"Audit Exemptions and The Quality of Firms' Internal Reporting Systems"[1]

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Jeff Downing
BI Norwegian Business School
jeff.downing@bi.no

John Christian Langli
BI Norwegian Business School
john.c.langli@bi.no

ABSTRACT

We examine the impact of audit exemptions on the quality of firms' internal reporting systems. Prior to 2011, all Norwegian firms were required to be audited. In 2011, however, a law change took effect that allowed small Norwegian firms to choose not to be audited. After this change in legislation, the Norwegian Directorate of Taxes conducted inspections of a representative sample of 2,117 Norwegian firms, with a focus on these firms' internal reporting systems. We use these inspections to construct a measure of these firms' reporting-system quality (RSQ). We have three findings. First, firms that chose to opt out of auditing have lower RSQ than do firms that chose to continue to be audited. Second, the RSQ of firms that chose not to be audited declined after these firms no longer were audited. Third, some of the opt-out firms mitigated this decline in RSQ by engaging external accounting consultants. The results should be of particular interest to politicians in countries that are considering increasing the thresholds for mandatory auditing, as our results show that (i) firms that choose not to be audited can experience a decline in RSQ after opting out, and (ii) RSQ can be maintained at the same level as before the opt-out decision by opt-out firms if they engage external accounting consultants that assist in preparing the annual accounts.

1.   Introduction

The audit requirements imposed on small and medium-sized enterprises (SMEs) is an important regulatory issue (e.g., EC 2010). In many countries, private companies below a given size threshold are not required to have a statutory audit. The consequences of giving small firms an audit exemption is an important issue given that SMEs account for a large share of economic activity in many countries (e.g., Klein 2014).

In this study, we focus on the impact of audit exemptions on the quality of firms' internal reporting systems. As part of an external audit, the auditor must assess the client's internal control system in order to design and implement an audit that is adapted to the risk of material misstatements (ISA 315 Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and Its Environment). Hence, as a part of the audit process, an auditor learns about the client's internal control system and can provide its client with useful advice on how such systems should be designed, e.g. how to organize the bookkeeping process, make sure that the documentation is sufficient, and make sure that the classification of tax-deductible and non-tax-deductible expenses is correct; for ease of exposition, we refer to such advice as "consulting advice." (We acknowledge that *other* types of consulting advice exist, some of which are prohibited in certain countries.) One potential consequence of audit exemptions is that firms that choose not to be audited could lose access to such consulting advice. As a consequence, these firms, which are small and therefore may lack internal competence to maintain internal control systems of sufficiently high quality, could experience a decline in reporting-system quality. We examine whether firms' reporting-system quality is affected by audit exemptions and the loss of access to the auditor's consulting advice that could result.

Our analyses have two central features. The first is the use of a unique dataset based on inspections done by the Norwegian Directorate of Taxes (NDT). Prior to 2011, all Norwegian

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limited-liability firms were required to have an annual external audit. Since 2011, however, small firms have been able to choose not to have an external audit – to "opt out" of being audited. To examine the impact of this change, the NDT conducted inspections of 2,117 firms that were eligible to opt out; some of these firms chose to opt out, while others did not. These inspections were conducted in 2012 and 2013 and covered the years immediately before and after the opt-out law took effect – 2009, 2010, 2011, and, in some cases, 2012. The inspected firms were chosen such that the results are generalizable to the population of Norwegian firms. Only three criteria were employed: The firms must be eligible to vote down the auditor, the number of inspected firms in each of the five administrative tax units must reflect the number of firms belonging to the region, and the fraction of inspected firms with a qualified audit opinion must be the same as for the population, which is 19 percent (Fjærli and Raknerud 2012). We explain the selection procedure in detail below and in appendix 2. The inspections focused to a large extent on the quality of the firms' internal reporting systems, e.g. whether the documentation is sufficient and the audit trail intact. We use the results from these inspections to construct a measure of firms' reporting-system quality (RSQ). The measure is constructed for firms that continued to be audited after the opt-out law took effect in 2011 ("audited firms") and for those firms that chose to stop being audited ("opt-out firms").

The second feature is the quasi-difference-in-difference research design we use to examine whether opt-out firms' RSQ declined after the opt-out law took effect. Our analyses have a cross-sectional component, where we compare the RSQ of audited firms and opt-out firms. One concern with a purely cross-sectional analysis, however, is self-selection. Since firms themselves choose whether to opt out, any differences in RSQ between audited firms and opt-out firms could arise because of (potentially unobservable) differences between audited firms and opt-out firms, not because opt-out firms lose the auditor's consulting advice after opting out.

Hence, we include in our analyses a time-series component, as well, where we compare the RSQ of opt-out firms before and after the opt-out law took effect. These analyses allow for a more direct assessment of how losing the auditor's consulting advice after opting out affects RSQ. To the extent that the loss of such advice has a negative impact on RSQ, the RSQ of opt-out firms should decline after the opt-out law takes effect, i.e. when these firms no longer are audited.

We have three primary findings. First, the RSQ of opt-out firms is lower than is the RSQ of audited firms. The magnitude of this effect, however, is modest. Our measure of RSQ ranges from 0 (low) to 1 (high), with an average of 0.872. The results of our multivariate analyses indicate that the RSQ of opt-out firms is 0.5 percentage points lower (i.e., 0.005 lower) for opt-out firms than for audited firms. This result is consistent with the findings in Clatworthy and Peel (2013), who focus on external accounting quality and find that for private firms in the United Kingdom, where small private firms may choose to opt out of being audited, accounting quality is lower for opt-out firms than for audited firms.

Second, among opt-out firms, RSQ deteriorates after these firms opt out of auditing. In addition, although the magnitude of this deterioration in RSQ is not overly large, it seems not to be trivial, either. After opting out, our measure of RSQ declines by 1.9 percentage points relative to when these firms were audited (i.e., relative to when external audits were required). This finding suggests that losing the auditor's consulting advice had a negative impact on firms' RSQ.

Third, among opt-out firms, access to external consulting advice mitigates the decline in RSQ that results from opting out. We use the data from the NDT's inspections to examine whether a firm prepares its annual financial statements itself or uses an external accountant or auditor (an "external consultant") to do so. For opt-out firms, the external consultant could be the auditor they had while being audited, a different auditor who provides accounting services, or a

licensed accountant.[2] We posit that opt-out firms can use such consultants as an alternative source of consulting advice for their reporting systems. In this way, opt-out firms can mitigate the decline in RSQ that otherwise would result from opting out. Consistent with this reasoning, we find that among opt-out firms, the decline in RSQ due to opting out is lower for those opt-out firms that use an external consultant. Moreover, using an external consultant after opting out is correlated with a rise in RSQ of 2.9 percentage points. Since opting out alone is correlated with a decline in RSQ of 1.9 percentage points, this result suggests that at a minimum, the use of an external consultant fully compensates for the decline in RSQ that results from opting out.

In addition, we run our analyses separately on two different types of questions the NDT asked in its inspections. One type comes from the inspection theme "Systems for bookkeeping and reporting." These questions relate to whether firms' internal reporting systems comply with specific provisions in the Norwegian Bookkeeping Act and with certain requirements for tax-related matters – for example, whether the firm's reporting systems are sufficient for determining the tax basis of firm assets used by shareholders. In general, these questions require in-depth knowledge of certain accounting regulations. The other type relates more to the documentation of various types of transactions – for example, whether firms have sufficient documentation for travel expenses. In general, these questions ("other questions") require less in-depth accounting knowledge than do the first type of question ("accounting questions"). As a result, we examine whether the impact of opting out on RSQ differs between these two types of questions.

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[2]Norwegian legislation requires all those that provide accounting services to other firms to have obtained licenses from the Financial Supervisory Authority of Norway (Finanstilsynet). A licensed auditor that also has obtained a license as an external accountant may provide accounting services to a firm as long as the firm has appointed an another auditor as the firm's legally elected auditor or has opted out of auditing. The legally elected auditor is not allowed to do the bookkeeping for the auditee, but may assist in setting up the annual financial statements and to file the auditee's tax forms. Norwegian auditing standards are translations of the international auditing standards, with some adjustments due to national legislation. The independence requirements do not differ between small and large auditees, but the Financial Supervisory Authority of Norway is less strict on enforcing the independence requirements for small auditees.

These analyses suggest that our baseline results are driven by the accounting questions – the questions that require detailed knowledge of the accounting regulations. The decline in RSQ that results from opting out is stronger when we analyze only the accounting questions than when we analyze all of the questions taken together. Moreover, when we exclude the accounting questions, we find that opting out has no impact on RSQ. These results suggest that auditors provide useful consulting advice specifically for those aspects of firms' reporting systems that require greater in-depth knowledge of relevant accounting regulations, the area where auditors' expertise relative to firms' expertise is plausibly largest.

The main contribution of this study is to identify some consequences of audit exemptions for smaller firms. In relation to prior studies, our analyses are most similar to Clatworthy and Peel (2013), who find that among small private firms in the United Kingdom, where such firms may choose not to be audited, restatements occur more often for audited firms than for opt-out firms. Our analyses complement Clatworthy and Peel (2013) in two ways. First, we focus on a different effect of audit exemptions – whereas Clatworthy and Peel (2013) focus on how audit exemptions affect accounting quality, as measured by restatements, we focus on how audit exemptions affect firms' internal reporting systems. Second, we use a natural experiment – a law change that let small firms choose not to be audited – to compare opt-out firms' RSQ when these firms were audited (i.e., before the opt-out law took effect) to when these firms no longer were audited. Clatworthy and Peel (2013), by contrast, conduct a cross-sectional comparison of accounting quality between audited firms and opt-out firms. The second difference is important because it allows us to analyze more directly the consequences of a law change that introduces an audit exemption for small firms. Other studies have compared the effects of voluntarily audit along various dimensions (e.g., access to credit and interest rate on loans; see Langli and Svanström (2013) for a review). To the best of our knowledge, however, these studies generally do not focus

on the effects of switching from a voluntary-audit regime to a mandatory-audit regime.[3] Rather, these studies focus primarily on how audited firms and non-audited firms are different in various ways. As noted above, any such differences could be caused by differences between firms, not by the audit exemption itself. Our analyses of the differences in RSQ among opt-out firms before and after the opt-out law took effect increases the likelihood that the effects we find are caused by the audit exemption (i.e., to the switch from a voluntary-audit regime to a mandatory-audit regime), not by any differences between audited firms and non-audited firms.

In addition, our analyses contribute to the body of literature that focuses on the correlation between audit quality and accounting quality. One common finding in prior studies (e.g., Becker et al. 1998; Francis and Krishnan 1999; Francis, Maydew, and Sparks 1999; Van Tendeloo and Vanstraelen 2008; see also DeFond, Erkens, and Zhang (2014) for a review) is that higher audit quality, as implied by the use of a Big N audit firm, is correlated with higher accounting quality, although Lawrence, Minutti-Meza, and Zhang (2011) contest this finding. Along similar lines, Clatworthy and Peel (2013) find that firms that choose not to be audited have lower accounting quality than do firms that choose to be audited. While we do not focus explicitly on the impact of opting out on accounting quality, our results do identify a mechanism by which auditors could help improve accounting quality for small firms – specifically, by helping such firms maintain higher-quality internal reporting systems.

All member countries within the EU/EEA-area (European Union/European Economic Agreement-area) require private firms to disclose audited financial statements if they exceed certain size criteria related to revenue, assets, and employees. The maxima for allowing private

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[3]One exception is Lennox and Pittman (2011), who focus on the impact of a law change in the United Kingdom that let small private companies choose not to be audited. Lennox and Pittman (2011) find that after this law change, firms that chose to continue to be audited received a credit-rating upgrade, due to signaling effects. The analyses in Lennox and Pittman (2011), however, relate primarily to the signaling effects of choosing to be audited, not to how the audit process can affect the quality of firms' accounting information, reporting systems, etc.

firms to avoid auditing is defined by the EU, while the member states are free to set lower

thresholds. The thresholds vary between countries, and many countries are considering to

increase the thresholds. Our results should be of particular interest to politicians in countries that

are considering increasing the thresholds, for two reasons. First, audit exemptions can have a

negative impact on the RSQ of those firms that choose no longer to be audited. This decline in

RSQ could have several negative consequences – for example, lower compliance with relevant

accounting or tax regulations. Secondly, RSQ can be maintained at a high level by the opt-out

firms if they engage external accounting consultants that assist in preparing the annual accounts

(which is less costly than a regular audit of the financial statements).

The rest of the paper is as follows: Details about the accounting and auditing regulations

in Norway are in Section 2. Hypotheses and relevant literature are in Section 3. A discussion of

the research design and descriptive statistics are in Section 4. Results are presented in Section 5.

Concluding remarks are in Section 6. Supplemental information is in the appendix.

2.   Accounting and auditing regulations in Norway

The accounting and auditing regulations in Norway are in many respects similar to the

regulation found in the member countries of the EU due to an agreement between Norway and

EU that requires Norway to implement all directives issued by the EU.[4] Compared with the EU

countries, however, Norway has lagged behind when it comes to implementing options in the EU

directives that may simplify the administrative burdens for firms. Thus, contrary to the EU

member states, all limited-liability firms, independent of size, were required to make public

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[4]The agreement between Norway and EU is called The European Economic Area (EEA) Agreement, which enables
Norway (together with Iceland and Liechtenstein) to participate in the EU's Internal Market. As part of the
agreement, Norway must implement all EU directives that relate to the free movement of goods, services, persons,
and capital.

complete sets of audited financial statements until May 1st, 2011. Starting in May 2011, small limited-liability companies have been able to choose not to have their financial statements audited, but they are still required to disclose complete sets of financial statements. Firms must file their financial statements with the Brønnøysund Register Centre (BRC), a government agency that is responsible for the management of public registers and governmental systems for digital exchange of information, which subsequently makes the financial statements available for the public. Firms that do not file financial statements with the BRC will be dissolved by the court.

The option to opt out of auditing applies to firms with less than five million Norwegian crowns (NOK) in annual revenue (roughly $800,000), less than NOK 20 million in total assets, and fewer than 10 employees. In addition, the firm cannot be a parent company or have a license from the Financial Supervisory Authority of Norway. In 2011, the first year opting out of auditing was possible, more than 43,937 firms voted down their auditors, which corresponds to about 34 percent of all firms that qualified for the opt-out rule.[5]

The auditing standards in Norway are translations from the International Standards of Auditing (ISA). In some areas, there are modifications and additions due to requirements in the Norwegian legislation. One such addition is that auditors must sign a couple of the tax forms that firms file with the NDT.[6] By signing these forms, the auditor confirms that the financial statement is audited and that the auditor intends to issue an audit opinion with a positive

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[5] The proportion of firms that opt out has increased over time. By the end of 2011, the percentage of limited-liability firms without an auditor was (43,937 / 250,620) = 17.5. By the end of 2014, this percentage increased to (112,325 / 264,457) = 42.5.

[6] The forms are RF 1167 Næringsoppgave 2 (Trading statement 2) and RF-1022 Kontrolloppstilling over registrerte og innberettede beløp (Control with registered and reported amounts related to wages). RF-1167 is a detailed version of the firm's financial statements. The form has a section that computes taxable income by starting with net income after taxes, and then adding back taxes and making corrections caused by differences in the accounting and tax law. Norway is a low-tax-alignment country (Nobes and Schwencke 2006) and deferred taxes, introduced in 1992, handle any differences between tax and accounting. RF-1022 is a form that verifies that wage expenses in the financial statements correspond with what the firm has reported as wages to the tax authority.

conclusion without reservations regarding circumstances that impact taxes or duties (Auditing standard RS 3801 Revisors kontroll av og rapportering om grunnlag for skatter og avgifter, paragraph 4. Our translation: The auditor's verification of the basis for levying taxes and duties). The purpose of having the auditor sign the tax forms is to give the tax authorities "adequate, but not definitive" (our translation) reassurance that the firm had complied with the tax and VAT legislation (RS 3801 paragraph 5). Thus, prior to implementing the opt-out rule, the NDT may have used the lack of the auditor's signature on these forms as a signal that firms may have violated tax legislation. After the opt-out rule was implemented, the NDT could no longer use the missing signature of the auditor as a signal of the firm's lack of ability or willingness to comply with this legislation.

To assess the potential negative effects of introducing voluntarily auditing for the smallest firms, the Ministry of Finance instructed the NDT to evaluate the impact of the opt-out law on the quality of firms' internal reporting systems, i.e. to find out if the quality of firms' internal reporting systems was negatively affected by the opt-out rule. To carry out these inspections, the NDT used 20 tax inspectors to conduct inspections of 2,117 different firms. Each of these 2,117 firms was eligible to opt out – some chose to opt out, while others did not. The inspections were conducted in the course of 2012 and 2013, cover the years immediately before and after the opt-out law took effect (2009, 2010, 2011, and, in some cases, 2012), and were conducted at one point in time for each firm. An inspector from the NDT, for example, visited a given firm in 2012 and evaluated the firm's reporting systems for each year in 2009, 2010, and 2011. For inspections conducted in 2013, the inspector would have evaluated the firm's reporting systems for 2012, as well. We explain the inspections in further detail below.

3.   Related literature and hypotheses

In addition to our focus on audit exemptions, our analyses relate to two different strands of literature. One is accounting quality in private firms. Although private firms usually are smaller and are closely held, the accounting information of private firms can be useful in several respects – for example, to mitigate agency problems (Hope, Langli, and Thomas 2012), or to improve the ability of firms to access external financing (Carey, Simnett, and Tanewski 2000). Our analyses do not directly examine accounting quality, but the quality of a firm's internal reporting systems and internal controls more generally can affect its accounting quality (Doyle, Ge, and McVay 2007a; Ashbaugh-Skaife et al. 2008; Prawitt, Smith, and Wood 2008). Hence, our analyses of how not being audited affects RSQ helps shed light on one of the mechanisms by which the accounting quality of small, private firms is determined – through the quality of these firms' internal reporting systems.

The second is the impact of consulting services, or non-audit services more generally. A wide body of literature examines how the provision of non-audit services potentially could impair auditor independence (e.g., DeFond and Zhang 2014; Hope and Langli 2010; Sharma 2014). The extensive use of non-audit services by firms implies that such services are valuable. Moreover, Lai and Krishnan (2009) find that the provision of a specific non-audit service (the design and development of a financial-information system) has a positive impact on firm value. To the best of our knowledge, however, apart from Lai and Krishnan (2009) and Krishnan and Yu (2012), discussed below, prior studies do not examine in detail a specific mechanism by which non-audit services could benefit firms. In this study, we focus on such a mechanism – auditors' provision of consulting advice concerning firms' internal reporting systems. The mechanism could be especially important for smaller firms, given that these firms might lack the internal expertise necessary to develop and maintain such systems.

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Our study has similarities to Krishnan and Yu (2012), who find that among a sample of small, publicly traded firms in the United States, those firms that receive an auditor attestation over the efficacy of their internal controls have better revenue quality than do those firms that do not receive such an attestation. While the focus in Krishnan and Yu (2012) on internal-control systems is similar to the focus in this paper on firms' internal reporting systems, this study differs in two ways. First, and most importantly, all of the firms in the sample in Krishnan and Yu (2012) were audited, although only some firms received an attestation over internal controls. In our sample, by contrast, some firms are audited, while others are not, and for firms that are not audited, we have within-firm time-series variation in "audit status," where a given firm is audited in certain years but not in others (i.e., after the opt-out law is passed). Second, Krishnan and Yu (2012) use a measure of financial-reporting quality (revenue quality) as a proxy for the quality of firms' internal-control systems, whereas we measure RSQ with a more direct measure that is based on the Norwegian tax authorities' assessment of the quality of firms' internal reporting systems.

To analyze how not being audited affects RSQ, we examine three hypotheses. The first relates to cross-sectional differences in RSQ of firms that continued to be audited after the opt-out law took effect ("audited firms") and of firms that chose to stop being audited ("opt-out firms"). The quality of firms' internal reporting systems potentially has an important impact on accounting quality, and in the cross-section, prior studies show that different firms have different incentives to provide high-quality accounting information to third parties (e.g., creditors).

In the context of auditor choice, one relevant factor for differences in accounting quality is differences in firm "type."[7] Melamud and Thorman (1990) show that relative to high-risk firms,

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[7]Other factors that could lead to cross-sectional differences in accounting quality include differences in information asymmetries (Fenn 2000, Santos 2003), in agency costs (Chow 1982, Francis and Wilson 1988, Chaney, Jeter, and

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low-risk firms have stronger incentives to choose to be audited as a way to ensure high-quality accounting information. Hence, choosing to be audited could be viewed by external parties as a positive signal about the firm's type. Consistent with this reasoning, Lennox and Pittman (2011) find that after audits became voluntary in the United Kingdom, firms that chose to continue to be audited received a credit-rating upgrade due to signaling effects. Hence, it is plausible that firms that choose to be audited are more willing to take other measures to ensure high-quality accounting information – for example, to maintain high-quality internal reporting systems. As a result, our first hypothesis, stated in alternative form, is as follows:

H1: All else equal, opt-out firms have lower RSQ than do audited firms.

Our second hypothesis relates to differences in opt-out firms' RSQ before the opt-out law took effect, when these firms were required to be audited, and afterwards, when these firms no longer were audited. Hence, it is plausible that auditors have more expertise with respect to reporting systems than do small firms, given that the limited resources of small firms could limit these firms' ability to develop and maintain such systems. Hence, auditors potentially could improve these firms' RSQ. As a result, choosing not to be audited and the loss of the auditor's consulting advice that results could have a negative impact on firms' RSQ. Consistent with this reasoning, Krishnan and Yu (2012) find that among small firms in the United States, those firms that receive an auditor attestation over internal controls have better revenue quality than do those firms that do not receive such an attestation. This reasoning leads to our second hypothesis, stated

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Shivakumar 2004), and in financing concerns (Titman and Trueman 1986, Blackwell, Noland, and Winters 1998). Because we focus on how audit exemptions affect RSQ, however, we do not focus on the impact of such factors on RSQ or on accounting quality more generally.

in alternative form:

H2: All else equal, opt-out firms' RSQ declines after these firms no longer are audited.

Our third hypothesis relates to whether opt-out firms take measures to reduce any negative impact on RSQ that results from opting out. When audits are voluntary, firms make a cost-benefit trade-off in deciding whether to be audited (e.g., Chow 1982; Watts and Zimmerman 1983). For our sample of firms, one benefit of being audited is having access to the auditor's expertise in internal reporting systems. Firms that are not audited, however, have ways to recapture this benefit without incurring the other costs of being audited – specifically, firms can engage another third party with expertise in internal reporting systems (e.g., an external accountant, or an auditor that also has a license as an external accountant); we refer to such a third party as an "external consultant." In doing so, a firm potentially can mitigate the decline in RSQ that otherwise might result from opting out. This reasoning leads to our third hypothesis, stated in alternative form:

H3: All else equal, the use of an external consultant is correlated with a smaller decline in RSQ after opting out.

We examine each of these hypotheses three times: once for all of the questions from the inspection taken together, once for only the "accounting" questions alluded to in the introduction, and once for only the "other questions" alluded to in the introduction. In Section 4.2, we discuss in more detail how the accounting questions differ from the other questions.

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4.   Research design

4.1   Sample and data

The sample is an unbalanced panel with observations from 2009, 2010, 2011, and 2012 –

the last two years before the opt-out law took effect, when firms were required to be audited, and

the first two years when firms could choose not to be audited. For firms that were inspected in

2012, we have three years of data: 2009, 2010, and 2011. For firms that were inspected in 2013,

we have four years of data: 2009, 2010, 2011, and 2012. To select which firms to inspect, the

NDT used stratified random sampling. We discuss this process in the appendix.[8] The sample

consists of 6,627 observations and 2,117 different firms. The data come from the NDT. The

inspections done by the NDT were conducted in Norwegian. A translated version of the survey is

in the appendix.

One point worth stressing is that all of the firms in the NDT's inspections were eligible to

opt out. Some of the firms that the NDT chose to inspect opted out, while others did not, but in

any case, each firm that was inspected could have opted out. As a result, all of the firms in our

analyses had discretion in choosing whether to be audited.

4.2   Variables

We have five variables of interest. The first is our measure of RSQ, *SCORE*. We construct

this variable using responses from the NDT's inspections of opt-out candidates. The questions

were answered by the NDT's inspectors, not by the firms themselves. The questions on the

inspection relate to the quality of firms' internal reporting systems. We compute three different

versions of *SCORE*. The first is for all questions taken together. The second is for questions from

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[8]The essence of the NDT's sampling strategy is that firms were randomly selected, conditional on region and whether
the firm had an audit remark in 2010. Hence, the NDT's sampling strategy was designed to ensure that the inspected
firms were representative of the broader population of firms that were eligible to opt out.

the theme "System for bookkeeping and reporting." In general, the questions from this theme relate to specific provisions in the Norwegian accounting regulations. Examples of questions from this theme are the following:

- Does the company have substantial weaknesses relating to required reporting, as defined by Section 4 of the Norwegian Bookkeeping Act?

- Does the company have substantial weaknesses relating to its audit trail, as defined by Section 4 of the Norwegian Bookkeeping Act?

- Are the accounting procedures, accounting systems, and bookkeeping sufficient to ensure that the shareholders' use of certain capital assets is taxed appropriately?

For the most part, these questions require technical knowledge of accounting regulations imposed by the Norwegian authorities. Consequently, we refer to questions from this theme as "accounting questions."

The third version of *SCORE* is for all of the questions from the remaining themes, taken together. In contrast to the accounting questions, these questions require less in-depth knowledge of accounting regulations. As a result, we refer to these questions as "other questions." Examples of these questions are the following:

- Does the company have substantial weaknesses that relate to cash transactions (i.e. no cash register)?

- Does the company have sufficient documentation for travel expenses (the documentation must have information on e.g. the name of the traveler, the date of travel, the purpose of travel, and the firm providing the travel)?

It is likely that the auditor's consulting advice is most useful for the accounting questions, as

these questions generally require deeper knowledge of certain accounting regulations. As a result, to examine whether the impact on RSQ of not being audited differs between the types of question, we run our analyses separately for all three versions of *SCORE*.

We construct *SCORE* as follows: For each question, if the question was relevant, the inspector from the NDT evaluated the firm. If the question was irrelevant, the inspector did not.[9] We create a variable, *MAX_POINTS*, whose value equals the number of questions the firm was evaluated on. In addition, for each question, we award 1 point if the firm responded in a way that implies "good accounting," 0 otherwise. As an example, consider the question, "Does the firm's balance sheet comply with the relevant accounting laws": When the NDT's response is "yes," we award 1 point. When the NDT's response is "no," we award 0 points. We create a variable, *TOT_POINTS*, whose value equals the number of questions the firm responded to in a way that implies good accounting. Finally, we define *SCORE* as *TOT_POINTS* / *MAX_POINTS*. A value for *SCORE* of 0.90, for example, means on 90 percent of the questions the NDT evaluated the firm on, the NDT deemed the firm to have "good accounting." For each observation, *SCORE* is between 0 and 1. We follow this process for all three versions of *SCORE*.

To be clear, the NDT evaluated each firm on each question for at least three years, and for four years if the inspection was conducted in 2013. Consequently, the NDT evaluated each firm separately for either three or four different years, potentially with different answers in different years. The NDT, for example, could conclude that a firm's balance sheet complied with the relevant accounting laws in 2009 and in 2010 but not in 2011 or in 2012. As a result, for each firm, we compute *SCORE* separately for each year the firm's inspection covers. Similarly, when

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[9]For some firms, a given question is irrelevant. One question, for example, is whether the firm has travel expenses above some materiality threshold. A follow-up question asks whether, conditional on having travel expenses above this threshold, any necessary information is lacking. Firms that do not have travel expenses above this threshold cannot be evaluated on this question.

the inspector controlled the documentation for travel expenses or related-party transactions, he or she might discover that the requirements in the law were met in some years, but not in others. In this way, for opt-out firms, we have a measure of *SCORE* before these firms could opt out as well as after these firms opted out. This approach allows us to examine whether the RSQ of opt-out firms declined after these firms no longer were audited.

Two variables relate to auditor choice. To distinguish opt-out firms from audited firms, we use *OPTOUT*, which equals 1 for opt-out firms and 0 for audited firms. To distinguish between those years when opt-out firms used an auditor and those years when opt-out firms did not, we use *NOAUDIT*. For audited firms, *NOAUDIT* always equals 0. For opt-out firms, *NOAUDIT* equals 1 in those years when opt-out firms did not use an auditor and equals 0 in those years opt-out firms did use an auditor (i.e., the years before opt-out firms opted out). Hence, for audited firms, *OPTOUT* and *NOAUDIT* always equal 0. For opt-out firms, *OPTOUT* always equals 1, and *NOAUDIT* equals 1 only in those years the firm did not have an auditor. Suppose a firm opted out in 2011: for 2009 and 2010, *NOAUDIT* = 0. For 2011 and 2012, *NOAUDIT* = 1. For each year, *OPTOUT* = 1.

Finally, two variables relate to the use of external consultants. To capture a firm's use of external consultants, we use the variable *EXTHELP*. *EXTHELP* = 1 if the firm uses an external accountant or an external auditor (an "external consultant") in preparing its annual financial statements, 0 otherwise.[10] Our interest, however, is in the interaction term *EXTHELP* x *NOAUDIT*. This interaction term is equal to 1 if the firm is not audited and, in addition, if the firm uses an external consultant to prepare its financial statements, 0 otherwise. Hence, for

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[10]The question from the NDT's inspections is as follows: "Who sets up the company's annual reports: the company itself, an external accountant, or an auditor?" *EXTHELP* = 1 if the company uses either an external accountant or an auditor, 0 if the company sets up its annual reports itself.

audited firms, this interaction term always is 0. For opt-out firms, this interaction term is 1 only

for those years when the firm is not audited and the firm uses an external consultant. As a result,

this interaction term allows for the impact on RSQ of not having an auditor to depend on whether

the opt-out firm uses an external consultant.

In sum, the variables we focus on correspond to the following hypotheses:

- *OPTOUT*: used to evaluate the first hypothesis, H1, which relates to any cross-sectional

  differences in RSQ between audited firms and opt-out firms.

- *NOAUDIT*: used to evaluate the second hypothesis, H2, which relates to any difference in

  RSQ in opt-out firms when these firms were audited and when these firms were not

  audited.

- *NOAUDIT* x *EXTHELP*: used to evaluate the third hypothesis, H3, which relates to

  whether the impact on RSQ of opting out depends on whether the opt-out firm used an

  external consultant in preparing its financial statements.

4.3   Regression model

We estimate the following regression model:

$$SCORE_{it} = \beta_0 + \beta_1 OPTOUT_{it} + \beta_2 NOAUDIT_{it} + \beta_3 EXTHELP_{it} + \beta_4 NOAUDIT \times EXTHELP$$
$$+ \beta_5 ASSETS + \beta_6 AGE_{it} + \beta_7 PBANK_{it} + \beta_8 ROA_{it} + \beta_9 AF_{it} + \varepsilon. \quad (1)$$

Model (1) includes also time and industry fixed effects. ε is an error term. We focus on *OPTOUT*,

NOAUDIT, and *NOAUDIT* x *EXTHELP*. The first hypothesis implies that the sign of *OPTOUT*

will be negative, i.e. opt-out firms have lower RSQ than do audited firms. The second hypothesis

implies that the sign of *NOAUDIT* will be negative, i.e. the RSQ of opt-out firms declines after

these firms no longer are audited. The third hypothesis implies a positive sign for *NOAUDIT* x

EXTHELP, i.e. the decline in RSQ among opt-out firms after these firms no longer is audited is

smaller for those opt-out firms that use an external consultant to prepare their annual reports.

Prior studies (Kinney and McDaniel 1989; Doyle, Ge, and McVay 2007b; Clatworthy and

Peel 2013) find that firms that are smaller, younger, riskier, or less profitable have lower

accounting quality or lower-quality accounting systems. To control for these factors, we include

ASSETS and *AGE*, the natural logarithm of total assets and of firm age, respectively; *PBANK,* the

probability of bankruptcy, as computed using model 1 in Ohlson (1980); and *ROA*, returns on

assets, measured as net income divided by total assets. In addition, to control for the general

complexity of a firm's accounting, we include *AF*, the natural logarithm of (1 + audit fees). For

opt-out firms, in the years these firms do not have an auditor, we define *AF* as the natural

logarithm of (1 + audit fees) in the last year these firms had an auditor.[11] To reduce the effects of

outliers in *ROA*, we winsorize *ROA* at the 3rd and 97th percentiles. After taking the natural

logarithm of *AGE*, *ASSETS*, and *AF*, none of these variables are marked by outliers, and so we do

not modify these variables further. [12] To take into account any heteroskedasticity in the residuals,

we compute heteroskedasticity-robust standard errors.

Econometrically, three points are particularly important to note. One is that the dependent

variable, *SCORE*, is not continuous. *SCORE* is bounded between 0 and 1 and thus is a fractional

dependent variable. As a result, estimating model (1) using OLS could lead to biased coefficient

estimates (Papke and Wooldridge 2008). Hence, we estimate model (1) as a generalized linear

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[11]An alternative approach would be to use the average of the firm's audit fees for each year when the firm was audited instead of audit fees in the last year the firm was audited. When we use this alternative approach, we obtain qualitatively the same results.
[12]When we winsorize *ROA* at other levels (for example, the 1st and 99th percentiles, or the 5th and 95th percentiles), we obtain qualitatively the same results. Likewise, if we winsorize *AGE*, *ASSETS*, and *AF* at various levels, we obtain qualitatively the same results.

model (GLM), as proposed in Papke and Wooldridge (2008). (We use the Stata command "glm.")

The second is that *OPTOUT* is endogenous. Hence, the coefficient for *OPTOUT* could be biased. At least two options are possible to control for unobservable differences between opt-out firms and audited firms: firm fixed effects and instrumental variables (IV). With respect to fixed effects, fixed effects focuses only on variation within a firm over time. *OPTOUT* has the same value for each observation for a given firm. As a result, if we were to estimate model (1) with fixed effects, *OPTOUT* could not be included (Wooldridge 2010), and we would be unable to test hypothesis 1. With respect to IV, to be valid, an instrument must be correlated with the dependent variable, *SCORE*, but uncorrelated with the endogenous variable, *OPTOUT*. Finding an instrument that satisfies these criteria would be difficult, as implied by the seemingly small number of articles that use IV to control for the endogeneity of auditor choice (e.g., the use of a Big 4 auditor) when the dependent variable is some measure of accounting quality. Furthermore, using an instrument that does not satisfy these criteria can itself lead to biased coefficient estimates (Larcker and Rusticus 2010).

An alternative option is to control for observable differences by using propensity-score matching (PSM). One limitation with PSM, however, is that it takes into account only observable differences between firms (e.g., Lawrence et al. 2011). Under the plausible assumption that differences between opt-out firms and audited firms are unobservable, differences between opt-out firms and audited firms still could lead to a biased coefficient for *OPTOUT* if we were to use PSM. Moreover, results based on PSM can be sensitive to the assumptions used to generate the matched sample (see DeFond et al. (2014) for an illustration).

Consequently, although *OPTOUT* is endogenous, all of the most obvious solutions for this endogeneity problem have their own problems. Hence, we estimate model (1) as specified above and interpret the coefficient for *OPTOUT* as a correlation – as indicating whether opt-out firms

have lower RSQ than do audited firms, without making any causal claims. In any case, *NOAUDIT* is not affected by this problem. The coefficient for *NOAUDIT* captures whether the RSQ of opt-out firms is lower after these firms no longer are audited. It is not affected by any differences between audited firms and opt-out firms.

The third problem is that *EXTHELP* is endogenous. All of the same problems discussed above with respect to the endogeneity of *NOAUDIT*, however, apply also to *EXTHELP*. Hence, as with *OPTOUT*, we simply estimate model (1) as specified above and interpret the coefficient both for *EXTHELP* and for the interaction term *EXTHELP* x *NOAUDIT* only as a correlation, without making any causal claims.

4.4   Descriptive statistics

In Table 1, we show summary statistics for all firms grouped together. We will comment on four properties of these statistics. First, the mean of *SCORE* is 0.872, and the median is 0.886. These observations suggest that firms in general have fairly high RSQ, which is as expected since all firms had an auditor in 2009 and 2010 and 81 percent of the firms received a clean opinion in 2010 (Fjærli and Raknerud 2012). A clean opinion signals that the auditor finds the accounting system to be of sufficiently high quality to issue a clean opinion. Second, the mean of *OPTOUT* is 0.476, so that opt-out firms account for 47.6 percent of the total observations in the sample. Third, the mean of *NOAUDIT* is 0.164, so that 16.4 percent of the total observations are for firm-years when the firm is not audited. While this figure might seem low, firms were required to have an auditor in each of the first two years in our sample period (2009 and 2010). Among firm-years from 2011 and 2012, the two years firms had the option to opt out, 39 percent do not have an auditor. Fourth, the mean of *EXTHELP* is 0.919, so that the majority of firms use external consultants in preparing their annual financial statements.

In Table 2, we show a correlation matrix. We will comment on two correlations. First, *SCORE* is not correlated with either *OPTOUT* or *NOAUDIT*. This lack of a correlation, however, should be interpreted with caution, as this correlation is only a bivariate correlation that does not account for the potential impact of other variables – for example, for the use of external consultants by opt-out firms, or for firm size. Second, *SCORE* and *EXTHELP* have a positive correlation, so that using an external consultant to prepare the annual reports is correlated with higher RSQ.

In Table 3, we show separate data for opt-out firms and for audited firms from 2009 and 2010, years when audits were required. To make the data easier to interpret, we use non-logged values for total assets, audit fees, and age. The p-value for a t-test of differences in means is in the far-right column. We will comment on two differences between these two types of firms. First, the difference in *SCORE* between opt-out firms and audited firms is not statistically significant. As with the lack of a correlation between *SCORE* and *OPTOUT*, however, the bivariate analyses in Table 3 do not account for the potential impact of other variables. Second, the difference in size between audited firms and opt-out firms is statistically significant, and audited firms are about twice as large as opt-out firms, on average.

In Table 4, we show separate data for opt-out firms in years when these firms did have an auditor and did not have an auditor. We will comment on two differences in opt-out firms before and after opting out. First, the mean of *SCORE* is higher after the opt-out firms no longer are audited. As above, however, this bivariate correlation does not take into account the potential impact of other variables. The multivariate analyses in Section 5 as well as the univariate analyses below indicate that, in particular, the use of external consultants by opt-out firms has an important impact on these firms' RSQ after opting out. Second, *EXTHELP* is 6.2 percentage points higher when opt-out firms were audited than when opt-out firms were not audited. Hence,

after opting out, opt-out firms relied to a greater extent on themselves than on external consultants to prepare their annual reports, although most of these firms still used external consultants.

In Table 5, we again show data for opt-out firms only in the years these firms were not audited, but we show separate data for those opt-out firms that engaged an external consultant and those that did not. Post-opt-out, these two groups of firms are similar in size, age, risk, and profitability but differ markedly in *SCORE*. The difference in *SCORE* for opt-out firms that engaged a consultant and for opt-out firms that did not is statistically significant at the one-percent level, with a p-value of 0.000. Moreover, the magnitude of this difference is large. The mean for opt-out firms that engaged an external consultant is 4.7 percentage points higher than for those that did not: 0.884 compared to 0.837. The difference in the median is 5.3 percentage points: 0.900 compared to 0.847. These differences suggest that the impact of opting out on RSQ differed markedly among those opt-out firms that engaged an external consultant than among those that did not.

5.   Results

5.1   Baseline analyses

In Table 6, we show the results of the estimation of model (1). Given that we estimate model (1) using GLM, the coefficients shown in Table 6 cannot be interpreted as the impact on *SCORE* of a marginal change in the independent variables. Hence, in Table 7, we show the marginal effects for each of the independent variables. The values in Table 7 can be interpreted as the impact on *SCORE* of a marginal change in a given independent variable when the value of each of the other independent variables is at its mean (Williams 2012). A value of -0.005 for *OPTOUT*, for example, means that if each of the other independent variables were at its mean value, *SCORE*

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would be 0.5 percentage points lower for opt-out firms than for audited firms.

In the two far-left columns in Table 6 and in Table 7, we show the results for our baseline analyses, where we analyze all of the inspection questions taken together. In this case, *OPTOUT* is negative and statistically significant regardless of whether the interaction term *NOAUDIT* x *EXTHELP* is included. Hence, consistent with the first hypothesis, all else equal, opt-out firms have worse RSQ than do audited firms. The magnitude of this effect, however, is modest. The value for *OPTOUT* in Table 7 shows that the marginal effect of being an opt-out firm (i.e., of having *OPTOUT* = 1) is only -0.5 percentage points. Given that the average value for *SCORE* for the entire sample is 0.868, this difference appears not to be very large. Qualitatively, this result is similar to the finding in Clatworthy and Peel (2013) that firms that choose not to be audited have lower accounting quality than do firms that are audited. As discussed in Section 4.3, *OPTOUT* is endogenous. Hence, we conclude only that *OPTOUT* and *SCORE* are negatively correlated; we do not make any causal claims.

When we exclude the interaction term, *NOAUDIT* is positive and statistically significant. This result is consistent with the bivariate analyses in Section 4. This result, however, is likely due to omitted-variables bias – that is, the model without the interaction term is misspecified. By construction, *NOAUDIT* x *EXTHELP* is positively correlated with *NOAUDIT* and, in addition, is positively correlated with *SCORE*.[13] Hence, the positive correlation between *NOAUDIT* on *SCORE* in the model without the interaction term likely captures the impact of *NOAUDIT* x *EXTHELP*, implying that the observed positive correlation between *NOAUDIT* and *SCORE* is too high.

Consistent with this reasoning, when we include the interaction term, *NOAUDIT* becomes

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[13]Untabulated results show that the correlation between *NOAUDIT* x *EXTHELP* and *SCORE* is positive and statistically significant at the one-percent level, for all three definitions of *SCORE*.

negative and is statistically significant. As a consequence, opting out is correlated with a decline in RSQ, consistent with the second hypothesis. In addition, the magnitude of this effect is not trivial. Based on the results shown in Table 7, after opt-out firms opt out, the RSQ of these firms declines by 1.9 percentage points. Moreover, *NOAUDIT* compares the RSQ of opt-out firms before and after these firms opted out. Consequently, it relates only to opt-out firms and thus is not affected by any unobservable differences between opt-out firms and audited firms. Hence, the effect captured by *NOAUDIT* plausibly captures the causal effect on RSQ of no longer being audited.

Finally, consistent with the third hypothesis, the interaction term *NOAUDIT* x *EXTHELP* is positive and statistically significant. This result suggests that the use of an external consultant mitigates the decline in RSQ that results from opting out. Consequently, among opt-out firms, the decline in RSQ due to opting out is smaller for those opt-out firms that use an external consultant to prepare their annual reports than for those that do not. Moreover, the magnitude of this effect is large relative to the impact of *NOAUDIT* alone. The marginal effect of *NOAUDIT* implies that the RSQ of opt-out firms declines by 1.9 percentage points after these firms opt out, while the marginal effect of *NOAUDIT* x *EXTHELP* implies that when opt-out firms are not audited, the use of an external consultant is correlated with an increase in RSQ of 2.9 percentage points. These results imply that the use of external consultants, at a minimum, compensates in full for the decline in RSQ that otherwise would result from opting out.

To re-iterate, we interpret the impact of the interaction term only as a correlation. Opt-out firms themselves choose whether to use an external consultant, and opt-out firms that use an external consultant might be different in ways we do not control for (i.e., because of unobservable factors) from those that choose not to use an external consultant. Hence, our results do not imply that using an external consultant necessarily has a causal impact in increasing RSQ. Nonetheless,

our results do imply that opting out does not necessarily have a negative impact on RSQ.

5.2   *Supplemental analyses*

In the middle two columns of Table 6 and of Table 7, we show, respectively, regression results and marginal effects for the accounting questions. In the far-right columns, we show regression results and marginal effects for the other questions. For the accounting questions, all of the results are qualitatively the same as in the benchmark analyses, where we analyze all questions together. *OPTOUT* is negative and statistically significant, *NOAUDIT* is negative and statistically significant (with the interaction term included), and the interaction term *NOAUDIT* x *EXTHELP* is positive and statistically significant. Moreover, quantitatively, all of these effects are stronger, especially for the last two terms. *SCORE* is 0.7 percentage points lower than for opt-out firms than for audited firms, while for opt-out firms, *SCORE* declines by 3.1 percentage points after these firms opt out. Finally, among opt-out firms, in the years when these firms are not audited, the use of an external consultant is correlated with an increase in *SCORE* of 3.8 percentage points. As with the results for all of the questions taken together, these results imply that the use of an external consultant, at a minimum, compensates in full for the decline in RSQ that otherwise would result from opting out.

For the other questions, by contrast, the results differ markedly. Neither *OPTOUT* nor *NOAUDIT* is statistically significant, while the estimated marginal effect is less than half the size of the corresponding marginal effect for the accounting questions. While the interaction term is again positive and statistically significant, its estimated marginal effect is roughly half as large as the marginal effect for the accounting questions. Altogether, these results suggest that the impact on RSQ of opting out is strongest in those areas that require knowledge of relevant accounting regulations. These areas are those in which auditors plausibly have the most expertise relative to

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firms. As a result, these areas are those in which the impact of losing the auditor's consulting advice plausibly would be expected to be strongest.

6.   Conclusion

We focus on the impact of auditor exemptions on the quality of small firms' internal reporting systems. We examine a natural experiment where a change in regulation gave small Norwegian firms the option to choose not to be audited. We use data from inspections conducted by the Norwegian Directorate of Taxes to measure the quality of firms' internal reporting systems. We examine whether the reporting-system quality (RSQ) of firms was affected by this law change.

We find that the RSQ of those firms that chose not to be audited declined after the opt-out law took effect (i.e., after these firms no longer were audited). Moreover, we find that this decline was especially large in areas that required more in-depth knowledge of accounting regulations, i.e. the areas where the loss of the auditor's consulting advice plausibly was strongest. In addition, however, we find that firms that chose not to be audited could mitigate this decline in RSQ by engaging a third party that has expertise in reporting systems (e.g., an external accountant, or an auditor that also has a license as an accountant). In total, these results suggest that audit exemptions could have a negative impact on firms' RSQ but that firms can take steps to mitigate this effect. At the same time, our results show that even after the law change took effect, those opt-out firms that chose not to use an external consultant had a high degree of RSQ in the following one or two years. This is natural since the internal control system prior to opting out has been sufficient for the auditor to issue an audit opinion (of which 81 percent were clean).

The main contribution of this study is to identify effects of giving small firms an exemption from mandatory audit requirements. We focus on only one specific effect – on how

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audit exemptions affect firms' RSQ. Future research could examine other consequences of audit exemptions. In addition, in Norway, only very small firms were given an audit exemption. One interesting issue to examine in future research is how audit exemptions affect larger firms. These and other analyses could help yield further insights into the consequences of audit exemptions. We also like to point out that our results are obtained using firms that have experience with being audited. Thus our findings do not generalize to firms that never have been audited.

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Table 1: Summary Statistics

Variable	Mean	St. Dev.	Minimum	Maximum	Percentiles				
					10th	25th	50th	75th	90th
SCORE	0.872	0.092	0.212	1.000	0.760	0.825	0.886	0.943	0.977
OPTOUT	0.476	0.499	0.000	1.000	0.000	0.000	0.000	1.000	1.000
NOAUDIT	0.164	0.371	0.000	1.000	0.000	0.000	0.000	0.000	1.000
EXTHELP	0.919	0.272	0.000	1.000	1.000	1.000	1.000	1.000	1.000
ASSETS	7.156	1.571	0.011	11.503	5.192	6.293	7.252	8.241	9.093
AGE	2.135	0.769	0.693	4.615	1.099	1.609	1.946	2.708	3.178
PBANK	0.406	0.380	0.000	1.000	0.006	0.032	0.289	0.786	0.997
ROA	-0.022	0.340	-1.354	0.546	-0.323	-0.056	0.014	0.117	0.293
AF	2.483	0.596	0.000	5.303	1.609	2.079	2.485	2.890	3.219

Table 1 contains summary statistics for all of the variables used in the regression analyses. The sample is an unbalanced panel that covers 2009-2012 and consists of 6,627 observations and 2,117 unique firms. *SCORE*: measure of the quality of a firm's internal reporting system, based on inspections conducted by the Norwegian tax authorities. *OPTOUT*: indicator variable set to 1 if the firm is an opt-out firm, 0 otherwise. *NOAUDIT*: indicator variable set to 1 for firm-years when the firm is not audited, 0 otherwise. *EXTHELP*: indicator variable set to 1 if the firm uses an external consultant in preparing its annual financial statements, 0 otherwise. *ASSETS*: natural logarithm of total assets, as measured in thousands of NOK. *AGE*: natural log of the firm's age. *PBANK*: probability of bankruptcy, as computed using model 1 in Ohlson (1980). *ROA*: net income divided by total assets. *AF*: the natural log of (1 plus audit fees), as measured in thousands of NOK. *ROA* is winsorized at the 3rd and 97th percentiles.

Table 2: Correlation Matrix

	SCORE	OPTOUT	NOAUDIT	EXTHELP	ASSETS	AGE	PBANK	ROA	AF
SCORE	1.000								
OPTOUT	0.016	1.000							
NOAUDIT	0.029	0.465*	1.000						
EXTHELP	0.064*	-0.020	-0.075*	1.000					
ASSETS	0.017	-0.198*	-0.110*	0.007	1.000				
AGE	0.093*	-0.001	0.052*	0.051*	0.037*	1.000			
PBANK	0.020	-0.003	-0.013	0.029	-0.278*	-0.045*	1.000		
ROA	0.056*	0.021	0.002	-0.005	0.396*	0.015	-0.509*	1.000	
AF	0.207*	0.028	-0.008	0.065*	0.200*	0.117*	0.089*	-0.029	1.000

Table 2 contains Pearson correlations. Correlations that are statistically significant at the one-percent level are denoted by an *. *SCORE*: measure of the quality of a firm's internal reporting system, based on inspections conducted by the Norwegian tax authorities. *OPTOUT*: indicator variable set to 1 if the firm is an opt-out firm, 0 otherwise. *NOAUDIT*: indicator variable set to 1 for firm-years when the firm is not audited, 0 otherwise. *EXTHELP*: indicator variable set to 1 if the firm uses an external consultant in preparing its annual financial statements, 0 otherwise. *ASSETS*: natural logarithm of total assets, as measured in thousands of NOK. *AGE*: natural log of the firm's age. *PBANK*: probability of bankruptcy, as computed using model 1 in Ohlson (1980). *ROA*: net income divided by total assets. *AF*: the natural log of (1 plus audit fees), as measured in thousands of NOK. *ROA* is winsorized at the 3rd and 97th percentiles.

Table 3: Summary Statistics, Opt-Out Firms v. Audited Firms, 2009-2010

Variable	Opt-Out Firms		Audited Firms		P-value
	Mean	Median	Mean	Median	
SCORE	0.873	0.885	0.869	0.881	0.235
EXTHELP	0.933	1.000	0.923	1.000	0.234
ASSETS	2,095	1,039	4,067	1,928	0.000
AGE	9.6	6.0	10.6	5.0	0.006
PBANK	0.409	0.297	0.408	0.304	0.941
ROA	-0.009	0.021	-0.029	0.012	0.062
AF	13.6	12.0	13.4	11.0	0.497

Table 3 shows data only for 2009 and 2010, when all firms were required to be audited. *ASSETS*, *AGE*, and AF are the original values (i.e., the non-logged values) for total assets, firm age, and audit fees, respectively, where audit fees and assets are measured in thousands of Norwegian crowns. See Table 1 for variable definitions. The far-right column is the p-value for a t-test in differences in means in the relevant variable for opt-out firms and audited firms.

Table 4: Summary Statistics, Opt-Out Firms, pre- v. post-opt-out

Variable	With Auditor		Without Auditor		P-value
	Mean	Median	Mean	Median	
SCORE	0.871	0.884	0.878	0.895	0.054
EXTHELP	0.935	1.000	0.873	1.000	0.000
ASSETS	2,112	1,050	2,022	977	0.394
AGE	9.805	6.000	10.635	7.000	0.012
PBANK	0.410	0.302	0.395	0.234	0.316
ROA	-0.011	0.019	-0.021	0.020	0.462

Table 4 shows data only for opt-out firms. Data in the columns "With Auditor" are for before these firms opted out; data in the columns "Without Auditor" are for after these firms opted out. *ASSETS* and *AGE* are the original values (i.e., the non-logged values) for total assets and firm age, where assets are measured in thousands of Norwegian crowns. See Table 1 for variable definitions. The far-right column is the p-value for a t-test in differences in means in the relevant variable for opt-out firms pre- and post-opt-out.

Table 5: Summary Statistics, Opt-Out Firms, Post-Opt-Out, Consultant v. No Consultant

Variable	With Consultant		Without Consultant		P-value
	Mean	Median	Mean	Median	
SCORE	0.884	0.900	0.837	0.847	0.000
ASSETS	2,005	977	2,144	971	0.588
AGE	10.762	7.000	9.761	7.000	0.205
PBANK	0.399	0.243	0.369	0.145	0.394
ROA	-0.023	0.023	-0.004	0.011	0.540

Table 5 shows data only for opt-out firms, and only in the years after these firms opted out. Data in the columns "With Consultant" are for those opt-out firms that used an external consultant after opting out; data in the columns "Without Consultant" are for those opt-out firms that did not use an external consultant after opting out. *ASSETS* and *AGE* are the original values (i.e., the non-logged values) for total assets and firm age, where assets are measured in thousands of Norwegian crowns. See Table 1 for variable definitions. The far-right column is the p-value for a t-test in differences in means in the relevant variable for opt-out firms post-opt-out for those opt-out firms that used an external consultant and for those opt-out firms that did not.

Table 6: Regression Results

DV	SCORE					
Question type	All		Accounting		Other	
OPTOUT	-0.048**	-0.047**	-0.090**	-0.087**	-0.022	-0.022
	(0.024)	(0.024)	(0.043)	(0.043)	(0.023)	(0.023)
NOAUDIT	0.080**	-0.170*	0.148**	-0.376***	0.054	-0.089
	(0.037)	(0.088)	(0.067)	(0.143)	(0.036)	(0.087)
EXTHELP	0.154***	0.083**	0.162***	0.005	0.168***	0.128***
	(0.035)	(0.037)	(0.059)	(0.063)	(0.036)	(0.040)
NOAUDIT x EXTHELP		0.288***		0.610***		0.164*
		(0.088)		(0.143)		(0.087)
ASSETS	0.012	0.012	0.000	0.000	0.019**	0.019**
	(0.008)	(0.008)	(0.015)	(0.015)	(0.007)	(0.007)
AGE	0.039***	0.040***	0.031	0.034	0.044***	0.045***
	(0.014)	(0.014)	(0.025)	(0.025)	(0.013)	(0.013)
PBANK	0.070**	0.072**	0.021	0.024	0.098***	0.099***
	(0.033)	(0.033)	(0.059)	(0.058)	(0.032)	(0.032)
ROA	0.228***	0.229***	0.316***	0.318***	0.204***	0.205***
	(0.037)	(0.037)	(0.068)	(0.068)	(0.035)	(0.035)
AF	0.184***	0.183***	0.182***	0.179***	0.201***	0.201***
	(0.018)	(0.018)	(0.032)	(0.032)	(0.018)	(0.018)
Constant	1.041***	1.103***	1.683***	1.821***	0.642***	0.677***
	(0.076)	(0.077)	(0.142)	(0.143)	(0.076)	(0.077)
N	6,627	6,627	6,627	6,627	6,627	6,627
Time FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes

Table 6 shows the regression results. See Table 1 for variable definitions. All models are estimated using GLM (Papke and Wooldridge 2008). *, **, and *** denote statistical significance at the 10-, five-, and one-percent level, respectively. Heteroskedasticity-robust standard errors are in parentheses.

Table 7: Marginal Effects

DV	SCORE					
Question type	All		Accounting		Other	
OPTOUT	-0.005**	-0.005**	-0.007**	-0.007**	-0.003	-0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
NOAUDIT	0.009**	-0.019*	0.011**	-0.031**	0.007	-0.012
	(0.004)	(0.011)	(0.005)	(0.013)	(0.005)	(0.012)
EXTHELP	0.018***	0.009**	0.013**	0.000	0.023***	0.017***
	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.006)
NOAUDIT x EXTHELP		0.029***		0.038***		0.021*
		(0.008)		(0.007)		(0.011)
ASSETS	0.001	0.001	0.000	0.000	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
AGE	0.004***	0.004***	0.002	0.003	0.006***	0.006***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
PBANK	0.008**	0.008**	0.002	0.002	0.013***	0.013***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
ROA	0.025***	0.025***	0.024***	0.024***	0.027***	0.027***
	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
AF	0.020***	0.020***	0.014***	0.013***	0.026***	0.026***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
N	6,627	6,627	6,627	6,627	6,627	6,627
Time FEs	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes

Table 7 shows the effect of a one-unit change in the relevant independent variable when the value of each of the other independent variables is at its mean. See Table 1 for variable definitions. *, **, and *** denote statistical significance at the 10-, five-, and one-percent level, respectively. Heteroskedasticity-robust standard errors are in parentheses.

Appendix 1: Inspection questions (translated from Norwegian)

We define as the "accounting" questions all of the questions that come from "Theme 3: System for bookkeeping and reporting." We define as the "other" questions all of the questions from themes 1, 2, 4, 5, 6, and 7.

1. General

    1.1.1   Are the annual reports sent in to and approved by the Brønnøysund Register Centre (Brønnøysundsregistrene)?

Question 1.1.1 is included in *SCORE*.

2. Annual accounts

    2.1.1   Is the income statement completed in accordance with the Norwegian accounting laws?

    2.2.1   Is the balance sheet completed in accordance with the Norwegian accounting laws?
    2.2.2   Is the difference between the accounting- and tax-based values reconciled in the tax return, entry number 0670/0870.

    2.3.1   Are all substantial balance-sheet entries documented?
    2.3.2   If "no" to 2.3.1: Is documentation of the inventory accurate and easy to understand?
    2.3.3   If "no" to 2.3.1: Does the company have the required documents from the bank concerning its deposits and bank debt?

    2.4.1   Does the company disclose any compensation given to management or the members of the board?

    2.5.1   Is a loan given, or collateral pledged, to management, the members of the board, or shareholders?
    2.5.2   If "yes" to 2.5.1: Does the company discloses information about the loan's:

        a)   terms
        b)   interest rate
        c)   repayment plan

    2.5.3   Is a loan given, or collateral pledged, for the benefit of closely related persons to management, the members of the board, or shareholders?
    2.5.4   If "yes" to 2.5.3: Does the company disclose information about the loan's

        a)   recipient
        b)   size

    2.5.5   Is the loan given, or collateral pledged, in accordance with Section 8-7 of the Company Act?

Questions 2.1.1, 2.2.1, 2.2.2, 2.3.1, 2.3.2, 2.3.3, 2.4.1, 2.5.2(a)-(c), 2.5.4(a)-(b), and 2.5.5 are included in *SCORE* if the questions apply (e.g., question 2.5.2 is not included if the answer on question 2.5.1 is "no").

3. System for bookkeeping and reporting

    3.1.1   Who carries out the bookkeeping?

        a)   the company itself
        b)   external accountant

    3.1.2   Who sets up the annual reports?

        a)   the company itself

b) external accountant
c) auditor

3.2.1   What kind of system is used for registering the accounting data?

a) standard accounting program
b) spreadsheet (Excel or similar)
c) another manual system

3.2.2   Section 4 of The Bookkeeping Act sets requirements to basic bookkeeping principles. Does the company have substantial weaknesses that relate to

a) required reporting
b) completeness
c) reality
d) correctness and precision
e) frequency
f) documentation
g) the audit trail
h) preservation of accounting material
i) protection against changes, deletions, *etc*.

3.2.3   Does the company own cars, boats, homes, cabins, holiday homes, or other capital assets that can be used by shareholders or closely related parties?

3.2.4   If "yes" to 3.2.4: Are the accounting procedures and systems as well as the bookkeeping good enough to ensure that the shareholders' use of these capital assets is taxed appropriately?

3.2.5   Do shareholders own capital assets that are rented out to the company?

3.2.6   If "yes" to 3.2.5: Is the price basis for these rentals well-documented?

3.3.1   Is the company registered in connection with the value-added tax (VAT)?

3.3.2   Is the company's documentation for the outgoing VAT, the incoming VAT, and the basis for the calculation of the VAT in accordance with the accounts in the accounting system?

3.3.3   Is the value of the outgoing VAT in the accounting system the same as the value specified in the tax return?

3.3.4   Is the value of the incoming VAT in the accounting system the same as the value specified in the tax return?

3.3.5   Is the value of the debit/credit VAT in the accounting report the same as in the report submitted to the tax authorities?

3.4.1   Does the company give compensation that must be reported in the wage statement?

3.4.2   Does the information given for wage and pension costs correspond with that given in connection with the payroll tax?

3.4.3   Does the company have an account for employees' tax deductions?

3.4.4   Have the employees' tax deductions gone into this account?

EXTHELP is based on question 3.1.2. *EXTHELP* = 1 if either an external accountant or an auditor sets up the annual reports, 0 if the company sets up the annual reports itself.

For *SCORE*, questions from this sub-section are included in the group denoted by "accounting questions." Questions from all of the other sub-sections are included in the group "other questions."

Questions 3.2.2(a)-(i), 3.2.4, 3.2.6, 3.3.2, 3.3.3, 3.3.4, 3.3.5, 3.4.2, 3.4.3, and 3.4.4 are included in *SCORE* if the questions apply.

4.   Documentation

4.1.1   Does the company issue invoices when selling goods and services?
4.1.2   If "yes" to 4.1.2: Section 5.1 of the Bookkeeping Act requires certain documentation in the invoices.   Does the company lack substantial weaknesses that relate to

   a)   the invoice's number and date
   b)   the consent of the parties
   c)   the compensation's type and scope
   d)   the time and place of the delivery
   e)   the consideration given and the date the payment is due
   f)   possible value-added taxes or other taxes or fees

4.2.1   Does the company have substantial cash sales?
4.2.2   If "yes" to 4.2.1: Does the company have a cash register?
4.2.3   If "yes" to 4.2.2: Does the company lack substantial weaknesses that relate to

   a)   real-time registration of sales, with a timestamp for each sale
   b)   the documentation of the sale, a receipt (or something similar) with the number and date
   c)   the documentation of corrections, with indications of the sum, the reason, and the number of corrections
   d)   the daily reporting of dated, numbered receipts
   e)   the daily reconciliation of the "z-report" with the report from the cash register

4.3.1   Purchases should be documented with the documentation the seller has issued. This documentation should contain all of the information required by Section 5.1 of the Bookkeeping Act. Does the company lack substantial weaknesses that relate to:

   a)   the invoice's number and date
   b)   the consent of the parties
   c)   the compensation's type and scope
   d)   the time and place of the delivery
   e)   the consideration given and the date the payment is due
   f)   possible value-added taxes or other taxes or fees

4.4.1   Does the company have documentation in the following areas:

   a)   wages and other forms of compensation that must be reported
   b)   withholding tax

4.5.1   Is the company required to document accrued time?
4.5.2   If "yes" to 4.5.2: Has the person who carries out the services documented the number of hours for each owner and employee in the case of a direct correlation between compensation and time use?

Questions 4.1.2(a)-(f), 4.2.2(a)-(e), 4.3.1(a)-(f), 4.4.1(a)-(b), and 4.5.2 are included in *SCORE* if the question applies.

5.   *Appointments*

5.1.1   Is the company of a type that carries out appointments?
5.1.2   If "yes" to 5.1.1: Are the appointments documented?
5.1.3   If "yes" to 5.1.2: Does the documentation include the point of time for the service and the customer's name?
5.1.4   If "yes" to 5.1.2: Does the company have documentation for which appointments are not carried out?

Questions 5.1.2, 5.1.3, and 5.1.4 are included in *SCORE* if they apply.

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6.   *Withdrawals*

6.1.1   Are resources withdrawn from the company?
6.1.2   If "yes" to 6.1.1: Does the company have documentation for:

     a)   the withdrawal's date
     b)   the nature of the payment
     c)   the size of the payment
     d)   a statement of the fair value

Questions 6.1.2(a)-(d) are included in *SCORE* if they apply.

7.   *Expenses*

7.1.1   Does the company have travel and residence expenses above the materiality threshold?
7.1.2   If "yes" to 7.1.1: Does the company have documentation for:

     a)   whom the expenses cover
     b)   the objective of the trip

7.1.3   Do the travel expenses seem legitimate?

7.2.1   Does the company have entertainment expenses above the materiality threshold?
7.2.2   If "yes" to 7.2.1: Does the company have documentation for

     a)   whom the entertainment includes
     b)   the objective of the entertainment

Questions 7.1.2(a)-(b), 7.1.3, and 7.2.1(a)-(b) are include in *SCORE* if they apply.

Appendix 2: NDT's sample selection

In this appendix, we describe the process the Norwegian Directorate of Taxes (NDT) used to choose which 2,117 firms to sample (the "inspected firms"). To simplify the math, we use in these examples 2,000 firms instead of 2,117. To choose the sample, the NDT used stratified random sampling.[1] First, the NDT divided Norway into five different regions. Second, the NDT ensured that each region accounted for the same share of the inspected firms as for the NDT's normal inspections. If a region, Region A, accounted for 30 percent of the NDT's normal inspections, for example, 2,000 x 0.30 = 600 of the inspected firms came from Region A. Third, the NDT ensured that within each region, the share of the inspected firms that received at least one audit remark in 2010[2] was the same as for the NDT's normal inspections. If 20 percent of Region A's firms had at least one audit remark during the NDT's normal inspections, for example, 600 x 0.20 = 120 of the inspected firms from Region A had at least one audit remark in 2010; the remaining 600 – 120 = 480 firms did not.

This approach yields 10 separate strata – five regions, and two groups within each region (one group that consisted of firms with at least one audit remark, and one group that consisted of firms with no audit remarks). Within each strata, the NDT ensured that the share of the inspected firms that chose not to be audited was the same as the share of all of the "inspection candidates" (i.e., all of the firms that met the criteria necessary to choose not to be audited) that chose not to be audited. Suppose that in Region A, 40 percent of the firms that (1) could have opted out and (2) had at least one audit remark did choose to opt out: The NDT ensured that 120 x 0.40 = 48 of the inspected firms from the stratum "Region A, at least one audit remark" opted out. These 48

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[1]Fjærli and Raknerud (2012) describe the methodology used to select which firms to inspect (available only in Norwegian).

[2]2010 was the final year all firms were required to have an auditor. Hence, even those firms that opted out could have had an audit remark in 2010.

inspected firms were randomly chosen from among all inspection candidates in Region A that had at least one audit remark and that chose to opt out. The remaining $120 - 48 = 72$ inspected firms from this stratum did not choose to opt out. These 72 inspected firms were randomly chosen from among all the inspection candidates in Region A that had at least one audit remark and that chose to continue to be audited.