be translated as follows: "credit institutions, finance companies and investment companies"), even if no consolidated financial statements publication is required. All other entities are allowed to appoint more than one statutory auditor, on a voluntary basis.

particular useful when the audited entity is positioned in specific sectors, professions or geographical areas,
- Joint audit facilitates the continuity of the audit, since the loss of information on the audit work is minimal when one of the auditors is replaced, as the remaining auditor has full knowledge of the entity and is able to share his experience with the new incoming joint auditor.

Also, if significant accounting scandals are used as a measure of quality of financial reporting, and indirectly as a measure of audit quality, H3C notes that the French audit market seems to compare favourably with other European markets.[46]

According to H3C, joint audit affects the culture within accountancy firms, as:

- Collegiality is requested from the pair of auditors, who are therefore required to collaborate rather than to compete on the engagement they perform together,
- The college of auditors reinforces the position of the audit firms vis-à-vis the audited entities, resulting in an increased independence and professional skepticism of the auditors,
- Joint audit increases the technical competence of the audit firms by sharing experience between them.

H3C has done no empirical evaluation of the joint audit model on quality.

According to H3C, the supplementary cost of a joint audit is minor for the audited entity due to a specific French division standard of the audit work between the joint auditors to avoid any duplication of their efforts. A specific French auditing standard deals with the organisation of joint audit in order to avoid duplication of work. This standard requires a balanced approach in sharing the audit work amongst the joint auditors, taking into account quantitative (number of working hours, amount of fees allotted to the auditors, etc.) and qualitative (experience, qualifications of audit team members, etc.) criteria. H3C ensures that the joint audit is sufficiently balanced, avoiding that one auditor just signs off the audit report while all the audit work is done by the other, by performing external public inspections to ensure proper balance. Amongst other useful guidance to determine whether the distribution of work between joint auditors is a priori balanced or not, the H3C guidelines put forward the following typology:

- A breakdown of the volumes of hours allocated to each joint auditor and the amount of fees remaining within the limit of a 60%-40% ratio induces a simple presumption of balanced distribution of work,

[46] See also AFM, 2018, p. 69. AFM sees the relatively low number of financial scandals that occur as a result of mistakes in statutory audits in France as an indication of the joint audit model's benefits.

- A breakdown of the volumes of hours allocated to each joint auditor and/or the amount of fees between a 60%-40% and a 70%-30% ratio does not imply any presumption regarding the balanced or unbalanced nature of the distribution of work,
- A distribution of the volumes of hours allocated to each joint auditor and/or the amount of fees exceeding the 70%-30% ratio, but without reaching a 90%-10% limit, induces a presumption of unbalanced distribution of work. This presumption needs to be duly justified by taking into account qualitative criteria, and deserve a reconsideration of the allocation over time,
- A distribution of the volumes of hours allocated to each joint auditor or of the amount of fees reaching or exceeding the 90%-10% ratio is always disproportionate and therefore leads to an unbalanced distribution of work.

The main characteristics of the audit work sharing are the following.

	Performed by each auditor	Performed together	Divided between the auditors
Understanding entity and assessing risk of material misstatement at financial statement level, materiality level(s)	x		
Overall audit strategy and audit plan		x	
Audit procedures			x
Cross review of work performed			x
Analytical procedures	x		
Audit report		x	

H3C has not done any empirical study on the effect of joint audit on audit fees. However, some listed entities had reported to H3C that the minor extra-cost is an investment aimed at improving the competitive situation in the French audit market, which in return brings advantages. Also, according to H3C, the bigger the entity, the lower the additional cost will be, since the sizes of the audit teams will increase and require time for intra-audit firm coordination, which will be similar to the time spent on coordination with the joint auditor.

According to H3C joint audit has a positive impact on the audit market structure, as it allows for wider access to large audits for mid-tier and smaller audit firms. In France, in 2018, only 55% of the PIE engagements in France were held by the Big 4.[47] In 2018, 72% of the revenue from PIE statutory audits in France were captured by the Big 4. At the EU-level, the Big 4 captured the same year 90% of the total revenues of the PIE statutory

[47] This is a lower percentage than in other European markets. The Big 4 holds an average EU-market share of 70% of all PIE statutory audits in 2018, see EC, 2021, p. 6.

market.[48] According to H3C, there is a risk that were mandatory joint audit to be abandoned in France, this could result in an increased market share for the Big 4. Some entities with activities in several countries might prefer to appoint an auditor from a large network with international coverage. If joint audits were no longer a requirement, listed entities might also be under increased pressure from market participants to choose a large network rather than a smaller firm.

H3C advocates, when setting up a joint audit system in other countries, to add a measure to incentivise smaller players to gain access to the market in order to avoid that joint audit splits the work only amongst the biggest market players. One of the measures that facilitates the access to the market of smaller firms and investment from smaller players is a combination of the joint audit with a minimum duration of the audit engagement as this gives more time to recoup the investment. In France, the duration of the engagement is 6 reporting years.[49]

H3C believes that a significant number of entities (management, board members, shareholders) in France are satisfied with the mandatory joint audit system. However, no empirical evaluation is available.

Spain

Next to France, also the Spanish oversight entity, ICAC, has a somewhat positive stance towards joint audit, especially with regard to potential increased long-term competition. ICAC is still analysing joint audits to see if there is a benefit in including some provisions to promote joint audits. No mandatory joint audit is foreseen in legislation. In 2019, 69 companies voluntarily conducted a joint audit. According to ICAC, joint audit implies an increase in the audit fees paid by the audited entity since some additional work must be carried out and because of the cross revision carried out by the joint auditors. ICAC has no data on how a joint audit impacts the audit quality. According to ICAC, a mandatory joint audit system could lead to a less concentrated audit market but only on the condition that the joint audit is regulated based on the compulsory participation of a non-Big 4 firm, which would however imply conditioning the free decision of the audited entity and intervening in the market. Establishing such limiting provisions is not possible in Spain since they would contradict the legislation on market competition.

[48] EC, 2021, p. 7.

[49] This is aimed at protecting the auditor's independence vis-à-vis its clients. It also incentivises smaller firms to join the PIE market by giving them a perspective of 6-year future revenues which allow them to invest in staff and tools. This compulsory duration of the engagement is, as such, alongside the joint audit, a measure that facilitates the improvement of the competition in the audit market.

Regarding the performance of the joint audit, a Technical Standard on Auditing ruling the joint audit was approved in Spain in 2014. Some aspects of that standard have been introduced in the Regulation that develops the Law on Auditing which has been approved in January 2021. These provisions include the following aspects:

- When several auditors are appointed to carry out an accounts audit work, there will only be one audit report and it will be issued under the responsibility of all of them, who will sign the report and be subject to the provisions of the regulations governing the audit activity.
- In the event of a discrepancy regarding the technical opinion to be issued, each auditor will present his opinion in a different paragraph of the audit report and state the reasons for the discrepancy.
- The jointly appointed auditors cannot belong to the same network, and all circumstances that could affect the necessary independence in relation to the audited entity must be communicated between them.
- The relationships between the appointed auditors and the actions to be taken regarding to the audit work will be carried out in accordance with the specific auditing standard.
- The appointed auditors will be responsible for the safekeeping and conservation of all work papers corresponding to the audit work.

South Africa

In South Africa, in the case of large banks, the South African Reserve Bank (SARB) issues a directive on an annual basis requesting that large banks be jointly audited. The annual directive is issued in terms of Section 61 of the Banks Act. SARB is also preparing a Directive to include large insurers within the scope of the joint audit requirement. Joint audits in sectors other than the banking sector are not required by legislation in South Africa. In South Africa, some entities voluntarily appoint joint auditors. According to the South African audit regulator, IRBA, there is no difference in audit quality between a joint audit and single auditor performed audit, but IRBA does not have empirical data on this. Also, IRBA expects joint audit fees to be higher, but has no empirical evaluation to base this on. Surprisingly, in the banking sector the Big 4 have a larger market share than in other sectors where no joint audits are applied. The Joint Audit Guide by the IRBA serves to encourage joint audit engagements.[50]

United Kingdom

The audit regulator in the UK, FRC, does not support mandatory joint audit for the UK due to concerns about its potential impact on audit quality. In FRC (2019), FRC comments on

[50] irba.co.za/upload/Final_Guide_Joint%20Audit%20Engagements%20_%20Aug%202020.pdf.

the lack of an evidence base to support the use of joint audit as a way of delivering consistently high-quality audits for large and complex organisations. The FRC stated that more evidence is needed to support the contention that joint audits are associated with higher audit quality. The FRC also mentioned that there is no clear evidence that the model of joint audit used in France has had a positive impact on audit quality and noted that in Denmark, Sweden, and Canada there had been a move away from mandatory joint audit.

Instead, FRC prefers mandatory managed shared audit as a mechanism for increasing choice in the FTSE 350 audit market and reducing concentration. In a shared audit, the group auditor provides an audit opinion on the group accounts while one or more other firms perform component audits. Contrary to joint audits, in shared audits the full responsibility lies with the group auditor, as they are the only one to sign the group audit opinion. The FRC proposal for mandatory managed shared audit would require FTSE 350 Audit Committees to invite a firm to tender for the group audit (which may be undertaken by a Big 4 firm) and to invite a non-Big 4 firm to tender for an audit of a subsidiary or subsidiaries within a group that are subject to statutory audit requirements. FRC believes that mandatory managed shared audit would increase the non-Big 4 firms' proportion of audit clients and audit fees and would allow them over time to grow their capacity and capability to take on larger, more complex audits as sole auditors.

In July 2020 the FRC published its latest audit inspection results for the seven largest audit firms and commented as follows: 'We are concerned that firms are still not consistently achieving the necessary level of audit quality. While firms have made some improvements and we have observed instances of good practice, it is clear that further progress is required. The tone from the top at the firms needs to support a culture of challenge and to back auditors making tough decisions."[51]

Regarding the effect of joint audit on market concentration the FRC noted in FRC (2019) that in France, despite mandatory joint audit, the Big 4 firms still earn 85% of total audit fees from the largest listed audit clients.

Regarding the effect of joint audit on audit fees the UK competition agency (CMA) suggested that audit fees could increase as a result of its proposal for mandatory joint audit.[52]

It is interesting to note that FRC prefers shared audits above joint audits, as the discussion in the UK started in 2019 with a recommendation from the CMA to mandate joint audits.

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[51] More details on these inspection results and the steps that the FRC is taking or intends to take to ensure the firms respond to these findings can be found via this press release (https://www.frc.org.uk/news/july-2020/results-of-frc-audit-inspections).

[52] See CMA, 2019, paragraph 6.74.

The CMA did not do this for the purpose of improving quality in the short term, but as a means to increase the number of big firms. The main goals were to increase resilience and available choice. Therefore, the CMA suggested to mandate a joint audit with a non-Big 4 firm. The CMA expected that it should take at least five years to bring the desired effect as capacity has to build up. In the long term the CMA expected higher audit quality as a result of more competition.

In the same year Brydon (2019) very much doubted the effect of joint audits on audit quality. As data was missing to base the expected quality effect on, Brydon even refused to consider joint audit as an option to increase audit quality.

The UK government recently dit not recommend joint but shared audits.[53] It did this after consultation of CMA (2019). The main reason to choose shared over joint audits is that with shared audits non-Big 4 firms are only liable for their own audit. The government is of the opinion that non-Big 4's can grow easier without the burden of total liability. Furthermore, shared audits give them more perspective on stable income streams, making investments in capacity and quality easier possible.

The aim of the mandatory shared audit would not be to increase the audit quality, as there is not sufficient evidence to support this claim, but to increase long-term competition between audit firms. In theory, a shared audit could do better at this than a joint audit, because second and third-tier audit firms could perform smaller parts of the audits (component audits), with the group auditor reviewing the work. Another advantage of the shared audit as an alternative structure is likely that the audit fee would not increase as much as with a joint audit. Although not much research was found on this, this seems like a reasonable assumption because less of the work would be duplicated. It should be noted that companies are free to voluntarily opt for a shared audit. In fact, voluntary shared audits are already taking place in the Netherlands.

Other countries

Other regulators/oversight bodies, including the Dutch AFM, are not convinced of the advantages of joint audit, or did not have any (or negligible) experience with joint audits (e.g., Italy, Sweden) or have not considered it at all (e.g., United States). The general view is that there is no evidence that joint audits increase audit quality, but the joint audit model makes audits 10-15% costlier and more complicated due to the coordination between the two audit firms.[54] Some regulators, however, believe that a mandatory joint audit system could lead to a less concentrated audit market. Also, the additional knowledge that an auditor gains when participating in a joint audit could possibly positively influence the

[53] BEIS, 2021.

[54] See e.g., AFM, 2018, p. 69, FRC, 2020, and CMA, 2019, paragraph 6.74.

firm's quality management system. The concentration in Denmark after the abolishment of the mandatory joint audit system seems to have increased. The audited entities supported the abolishment of joint audit in Denmark. In Belgium there is regulation in place to facilitate or organise a joint audit.[55] Instead of making joint audits mandatory, regulators also raised the issue to optimise internal quality control (within their own organisation/network), for example by using an independent reviewer or engaging a specialist. With this, one could get the same result while saving a lot of time and money that otherwise go to coordination between audit firms. Some regulators are of the opinion that, in order to foster a positive impact of mandatory joint audits (if applied), respective enforceable guidance on how to perform joint audits is needed.

2.4 Experiences of audit firms

We have sent questionnaires to French and South African audit firms[56] and interviewed Deloitte in the Netherlands, who is one of the two audit firms performing a joint audit for KLM. From the answers to the questionnaires a clear picture arises. In France, Big 4 have a negative stance towards joint audits while second-tier audit firms have a positive stance.[57] In contrast, in South Africa Big 4 firms are somewhat more positive towards joint audits. Overall, Deloitte experiences more disadvantages than advantages with the joint audit model.

> "A joint audit increases execution risk and I see little evidence that it adds any technical quality. The "second pair of eyes" is somewhat of a myth as audit procedures within a firm already require such second reviews and consultations to ensure critical audit decisions are well founded. Also, an audited company may be tempted to "opinion shop" between its two auditors. Joint audits objectively add complexity to the quality control system due to the added tasks necessary in relation to the joint auditor's work with no clear benefits for quality."
>
> – *Audit partner of PwC France*

[55] Art. 3:61, § 3 of the Belgian Code on Companies and Associations, Article 25, § 1 and § 3 of the Law of 21 March 1991 on the reform of certain economic public companies.

[56] We chose these two countries because in France, joint audits are obligatory and in South Africa, joint audits are required by the South African Reserve Bank (Prudential Authority) for certain organisations in the banking and insurance sectors. We have not approached audit firms in Denmark because the mandatory joint audit model was abolished too long ago (in 2005). Appendix 3 provides a list with respondents to the questionnaires.

[57] This is in line with the literature. Guo *et al.* (2017) show that medium-sized firms would benefit from an introduction of mandatory joint whereas the Big 4 would lose market share.

Most Big 4 firms in France claim that joint audit will decrease the audit quality (types 1 & 2), while most second-tier audit firms claim the opposite.[58] According to some Big 4 firms there is a lack of efficiency and there is a risk of losing the "big picture" when sharing the work.

Additionally, when the other auditor is not a Big 4, there is a risk that some areas are not sufficiently covered by audit procedures and additional work has to be performed to fill the gap. Some second-tier firms claim that the audit quality (type 3) increases due to increased professional scepticism (as a result of the four eyes principle) and increased necessity for the auditor to self-challenge necessary skills and expertise. Moreover, joint audits might lead to a culture of sharing and investing. Most audit firms do not see a large effect on perceived audit quality (type 4). A few second-tier firms claim however that joint audits lead to much higher perceived audit quality.

Most firms (aside from some second-tier audit firms) agree that joint audits lead to somewhat higher audit fees than single audits: the difference (between 5% and 20% more) comes from the tasks performed by both firms (analytical review, the one or two most important audit matters if there is an opinion issue, files review of the other firm, meetings with the client) and coordination. According to Big 4 firms the main effect of joint audit is an additional cost for the audit firm and the client, work duplication, increased risk of not having the right coverage, and complexity due to different tools and methodology.

Second-tier audit firms claim that they are better able to compete with Big 4 firms in a mandatory joint audit system compared to a voluntary joint audit system in the sense that they audit relatively many listed companies[59] and have a relatively high turnover (relative to what is common in other countries).

In an interview with Deloitte, who is one of the joint auditors of KLM in the Netherlands, it becomes clear that they experience more disadvantages than advantages with the joint audit model. Certain disadvantages they state, which may impact audit quality, are:

- time and resources required for a joint audit from both firms are significantly higher than for a single firm audit,
- the time spent on communication between the two audit firms,
- more compliance due to the double mandatory quality review (in Dutch “opdrachtsgerichte kwaliteitsbeoordeling”) that needs to take place,
- not having continuous access to all information because it is in possession of the joint auditor,

[58] In South Africa, Big 4 firms claim that joint audits have a positive effect on audit quality (type 1, 2, 4).

[59] 17 audit firms are auditing prime listed companies in France.

- compromising the tools used, meaning that there is no consistency in the use of the quality control system of one of the audit firms (potentially leading to a decrease in type 2 of audit quality),
- the unnatural division of audit tasks, merely to obtain a fair division of the work and fees between the audit firms.

The two advantages named are that together the two audit firms can stand stronger in their discussions with KLM and that they can learn from the other firm.

2.5 Experiences of audit clients and interest groups

We have interviewed two French audit clients (Domia Group and NetCo), Air France-KLM (joint audit), Randstad (shared audit, group audit), and interest groups (FEA, Eumedion, VEB, VNO-NCW, and VEUO) in the Netherlands. We have also sent questionnaires to French and South African audit clients, but given the very low response rate, the answers to the questionnaires give no good view on the opinion of audit clients.[60] The results in this section should therefore be treated with care as it is based on a very few observations. According to the interviewed companies in the Netherlands and France, mandatory joint audits do not have an effect on audit quality (type 1-2-3). They state that with a single audit (of a Big 4 firm) an audited company has enough checks and balances (for example that independent partners, who have nothing to do with the audited company, checks the audit work of colleagues within the same Big 4). In their belief the four eyes principle is already there. They also state that the audit quality may be perceived higher by shareholders/investors (audit quality type 4). Survey research by Holm and Thinggaard (2018) indicates that CFOs perceived no difference in the audit quality of a single audit compared to a joint audit after the abolishment of the joint audit in Denmark in 2005. This finding was supported by a quantitative analysis of the effect of joint audit on audit quality (performed in the same time period), indicating no significant effect.

The two companies in the Netherlands (Air France-KLM and Randstad) have never heard of any investor urging audit clients to choose a joint audit. Audit clients in the Netherlands prefer single audits to joint audits. Reasons provided were lower costs, less hassle, less discussions/meetings, more flexibility. In contrast, most audit clients in France would still choose a joint audit if joint audits became voluntary; a single audit would probably be

[60] We had a very low response rate despite sending reminders and making direct telephone calls; probably most audit clients have no incentive to respond to a Dutch enquiry. Moreover, from our consultation with academic experts it became apparent that some of them also had difficulties finding people to survey within audit clients. Appendix 3 provides a list with respondents to the questionnaires.

difficult to explain to investors.[61] According to the companies, the audit fees of a joint audit are about 20-40% higher (relative to a single audit), some even say 50% higher.

> "Frauds are caused by internal financial tampering. These frauds do not come to light through discussions between two audit firms. To combat fraud, it is better to take other measures, such as a shared audit construction with local smaller offices and by auditing statutory annual accounts."
>
> – *Managing Director Global Accounting of Randstad*

In Denmark, 95% of the audit clients chose for a single audit by the end of 2010 after abolishment of the mandatory joint audit system in 2005.[62] Also in other countries where joint audits are voluntary most audit clients choose for a single audit. This supports our results from interviews that audit clients outside France prefer single audits to joint audits. Moreover, audit clients in the Netherlands are of the opinion that audit firms do not have the capacity to perform joint audits (if a mandatory joint audit model were introduced).

The interviews with interest groups (FEA, Eumedion, VEB, VNO-NCW, and VEUO) do not lead to much enthusiasm for joint audits.

FEA's main concern is the lack of capacity. There are only four major players for big companies. The combination of mandatory rotation and the ban of combining advice with audit diminishes the number of players even more. A joint audit then causes problems. Also, costs will be higher, which is not in the interest of companies and shareholders.

Eumedion has no definitive view on joint audits. They wait for the present report to form an opinion. They see pros and cons. Pros are that two firms might discipline each other, that in a conflict the auditor has a stronger position, that France proved that Mazars is a serious extra player and that voluntary experiments like for Randstad seem positive. As cons they see more complexity, discussions about who is responsible if it goes wrong, less overview with more players, a tendency to choose two Big 4 firms, imbalance between a Big 4 and a second-tier player, doubts whether smaller firms are independent enough, problems with US shareholders and possibly the US regulator who might not accept such a complicated division of responsibilities, a lack of competitors, and a lack of capacity. They stress the importance of increasing auditor quality but see other instruments than joint audits to stimulate that.

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[61] A possible reason why the French will still choose for joint audits, in contrast to their Dutch counterparts, is that in France joint audit is a custom while it is not in the Netherlands.

[62] Lesage *et al.*, 2017.

VEUO is not enthusiastic either. They see the theoretical idea, however it is unclear what problem this measure actually wishes to address (the shortage of PIE accountants or increasing the audit quality). At the same time this would lead to several practical problems. For the client it is likely that it would lead to more inefficiency and complexity and certainly not lower cost. The client has to work with two different accountant teams requiring an extraordinary amount of tuning and coordination. At the same time, France did not prove a quality increase and the various studies hardly showed any benefits either, let alone benefits that have been empirically substantiated. Furthermore, big clients will preferably stay with the more specialised Big 4 accountants (considering the international and complex field in which they operate) resulting in less competitors instead of more, certainly in combination with mandatory rotation and the ban of combining advice with audit. VEUO would also like to see more PIE accountants, but joint audits do not offer the solution. Especially when joint audits are only introduced in the Netherlands this is very difficult as you need an international firm. Finally, they fear that a joint audit will in practice be a shared audit, with all the accompanying practical and impractical inefficiencies and required coordination, but without an extra pair of eyes.

VEB recently published an interesting paper (VEB-European Investors, 2021) describing the pros and cons of joint audits based on recent international academic literature and relevant case studies on joint audits. In theory they see the potential of joint audits. Given the evidence gathered to date, they are not convinced that joint audit is the silver bullet. Potentially, a pilot could provide the evidence that is currently missing. They are open to a joint audit if such a pilot would prove a quality enhancing effect, for instance if in the long-term joint audits lead to more available firms for the audit of companies (more competition, less market concentration). But this will take a lot of time and they point to other options that might be more interesting. VEB-European Investors stresses the importance of the audit committee as the central player that should take more responsibility. According to European Investors-VEB tackling market failures with alternative structures, other than joint audits, will most probably have more potential benefits. The same is true for additional steps regarding the necessary culture change required in the accountancy sector such that in a joint effort the quality delivered by the auditors and audit firms themselves improves and is more consistent. Improving the effectiveness, independence and professional skepticism role of the OKB (EQCR, engagement quality control reviewer) might help here. If these changes are made, a joint audit could be unnecessary.

VNO-NCW raises the question if joint audit is aimed at increasing audit quality or influencing the supply side of the audit market (or both)? VNO-NCW has serious doubts about the effects of joint audits in the Netherlands. The known evidence is very scarce and point not in the direction of a higher quality when joint audits are used. Experience of firms (e.g. as a result of a link to France) confirms that there is no increase of (perceived) audit quality in a joint audit compared to a ‘single’ audit. Furthermore, firms experience more challenges during a joint audit. For example, communication increases heavily with higher audit and internal costs as a result, while the quality is not improved. They experience also that the market does not value joint audits, e.g. following from credit procedures that are not easier. Furthermore, given the low number of players, the mandatory rotation and the ban of combining advice with audit makes joint audits problematic as it decreases the number of available players. PIE firms foresee capacity problems and experience them also already in joint audit circumstances. Audits are more and more digitalised which contributes to audit quality. However, the increasing digitalisation makes joint audits more difficult as integration of the firm administrative processes with the (divergent) audit software of two audit firms is more complicated than with one audit firms. Finally, if the goal is to add more big players to the Big 4, it is a fact that this is very difficult given the international needed knowledge and capacity for internationally operating (PIE) firms.

3. Conclusion

Over the years, various institutions have discussed the introduction of joint audits as an instrument to increase (long-term) audit quality as four eyes from two audit firms would result in higher audit quality. Furthermore, it would reduce market concentration as it increases the chances and experience of non-Big 4 firms. However, most arguments used in favour of joint audits are theoretical and not based on empirical findings. This study tests whether theoretical arguments are valid based on the empirical literature, opinions from scientists, and experience from regulators, audit firms and clients.

Looking at the empirical literature, there is very limited evidence of a positive effect of joint audits on audit quality, despite the large amount of research that has been done on the topic. The vast majority of empirical literature finds no effect of joint audit on audit quality. Negative effects are not found in the literature, positive effects are rarely found.[63] Most literature is concentrated on the technical quality (type 1), very few papers study the effect on the other types of quality. However, there is evidence that culture (type 3) in terms of professional scepticism improves more if internal reviews are done professionally compared with a joint audit (and compared with a no-review system). For perceived quality (type 4) some evidence is found for a positive effect. For type 2 (the effect of joint audit on the quality control system) no evidence is found.

Limited empirical research has been done on the effect of joint audit on market concentration. In Denmark, research indicates that the Big 4 market share significantly increased after the abandonment of the joint audit in 2005. In France, the market share of Big 4 firms is lower in comparison to other European countries. The lower concentration

[63] Positive effects for the four eyes principle are less rare. As this principle can also be organised within one audit firm, this insight is not relevant for our research question.

in France is dominated by the effect of Mazars. Also, in France concentration increased as the number of main actors decreased from eight to five from 1997 to 2003. The Herfindahl index was 0.2 in 2017, indicating five effective competitors. This shows that joint audits in France probably only saved Mazars as a main player. Furthermore, the concentration is higher in terms of audit fees than in terms of clients. This indicates that especially big companies choose two Big 4 firms as joint auditors.

Most studies on the effect of joint audits on audit fees indicate a positive relationship. However, some empirical studies found no effect. There are no papers that find an audit fee reducing effect. The effect of audit pair composition and work allocation (among the joint auditors) on audit fees in a joint audit setting is unclear.

According to leading scientific researchers there is very limited empirical evidence of a positive effect of joint audit on audit quality (type 1-2-3-4). The experts advise not to implement mandatory joint audits if the objective is to improve audit quality (type 1, 2 and 3). Firms are already capable of maintaining a high technical quality. It could however be that joint audits improve the perceived quality (type 4 of audit quality) by external stakeholders. In contrast to the amount of evidence of the effect on audit quality, there is substantial evidence of a positive effect of joint audit on audit fees in the academic experts' view.

According to the academic experts, it is likely that introducing joint audits would increase competition between Big 4 firms and second-tier firms but not between Big 4 firms and small audit firms. The reason is that the smaller firms do not have the capacity to compete. Most experts are of the opinion that the pair structure of the joint audit does influence audit quality. Big 4 - Big 4 audit pairs probably lead to the highest audit quality. If a third-tier audit firm (non-Big 6 firm) is part of the audit pair, the audit quality will very likely be lower. A third-tier audit firm does not have the expertise in house to audit listed companies/PIEs. Thus, if the main argument for mandating joint audit is long-term competition, an audit pair with a non-Big 4 firm is preferred, however then there is a risk that audit quality will deteriorate in the short term. Mandating a non-Big 4 being part of the audit pair is therefore not without risk.

Given these research findings and expert opinions, in addition to the experiences of regulators, audit firms, audit clients, and Dutch interest groups that we have gathered, the three research questions can be answered as follows.

RQ1: Do joint audits score better, on average, on the four types of audit quality than audits conducted by a single audit firm?

Type 1 (procedural aspects of the quality). We conclude that joint audits do not affect type 1 quality of audits, relative to single audits.

Type 2 (set of measures to ensure good audit quality). Very little research has been done on the effect of joint audit on type 2 quality. Based on the information collected for this research, we lean towards the conclusion that joint audits negatively affect type 2 quality, relative to single audits. Conducting an audit with a second audit firm complicates the quality management system as audit firms now have to deal with the other auditor's set of internal quality assessment systems on top of their own.

Type 3 (factors that have a material effect on quality, such as the culture within the audit firm, the governance of an audit firm and the remuneration system). Due to the difficulty of measuring this type of quality, little information can be found on the effect of joint audit. Research on the professional skepticism of Dutch auditors shows that auditors in the joint audit are the least skeptical in their judgement, suggesting a negative effect on type 3 quality. We conclude that joint audits probably affect type 3 quality negatively, relative to single audits.

Type 4 (perceived quality). Whether the perceived quality of audits is higher when conducted jointly by two audit firms than when conducted by a single firm depends on whom you ask. Academic research presents both positive and no effects. Most audit firms claim that there is no effect, while some second-tier firms suggest a strong positive effect. Audit clients in the Netherlands and France suggest that joint audit quality may be perceived higher by shareholders/investors. However, audit clients in the Netherlands have never heard of any investor wanting audit clients to choose for a joint audit. Interest groups find perceived quality a strange argument and stress the importance of the real quality. We conclude that there might be a positive effect of joint audits on perceived quality, but that it is not sure and that it would be strange if this effect is decisive to introduce joint audits mandatorily. For parties that are interested in the effect on perceived quality, the voluntary joint audit is available already. Interviews with representatives of VEB, Eumedion, VNO-NCW, FEA, and VEUO learns that these institutions see no evidence that perceived quality will improve when joint audits are introduced.

Overall, we conclude that joint audits do not score better on the first three types of audit quality than audits conducted by a single firm.

RQ2: What are the observed (intended and unintended) effects of the joint audit model?

To answer this research question, we delved into the effects on market concentration, audit fees, and welfare.

Market concentration. The abolition of the joint audit in Denmark has led to an increase in the audit market concentration. In France, the market concentration is lower than that of other European countries, due to Mazars being a big player. The Spanish oversight entity expects that introducing voluntary joint audits could lead to positive long-term competition effects. Contrary to first-tier audit firms, second-tier firms claim that they are better able to compete with Big 4 firms in a mandatory joint audit system compared to a voluntary joint audit system.

Audit fees. Although all findings point to the direction that joint audit fees are higher than single audit fees, there is great discrepancy in the size of the difference. The literature predicts 5-20% increase in cost due to joint audits but even higher percentages are mentioned in interviews.

Welfare. Looking at it from the demand side, there is some evidence suggesting that an introduction of a mandatory joint audit would decrease welfare, because clients are not allowed to give all the audit work to their most preferred audit firm.

RQ3: How is the joint audit model perceived by stakeholders in the Netherlands and abroad?

From all regulators, only H3C (France) has a positive stance towards mandatory joint audits. ICAC (Spain) has a somewhat positive stance towards voluntary joint audit mainly because of the expected long-term competition effects of joint audits. The FRC (UK) does not support mandatory joint audit for the UK and prefers mandatory managed shared audit as a mechanism for increasing choice in the FTSE 350 audit market and reducing concentration. We do recommend investigating this further if the policy goal is to increase the number of big players, because mandatory managed shared audit goes less far than joint audits and thus avoids costs while reducing the difference between Big 4 and non-Big 4. All other regulators/oversight bodies, including the Dutch AFM, are not convinced of the advantages of joint audit, or did not have any (or negligible) experience with joint audits (Italy, Sweden) or have not considered it at all (United States). The main reason for that is that they do not expect the audit quality to improve, while the audit cost is expected to increase.

Considering that one of the main tasks of the Dutch AFM is to monitor the audit quality, it is important to emphasise that they are not convinced of the advantages of joint audit and would not recommend implementing it.

Big 4 firms in France have a negative stance towards joint audits and second-tier audit firms a positive stance. In contrast, in South Africa also Big 4 firms are positive towards joint audits. Most Big 4 firms in France claim that joint audit will decrease the audit quality (types 1 & 2), while most second-tier audit firms claim the opposite. According to some Big 4 firms there is a lack of efficiency and there is a risk of losing the "big picture" when sharing the work. Most audit firms do not see a large effect on perceived audit quality (type 4). A few second-tier firms claim however that joint audit leads to much higher perceived audit quality. Most audit firms (except some second-tier audit firms) agree that joint audits lead to somewhat higher audit fees: the difference (between 5% and 20% more) comes from the tasks performed by both firms (analytical review, the one or two most important audit issues if there is an opinion issue, files review of the other firm, meetings with the client) and coordination. Second-tier audit firms claim that they are better able to compete with Big 4 firms in a mandatory joint audit system compared to a voluntary joint audit system.

According to a few audit clients we interviewed in the Netherlands and France, mandatory joint audits do not have an effect on audit quality, but the audit quality may be perceived higher by shareholders/investors. However, audit clients in the Netherlands have never heard of any investor wanting audit clients to choose for a joint audit. Audited international companies in the Netherlands that are obliged to do joint audit, would choose for a single audit if joint audit would not have been obligatory. Reasons provided were higher costs, more hassle, more discussions/meetings, less flexibility with a joint audit. Most audit clients in France would still choose a joint audit if joint audits became voluntary; a single audit would probably be difficult to explain to investors as they might think that less attention is given to the audit if a single audit is applied. According to the audit clients, the audit fees of a joint audit are about 30-40% higher (relative to a single audit), some even say 50% higher.

Interviews with representatives of VEB, Eumedion, VNO-NCW, FEA, and VEUO learns that these institutions are not very enthusiastic about joint audits. The main objections are there is no evidence that quality will improve, while costs will rise. Furthermore, they fear that the number of available audit firms will diminish, certainly in combination with the mandatory rotation, the ban on combining advice and audit, and when joint audits are only introduced in the Netherlands. Several of them point to other options to increase audit quality.

In Denmark, 95% of the audit clients chose for a single audit after abolishment of the mandatory joint audit system in 2005. Also, in other countries most audit clients choose for a single audit if the joint audit is voluntary. From this we can infer that audit clients generally prefer single audits to joint audit. Moreover, audit clients in the Netherlands are of the opinion that audit firms do not have the capacity to perform joint audits (if a mandatory joint audit model would be introduced).

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Appendix 1: Academic experts

Expert	University
Mingcherng Deng	Baruch College (City University of New York), USA
Nathalie Gonthier Besacier	Grenoble Alpes University, FR
Qiang Guo	University of Southern Denmark, DK
Claus Holm	Aarhus University, DK
Christopher Koch	Johannes Gutenberg University Mainz, DE
Jaana Kettunen	University of Jyväskylä, FI
Nadia Mhirsi	Université de Bourgogne, FR
Javed Siddiqui	The University of Manchester, UK
Patrick Velte	Leuphana University Lüneburg, DE
Aiyong Zhu	Wuhan University, CN

Appendix 2: Regulators

Country	Regulator
Belgium	CTR-CSR-BAOC
Denmark	DBA
Finland	PRH
France	H3C
Germany	APAS
Italy	CONSOB/MEF
Netherlands	AFM
Norway	Finanstilsynet
South Africa	IRBA
Spain	ICAC
Sweden	SIA
United Kingdom	FRC
United States	PCAOB

Appendix 3: Audit firms, audit clients and interest groups

Country	Audit firm	Position of interviewee(s) / respondent(s) to questionnaire
France	BM&A	CEO
France	Deloitte	Partner/RRL
France	EY	Professional practice director
France	Mazars	Member of the Executive Board & CCO
France	PwC	Audit Partner
France	RSM	Partner
Netherlands	Deloitte (Group Auditor Air France-KLM)	Partners
South Africa	KPMG	Director
South Africa	PwC	Director

Country	Audit client	Position of interviewee(s) / respondent(s) to questionnaire
France	Capgemini Group	Group Financial Services Director
France	Groupe Domia	CFO
France	NetCo	CFO
Netherlands	Air France-KLM	CFO Vice President Reporting & Control
Netherlands	Randstad	Managing Director Group Business Risk & Audit Managing Director Global Accounting
South Africa	Attest it Inc. and Hoogwerf Consulting Pty Ltd	Director
South Africa	South African Reserve Bank (SARB)	Senior Accountant

Country	Interest group	Position of interviewee(s)
Netherlands	FEA	Strategic Advisor
Netherlands	Eumedion	Executive Director & Policy Advisor
Netherlands	VEB	Director & Policy Advisor
Netherlands	VEUO	Board Member
Netherlands	VNO-NCW	Policy Advisor

Appendix 4: Detailed results from the literature search

Reference	Journal and impact factor*	Country	Time period	Quantitative/ Qualitative analysis	Effect on audit quality (type 1, 2, 3, or 4)	Effect on audit fees	Effect on market concentration, competition, market share Big 4/non-Big 4	Other effects of joint audits
Alfraih (2016)	Journal of Financial Regulation and Compliance JCR: -	KWT	2013	Quantitative	*Type 1 (audit delay)* This paper examines the effect of joint auditor composition (Big 4 vs. non-Big 4) in a mandatory joint audit setting in Kuwait, on audit quality. It does not look at the effect of joint audit on audit quality compared to single audit. The results indicate a positive relationship between audit quality and one or two Big 4 auditors in the joint audit. In other words,	-	-	-

					audits conducted by pairs containing at least one Big 4 have a higher quality than audits conducted by two non-Big 4 firms.			
Andre *et al.* (2016)	European Accounting Review JCR: 1.855	FR, IT, UK	2007-2011	Quantitative	*Type 1 (abnormal accruals)* Authors do not find differences in the magnitude of abnormal accruals (proxy for audit quality) across companies in France, Italy, and the United Kingdom. The mandatory joint audit does not appear to be associated with higher audit quality.	Audit fees in France are significantly higher (~40%) than in the UK and Italy. The authors conclude that joint audits are associated with significantly higher audit fees.	-	-
Audousset-Coulier (2015)	European Accounting Review JCR: 1.855	FR	2002-2003	Quantitative	-	This paper examines to what extent audit fees are influenced by the number of Big 4 joint auditors (zero, one, or two). The	-	-

						results indicate that in a joint audit setting, both the choice for one Big 4 auditor and for two Big 4 auditors lead to higher fees (38.5% and 45.9%, respectively). No statistically significant difference in audit fees between having one and two Big 4 auditors was found.		
Ballas & Fafaliou (2008)	International Advances in Economic Research JCR: -	Various	1998-2004	Market analysis	-	-	This paper describes the average concentration level of the audit services markets in 15-EU member-countries over the period 1998-2004. The markets with the highest concentration are Luxemburg and Spain where the top four firms command an average of 90.2% and 89.7% market share,	-

							respectively. The markets with the lowest concentration are France (49.2% on average) and Germany (47.7% on average). It is unclear whether the concentration levels are directly related to the existence of joint audits.	
Bédard & Schatt (2020)	*Practice Note, Presented to: The Foundation for Auditing Research*	Various	Various	Literature Review	*Type 1 (financial reporting quality)* The quality of financial statements, typically proxied by accruals, is not higher in France than in other European countries. Therefore, joint audits are not associated with higher audit quality.	In theory, joint audit fees could be both higher (if additional costs are incurred due to the extra communication and alignment between auditors) and lower (if joint audits favour competition) than audit fees from a single audit. Empirical studies indicate that French companies pay	The French audit market seems to be less concentrated than that of other European countries when considering number of clients. However, the percentage of audit fees captured by Big 4 firms in France is similar to that captured by the Big 4 in other European countries, suggesting	Balanced work between a Big 4 and a non-Big 4 audit firm (a '50-50' split) does not lead to a better quality-price ratio. Additionally, large companies which have joint audits tend to hire two Big 4 firms. Therefore, imposing a pair composed of a Big 4 with a non-Big 4 firm may not have

						higher audit fees than companies in other countries, indicating that the additional coordination costs are passed on to clients. Therefore, joint audits are costlier than single audits.	a similar market concentration.	positive economic consequences.
Broye (2007)	*Revue française de comptabilité JCR: -*	FR	2005	Quantitative	-	-	This paper supports the idea that, when looking at collected audit fee rather than number of clients to measure market share, the audit services market in France appears a lot more concentrated. Although the French Big 4 firms performed 45.1% of audits (suggesting low market concentration), they collected 86.6% of	-

							the fees (suggesting high concentration). If one adds the French firm Mazars to the sample, the five largest firms collected 94.3% of the fees for 53.5% of the audit engagements. The Hirschman-Herfindahl index (HH5) of 0.21 is very close to the perfect balance for a five-actor oligopoly.	
Deng *et al.* (2014)	Journal of Accounting Research JCR: 3.773	Theoretical analysis	-	Theoretical analysis	This theoretical model compares audit evidence precision in three regimes: single audits by one big firm (Regime *B*); joint audits by two big firms (Regime *BB*); joint audits by one big firm and one small firm (Regime	The paper compares audit fees in three regimes: single audits by one big firm (Regime *B*); joint audits by two big firms (Regime *BB*); joint audits by one big firm and one small firm (Regime *BS*).	-	-

					BS). Audit evidence precision refers to the effort exerted by the audit firm to obtain precise audit evidence about the value of the audited company, to minimise the risk of misstatement. Audit evidence precision is positively associated with audit quality. Results indicate that Regime BB has the same audit evidence precision as Regime B. Total precision of audit evidence in Regime BS is lower than Regime B. In other words, the model shows that joint audits with a mixed pair (one big and one small firm) may reduce audit quality. This could be	The model predicts that Regime BB has lower audit fees than Regime B. Audit fees are lower in Regime BS than in Regime B, if the technological difference between the two audit firms is small and the big firm bears a large proportion of misstatement cost.		

					because of free-riding concerns.			
El Assy (2015)	International Journal of Accounting and Financial Reporting JCR: -	EGY	2009-2013	Quantitative	*Type 1 (financial reporting quality – earnings conservatism)* Joint audits go hand in hand with higher audit quality in Egypt for the years 2009-2013. The author stresses that there is no difference between voluntary and mandatory joint audits and no difference in auditor choice (Big 4 vs. non-Big 4).	-	-	-
Francis *et al.* (2009)	Auditing: A Journal of Practice & Theory JCR: 2.108	FR	2003	Quantitative	*Type 1 (abnormal accruals)* This paper finds a relationship between type of audit pair and audit quality in a joint audit setting. The results indicate that	-	-	-

					an audit pair with at least one Big 4 firm has a higher audit quality than an audit pair without a Big 4 firm. An audit pair with two Big 4 firms has a higher audit quality than an audit pair with one Big 4 firm.			
Gonthier-Besacier & Schatt (2007)	Managerial Auditing Journal JCR: 1.870	FR	2002	Quantitative	-	Looking at the joint audit context, this paper finds that audit fees are significantly lower when the audit pair consists of two Big 4 firms. This may be due to more balanced sharing of qualifications and skills, as well as of potential risks, suggesting economies of scale and scope for large audit firms.	-	-

Guo *et al.* (2017)	Review of Accounting Studies JCR: 2.6	FR, UK	2006-2012	Quantitative	-	-	The authors model the introduction of joint audits in a single audit regime in three scenarios. **1. Introduction of mandatory joint audit.** In this scenario, the market share of the Big 4 decreases. The market share gains are concentrated among the largest non-Big 4. **2. Introduction of mandatory joint audit with a non-Big 4 clause.** The Big 4 market share decreases slightly more than in scenario 1 and the market share gains are even more concentrated among the largest non-Big 4.	A joint audit regime is associated with a substantial loss in welfare in all three scenarios (possibly because clients are not allowed to give all the audit work to their most preferred audit firm).

							3. Mandatory joint audit with workload regulation (50-50 work split). Non-Big 4 gain less market share than in scenario 1, because companies do not trust non-Big 4 to be able to take on such a big part of the work, so they select two Big 4 firms.	
Haak *et al.* (2018)	Accounting in Europe JCR: -	DK	2009-2012	Quantitative	*Type 1 (abnormal accruals)* In a joint audit setting, a more balanced audit work allocation between the engaged audit firms reduces the audit quality as compared to an unbalanced work allocation. This result could be attributable to difficulties arising in the	Joint audits where one main auditor has a large stake in the audit work (unbalanced joint audits) lead to smaller audit fees than joint audits where the audit work is shared more evenly (balanced joint audit). The Big 4 premium is a bit higher for joint audits appointing one	-	-

					communication and coordination process that should be larger in a balanced than in an unbalanced joint audit. Also, a free rider effect could lead to a reduced audit quality in the case of a balanced audit work allocation.	Big 4 rather than two Big 4 audit firms.		
Holm & Thinggaard (2014)	Managerial Auditing Journal JCR: 1.870	DK	2005-2006	Quantitative	-	The authors exploit a natural experiment in which voluntary joint audits replace mandatory joint audits for Danish listed companies and analyse audit fee implications of using one or two audit firms. They find support for fee reductions for companies switching to single audits, but only in the first year of audit. The single	-	-

						auditor fee discount is conditional on how the audit work was shared between the involved auditors before the abolition. Specifically, single auditor discounts only exist in situations where the former joint audit was shared unequally between a dominant and minority share auditor. The authors argue that in this situation bargaining power is more with the auditors than in an equally shared joint audit, and that the auditors' incentives to offer an initial fee discount are larger.		
Holm & Thinggaard (2016)	International Journal of Auditing	DK	2005-2008	Quantitative	-	This paper estimates the effect of employing two audit	-	-

	JCR: 1.034					firms, rather than one, on the audit fee, using Danish data collected in the first years after the abolition of its mandatory joint audit system for listed companies in 2005. The authors find two main results: 1. No general difference in audit fees when two audit firms - regardless of combination and technology efficiency - conduct the statutory audit compared to a single big audit firm. 2. The audit fees are higher in the case of very unbalanced big-small joint audits (where the small auditor takes less than 25% of the fees)		

						than in the case of a single big audit. Very unbalanced joint audits may lead to free riding by small firms, costing big firms additional resources.		
Holm & Thinggaard (2018)	Accounting and Business Research JCR: 1.833	DK	2005-2008	Qualitative & Quantitative	*Type 1 (abnormal accruals) & Type 4 (perceived quality)* This study analyses audit quality differences between audits by a single big audit firm and joint audits with either one or two big audit firms. It does this in two ways. First, by examining the results of a survey of Danish CFOs' views on and their experiences with the choice of single or joint audits and their	-	-	-

					perceptions of audit quality. Second, based on abnormal accruals data from the mandatory joint audit abolition year (2005/2006) and the following two years. The survey results indicate that most CFOs perceive the audit quality by a single Big 4 audit firm to be the same as it is in joint audits with either one or two Big 4 audit firms. The regression analysis supports the perceived quality of the CFOs. It provides no evidence of audit quality differences between audits made by a single Big 4 firm and joint audits conducted by			

					combinations of one or two big audit firms.			
Hoos *et al.* (2019)	Journal of Business Ethics JCR: 4.141	NL	2016	Experimental study	*Type 3 (professional skepticism)* In their experimental study with Dutch auditors, the researchers test the theoretical belief that joint audits lead to improved auditor skepticism and, in turn, type 3 of audit quality. To do this, they compare auditors' judgements in three review regimes: the joint audit, the internal review, and the no review regime. The results indicate that the auditors in all three settings follow a similar judgement process. However, the auditors in the	-	-	-

					internal review regime make significantly more skeptical judgements about the auditor judgement than auditors in the joint audit and the no review regime. Auditors in the joint audit regime are the least skeptical in their judgement, probably because accountability in a joint audit setting is distributed between two audit firms and the negative consequences of the outcome are shared.			
Kermiche & Piot (2018)	Journal of Accounting, Auditing & Finance JCR: -	FR	1997-2009	Quantitative	-	-	The findings support the view that the French joint audit system is effective in maintaining market openness and mitigating the Big 4	-

							domination in the long run. According to the authors, the joint audit rule allowed the survival of the large national firm Mazars. Additionally, the authors suggest that it is not necessary to mandate a mixed auditor pair (Big 4 and non-Big 4). The mixed combination is most frequently selected by the market.	
Lesage *et al.* (2012a)	*CAAA Annual Conference 2012*	DK, FR, DE	2005-2009	Quantitative	*Type 1 (abnormal accruals)* The results suggest that there is no significant relationship between joint audits and audit quality.	There is no significant relationship between joint audit and total fees. Total fees consist of audit fees and fees from non-audit services, such as tax advisory and other assurance services.	-	-

						The results suggest a positive and significant relationship between joint audit and audit fees. However, the authors stress that they cannot rule out that the higher fees might also be caused by other country-specific differences, e.g., the fixed six-year term of French auditors.		
Lesage *et al.* (2012b)	-	DK	2002-2010	Quantitative	*Type 1 (abnormal accruals)* This paper studies the effect of joint audit on audit quality by looking at the Danish setting before and after the abolition of the mandatory joint audit system. The results suggest no significant relationship between	The results suggest no significant relationship between joint audit and audit costs (neither total fees nor audit fees).	-	-

					joint audit and audit quality.			
Lesage *et al.* (2017)	European Accounting Review JCR: 1.855	DK	2002-2010	Quantitative	*Type 1 (abnormal accruals)* This paper examines the consequences of abandoning a mandatory joint audit regime. The results show an insignificant association between the joint audit and audit quality, measured by abnormal accruals. This result is robust to alternative measurements of abnormal accruals (earnings benchmark tests).	There is a positive and significant association between the joint audit and audit fees: companies with joint auditors pay around 10%–25% more than companies with a single auditor. In the Danish setting, the higher fee effect is present in the first two years after the regulatory change was implemented but it fades after three years. Additional coordination costs (that could be transferred at least partially to the client) and the potential fee premium (to cover	There is a significant increase in the Big 4 market share (measured as a % of the number of mandates held by Big 4 audit firms divided by total mandates for a specific company) after the abandonment of the joint audit. This is due to a clear preference for companies to (1) switch to a single audit (95% of the sample's companies switched by the end of 2010) and (2) to choose a Big 4 as a single auditor (85% of the sample's companies).	-

						the risk of joint liability) are potential explanations for the higher fees observed in a joint audit setting.		
Lobo *et al.* (2017)	Contemporary Accounting Research JCR: 2.026	FR	2006-2009	Quantitative	*Type 1 (goodwill impairment)* This paper explores the effect of auditor pair composition in a joint audit setting on audit quality. Audit quality is measured by examining (1) the appropriateness of impairment loss recognition (measured by the probability of booking a goodwill impairment loss when economic conditions suggest the need to do so) and (2) the transparency of	-	-	-

					impairment disclosures. The results indicate that the audit quality, both in terms of (1) and (2), is higher in a mixed audit pair than in an audit pair consisting of only Big 4 firms.			
Marmousez (2009)	*CAAA Annual Conference 2009*	FR	2003	Quantitative	*Type 1 (financial reporting quality – earnings conservatism)* This paper explores the effect of auditor pair composition in a joint audit setting on audit quality. In this study, audit quality is measured by conservatism of the accountants. Conservatism is interpreted as “capturing accountants’ tendency to require a	-	-	-

					higher degree of verification for recognizing good news than bad news in financial statements". The result provides evidence that the presence of two Big 4 is associated with lower reporting quality. This result can be explained by the fact that the interaction between two Big 4 audit firms is likely to be less productive in terms of corporate governance than the interaction between a Big 4 and a non-Big 4. When two Big 4 audit firms, applying comparable methodologies and incurring comparable reputation risk, work			

					together, they would be more likely to rely on each other and, consequently, would have fewer incentives to provide maximum effort.			
Piot (2007)	Managerial Auditing Journal JCR: -	FR	1997-2003	Quantitative	-	-	The four-firm concentration ratio (CR4) is the market share of the top four firms in the audit services market. The CR4 in France rose from 41% to 59% between 1997 and 2003, a period of transformation of the Big 6 to the Big 4. The market shrunk from eight major players in 1997 (the Big 6 and two national firms) to five large auditors six years later (the Big 4 and the French firm Mazars).	-

							The relationship between joint audit and market concentration is unclear.	
Ratzinger-Sakel *et al.* (2013)	Accounting in Europe JCR: -	Various	Various	Literature Review	*Type 1 (various)* This literature review finds limited empirical evidence to suggest that joint audits lead to increased audit quality. The impact of joint audits on audit quality has not been clearly demonstrated. The only paper in this literature review indicating a positive effect of joint audit on audit quality is that of Zerni e.a. (2012) showing that voluntary joint audits improve perceived and technical joint audit quality.	This literature review finds some empirical support to suggest that joint audits lead to additional costs.	Joint audits can potentially enhance the audit market competition by allowing smaller audit firms to maintain larger market shares.	-

Thinggaard & Kiertzner (2008)	International Journal of Auditing JCR: -	DK	2002	Quantitative	-	This paper studies the determinants of audit fees in a mandatory joint audit setting (which does not specify how the work is to be shared between the two audit firms). The results indicate that joint audits where both auditors have significant stakes in the audit reduce audit fees compared to audits where one auditor is dominant, albeit only for larger companies. Furthermore, in half of the companies, one of the audit firms does 80% or more of the audit.	-	-
Velte (2017)	Accounting and Financial Control JCR: -	Various	Various	Literature Review	*Type 1 (earnings quality)* Some empirical studies have shown a	Most studies on the influence of joint audits on audit fees tend to indicate a	There are only two studies which measure the impact of joint audits on the	-

					positive impact of joint audits on the audit quality in different countries (Egypt, Sweden, Austria). However, there are also studies that find that joint audits have no effect on the audit quality (France, Italy, United Kingdom, Denmark, Germany).	positive relationship. However, empirical studies can be found that have measured no influence of joint audits on audit fees.	audit market concentration. However, in both studies it remains unclear how the concentration changes are attributed to the existence of joint audits.	
Velte & Azibi (2015)	British Journal of Applied Science & Technology JCR: -	DE, FR	2008-2012	Quantitative	*Type 1 (abnormal working capital, abnormal accruals)* This study tests the impact of joint audits on audit quality for French and German listed companies. The results indicate that joint audits do not have a significant positive effect on audit quality in Germany and France.	-	The results indicate that joint audits do not have a significant positive effect on market concentration in Germany and France.	-

Willekens *et al.* (2019)	*Policy Department for Economic, Scientific and Quality of Life Policies*	Various	Various	Literature summary (section 3.4)	Research on joint audits mostly concludes that they do not increase the audit quality.	Prior research on joint audits documents an increase in audit fees. In the samples used in this study, non-financial (financial) PIEs appointing joint auditors paid on average 53.4% (162%) higher audit fees than those appointing a single auditor, ceteris paribus.	This study finds that Big 4 firms in France have a lower market share in terms of number of clients in comparison to the other European countries (especially the Netherlands or the UK), for the period 2013-2017. However, in terms of fees, the market share of Big 4 firms in France is quite similar to that in other countries.	-
Zerni *et al.* (2012)	European Accounting Review JCR: 1.855	SE	2001-2007	Quantitative	*Type 1 (financial reporting quality – earnings conservatism & abnormal accruals) & Type 4 (perceived quality)* Zerni *et al.* (2012) document in the voluntary Swedish joint audit setting that	There is a positive link between voluntary joint audits and audit fees. The largest, second largest and smallest fees are paid by clients employing joint audits, single Big 4 auditors, and single non-Big 4 auditors, respectively.	-	-

					companies opting voluntarily for joint audits have a higher degree of earnings conservatism and lower abnormal accruals (both are proxies for audit quality). They also have better credit ratings and lower risk forecasts for insolvency (both being proxies for perceived audit quality) than companies with only one auditor. In other words, they find a positive impact of joint audit on perceived and actual audit quality.			

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