# The demand for voluntary audit in micro-companies: Evidence from Finland

Hannu Ojala, Jill Collis, Juha Kinnunen, Lasse Niemi and Pontus Troberg

#### **Abstract**

The purpose of this study is to uncover additional determinants of the demand for voluntary audit in micro-companies by investigating the internal management factors that have not yet been explored in prior literature. The hypotheses are developed from the literature and interviews with owner-managers of such companies, bank lenders and the tax authority. The study is based on archival data relating to some 50,000 Finnish micro-companies over the three-year period following the introduction of audit exemption in 2008. Our results show that the drivers of voluntary audit are (1) management needs to ensure security of supply from trade creditors, (2) the company is not in financial distress, (3) the company is growing, (4) management has a need for tax reporting credibility, and (5) ownership is dispersed. The results of this research will be of interest to the owners and managers of micro-companies, as well as the accounting and auditing profession.

## **Key words**

Audit theory, external audit, regulation

## Biographies of the authors

Hannu Ojala is Acting Professor of Accounting at University of Tampere and Professor of Practice at Aalto University School of Business, Helsinki.

Jill Collis is the Founding Director of the Accounting and Auditing Research Group at Brunel University London.

Lasse Niemi is Associate Professor of Auditing at Aalto University School of Business, Helsinki.

Juha Kinnunen is Professor of Accounting, Aalto University School of Business, Helsinki.

Pontus Troberg is Professor of Accounting, Hanken School of Economics, Helsinki.

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## 1. Introduction

The purpose of this study is to uncover additional determinants of the demand for voluntary audit in micro-companies by investigating the internal management factors that have not yet been explored in the literature. Micro-companies are not only of economic importance to the many small and medium-sized accounting practices that service their needs, but they are also important at macro-level. In the EU, for example, they represent 92 percent of the business population and provide 29 percent of jobs (EC, 2013, p. 10). Together with small and medium-sized companies, they are considered 'key to ensuring economic growth, innovation, job creation, and social integration' (EC 2015, n.p.). Our study is also set in the wider context of the debate over reducing administrative burdens for micro-entities under the new Accounting Directive (Directive 2013/34/EU), which affects some 5.3 million micro-companies (75 percent of reporting entities) in the EU. To a large extent, the debate focuses on the dearth of empirical research evidence on the benefits of regulation, which are much harder to measure than the costs (ICAEW, 2015).

Given the option to forgo the audit, the question arises as to why some micro-companies see sufficient benefits in having an external audit once it becomes voluntary. A number of previous studies have examined the demand for voluntary audit in small companies (e.g. Seow, 2001; Rennie *et al.* 2003; Collis *et al.*, 2004; Hay & Davis 2004; Allee & Yohn, 2009; Collis, 2010; Kim *et al.*, 2011; Lennox & Pittman, 2011; Minnis, 2011; Dedman & Kausar, 2012; Niemi *et al.*, 2012; Dedman *et al.*, 2014). In addition, Collis (2012) investigated the demand for voluntary audit among micro-companies in the UK that fell below the maximum EU size thresholds for micro-entities. However, we are not aware of any large sample based study that has examined the drivers of voluntary audit in very small micro-companies<sup>1</sup>. In view of the importance of micro-entities in the European economy, we add to the

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<sup>&</sup>lt;sup>1</sup> To illustrate, the size of the firms (in terms of average total assets) examined in some prior studies has been the following: Collis *et al.* (2004): 0.706 million GBP (approximately 880 thousand EUR) in a sample of 385 small UK firms; Allee and Yohn (2009): 0.3536 million USD (approximately 273 thousand EUR) in the sample of 4004 US privately-held small businesses; Minnis (2011): 6.51 million USD (approximately 5,028 thousand EUR) in the sample of 25,784 firm-years of private US firms. In contrast, the total assets of the micro-companies analysed in this study averaged only 49.90 thousand EUR in our sample of 149,013 firm-years (see Table 4).

literature by identifying additional drivers of voluntary audit not examined by Collis (2012). The main reason for the lack of large-sample studies is the difficulty in obtaining data, since few countries collect and publish detailed financial data for these very small companies. It can also be argued that the move towards regulatory relaxation for smaller entities in many jurisdictions exacerbates this problem (ICAEW, 2015).

Since 1994, EU Member States have been able to offer audit exemption to qualifying small companies. In general, a non-publicly accountable company must satisfy two of the three size tests for a small company for two consecutive years. The current thresholds for a small company are shown in Table 1. By the end of 2010, all 27 Member States had done so, using the EU maxima or a lower national level, thus allowing companies a choice: to forgo an independent audit of their financial statements or opt for a voluntary audit. This study is set in Finland, where audit exemption was not introduced until 2008 and, even then, it was only available for very small micro-companies. Table 1 also shows the very low thresholds applicable in Finland and includes the thresholds for the new EU category of micro-entity (EC 2013) by way of comparison.

#### (Insert Table 1 here)

Finland makes a suitable institutional setting for the study due to the availability of detailed data. With the exception of the cash flow statement, which is only required for companies exceeding certain size tests<sup>2</sup>, all companies file a full set of financial statements with the tax authority. This information is subsequently transferred to the public record, thus fulfilling financial reporting requirements. The public record provides access to financial statements and taxable income of limited liability companies and, arguably, increases the reliability of financial information from micro-companies.

<sup>&</sup>lt;sup>2</sup> According to the current Finnish Accounting Act (1336/1997), private companies are not required to prepare cash flow statements if no more than one of the following size thresholds is exceeded: turnover €7.30m, total assets €3.65m and average number of employees 50 during the past two fiscal years.

We analyse both quantitative and qualitative data in this study<sup>3</sup>. The qualitative data was collected via 20 semi-structured interviews conducted in 2012:<sup>4</sup>

- 16 interviews with the owner-managers of micro-companies in a range of business sectors that included architecture, digital media, healthcare education, interior design and restaurants
- 3 interviews with experienced managers in a major commercial bank who were responsible for making lending decisions to small companies operating in the Nordic and Baltic region
- 1 interview with a representative of the Finnish Tax Authority.

A common characteristic of the micro-companies interviewed was that they were all funded by owner's equity and none of them used bank finance. Although they all had opted for voluntary audit in 2008, some were no longer doing so at the time of the interviews in 2012. These interviews provided rich insights from three important stakeholder groups and aided the development of hypotheses for the quantitative part of the study, which was based on an extensive sample comprising some 50,000 Finnish micro-companies over the three years 2008 to 2010. During this period, reducing administrative burdens (exemption from mandatory audit, in particular) and improving access to finance were key issues in discussions concerning micro-companies. Our results show that 32 percent of micro-companies opted for voluntary audit, but this decreased monotonically over the three-year period. This supports studies of small companies in the UK, which document a trend away from audit over time (Dedman et al., 2014). While controlling for variables already documented in the literature, our results show that the drivers of voluntary audit are that the company is not in financial distress, management has a need for tax reporting credibility, there is dispersed ownership, the company is growing, and management needs to ensure security of supply of goods or services from creditors. By unpacking the management's reasons for continuing to have the accounts audited following deregulation, this study extends the theory developed by Collis (2012) based on (larger) micro-companies in the UK.

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<sup>&</sup>lt;sup>3</sup> The rationale for using methodological triangulation is to reduce bias in data sources and methods and thus enhance the rigor of the study (Jick, 1979; Modell, 2009).

<sup>&</sup>lt;sup>4</sup> The interview schedules are shown in the Appendix.

The remainder of this paper is organized as follows. First, we develop our hypotheses by drawing on evidence from the literature and our interviews with key stakeholders. We then describe our methods and report our results. In the final section we present our conclusions.

# 2. Development of hypotheses

It can be argued that very small companies differ systematically from their larger counterparts in a number of ways that affect their willingness to voluntarily hire an auditor. First, as micro-companies are typically owner-managed, there is little scope for the traditional agency problems of information asymmetry between management and investors. Agency problems may, however, arise regarding equality between owners (Niskanen *et al.*, 2011).

Second, if bank finance is used, the lender is often the only outside stakeholder with a claim on the company's assets and an interest in seeing audited financial statements (Blackwell *et al.*, 1998; Berger & Udell, 2006). However, many micro-companies differ from their larger counterparts and are more likely to be financed by owner's equity with little or no bank finance (Berger & Udell, 1998). Therefore, micro-companies allow us to observe the extent to which entities with limited agency relationships are willing to voluntarily hire an auditor.

Third, micro-companies are very small by definition and are unlikely to have the resources to prepare the annual accounts required by law in our European setting. Therefore, they usually outsource this work to an external accountant (Collis & Jarvis, 2000; Collis, 2008). Apart from providing assurance to any lenders, this may create the need for voluntary audit to provide comfort about the credibility of the accounts to management, enhance control/security and the opportunity for non-audit services (Rennie *et al.*, 2003). Hiring an auditor may offer the opportunity to seek specific advice on financial matters (Rennie *et al.*, 2003), taxation and accounting matters (Seow 2001), and internal control (Abdel-Khalik, 1993), or simply general advice on managing the business. These needs are often accentuated in very small companies where owner-managers have little expertise or interest in areas outside the core business. This suggests that demand for voluntary audit may be explained by management's need for assurance regarding the quality of financial statements.

Consistent with related prior literature, we argue that the needs for voluntary audit in micro-companies may stem from two distinct, but not mutually exclusive, sources. While the majority of prior studies examine the role of information asymmetry between firms and their outside stakeholders (for example, Jensen & Meckling, 1976; Chow, 1982; Fama & Jensen, 1983; Watts & Zimmerman, 1986), other studies consider the needs of the firms and the entrepreneurs themselves (Abdel-Khalik, 1993; Seow, 2001; Rennie et al., 2003; Niskanen and Niskanen, 2006; Syrjä, 2010; Niskanen et al., 2011; Collis, 2012). We will elaborate on the key issues and findings from the latter stream of literature.

According to agency theory, the demand for auditing arises from information asymmetries and conflicts of interest between principals and agents (Jensen & Meckling, 1976; Watts & Zimmerman, 1986). The agency rationale is classically applied to large companies where the audited accounts mitigate information asymmetry between the investor (the principal) and the manager (the agent) arising from separation of ownership and control (Fama & Jensen, 1983). Perhaps not surprisingly, the vast majority of prior studies of the demand for audit focus on firms with hired managers and dispersed ownership, as in the case of publicly-held corporations.

These studies link the demand for auditing or audit quality to agency costs arising from the relationship between the management and providers of capital and/or the relationships between providers of equity capital and debt capital (e.g. Chow, 1982; Francis & Wilson, 1988; DeFond, 1992; Anderson *et al.*, 1993; Willenborg, 1999; Pittman & Fortin, 2004). A good example of these studies is Chow (1982), who examined the demand for external audit in listed US companies in the early 1900s when auditing was yet not mandatory. Consistent with agency theory, he found that firm size, capital structure and the number of debt covenants written in terms of accounting numbers were positively associated to the propensity of having an audit. He argued that firm size proxies for two effects: the decrease in managerial ownership (that is, increased separation of ownership and control) as firm size increases and the decrease in audit cost as firm size increases due to the fixed (start-up) costs of providing audits.

Much less research is devoted to the demand for audit in privately-held companies. This is particularly true for very small firms, which may face agency problems arising from the relationships between the

owners and providers of outside capital. Indeed, Power (1997) contends that in small companies, a principal is anyone who is distant from the actions of management and is unable to verify them, such as an external shareholder, lender or trade creditor.

Overall, the interview data revealed a number of management needs for voluntary audits beyond those examined in the literature (e.g. Seow, 2001; Rennie *et al.*, 2003; Collis 2012). For instance, the interviewees referred to factors such as supply security, firm size and growth, family relations, financial distress, need for advice and internal control, need to focus on core business, safety and company image, as well as the importance to the tax authority. While some of these factors are measurable from financial statements and other data available, others are not. In what follows, we concentrate on the factors for which we can find an operational measure from our archival data and present our hypotheses.

# Security of supply

Security of supply refers to management's need to ensure that the goods and services required for the company's operations are available. Unlike banks which have the economic power to require the financial statements to be audited in order to grant the loan, a single supplier providing trade credit cannot normally insist that the customer's financial statements are audited (Niskanen & Niskanen, 2006). However, a supplier has a control advantage due to the ability to stop deliveries of goods and services if the customer does not settle debts (Petersen & Rajan, 1997). Therefore, micro-entities may opt for voluntary audit to signal the credibility of the financial position and secure continuity of supply. The desire to provide assurance about the credibility of financial statements to users was one of the reasons for continuing audit in Rennie's *et al.* study (2003). This assertion is also supported by one of our interviewees.

'In the eyes of co-operation partners, the credibility of the firm increases when its financial statements have been audited. Many suppliers and other stakeholders go and check the [financial] information from Suomen Asiakastieto [a major credit rating agency in Finland], and therefore this information is like the firm's business card. If this information cannot be found, it says a lot about the firm and, if the information is delayed, then the question is, why?' (Bank manager A)

Considering the importance of security of supply, our first hypothesis is:

H1: Voluntary audit is more likely if the micro-company is dependent on its suppliers of goods and services.

# Financial expertise and advice

There are contrasting views on how the financial health of the company affects the use of auditing. Seow (2001) hypothesized that making accounting losses has a negative effect on management's decision to opt for an audit but did not find research results supporting this assertion. However, the bank managers we interviewed had clear views on the importance of the audit in reducing the risk of bankruptcy and financial distress. Their opinions are not surprising given their expertise in estimating financial risk and distinguishing firms that are a going concern from those where this is in doubt. This is apparent in the following quotations.

'Regarding bankruptcy risk, auditing may have importance because the likelihood of errors is lower when an outsider has checked the numbers. In a good accountant-auditor relationship, these outsiders may raise a warning flag and draw the entrepreneur's attention to the right things before it is too late.' (Bank manager A)

'[Auditing] can reduce bankruptcy risk in the sense that if the equity of the company becomes negative, then the auditor gives the entrepreneur a notice of it so that he or she must put some fresh money into the company... If the firm is financially distressed, it will not be saved by being audited, but the auditor can tell the entrepreneur to do this and that to avoid bankruptcy.' (Bank manager B)

These views were reinforced by comments from the owner-managers we interviewed, who emphasised their need for (financial) advice.

'The question is also about keeping everything under control, and this person gives some assurance to our business. I see it is a good thing. If something starts to go completely wrong, then at least he is likely to raise a warning flag.' (Owner-manager, architectural services business)

'I myself concentrate on the core activities. It is good to receive comments on financial matters. For example, the auditor draws my attention to receivables that have been left hanging.' (Ownermanager, home textile import business)

'I have had [name of auditor removed] since 1995, right from the beginning of my business. Someone recommended him to me, and the reason why I still have him is that I get terribly good advice from him in different matters concerning my business.' (Owner-manager, market research business)

However, financial and other advice from an auditor is not without cost. In contrast to the above arguments suggesting that the need for advice increases the likelihood to voluntarily hire an auditor, we can also expect that owner-managers of micro-companies in need of advice, especially when under financial distress, may forgo an audit simply because they cannot afford it or consider it not to be worth its price. Cost savings represented the single most important reason for reducing the level of assurance services purchased in Rennie's *et al.* study (2003). This is also in agreement with Seow's findings (2001). An interviewee expressed this as follows:

'I did not retain the auditor when the audit requirement was removed. His annual fee [X euros] was pretty high for his work which was quite straightforward... Had it not been so expensive, I would have continued using his services this year also.' (Entrepreneur, interior design and architecture business)

Given the need for and cost of hiring an auditor when a micro-company is financially distressed, we formulate our second hypothesis as follows:

H2: Voluntary audit is more likely if the micro-company is in financial distress.

# Anticipated growth and size

Some owner-managers we interviewed explicitly mentioned the possibility of firm growth as a reason for having a voluntary audit. This was connected to two factors: they anticipated that the company would soon exceed the size thresholds for audit exemption and they recognised that they would need advice as the company became larger and more complex to manage. Here are examples of how the owner-managers expressed their views.

'Well, the reason that I have an auditor is that if it ever happened that I received a really big order, then I would have to hire a couple of other guys and then there would be no problems [if the company exceeded the thresholds for audit exemption].' (Owner-manager, conservation and preservation business)

'We keep our eye on the possibility that our export business may grow some day when Europe recovers [from the economic downturn] and there will then be certain elements that may lead to the need for advice.' (Owner-manager, software business)

In light of these comments, we posit our third hypothesis:

H3: Voluntary audit is more likely if the micro-company is anticipating growth.

# Tax reporting credibility

Prior literature on tax audits suggests that audit adjustments by tax authorities are related to the firm's tax aggressiveness (Mills, 1998; Cho *et al.*, 2006) In addition, Ojala *et al.* (2015) provide evidence supporting the view that the likelihood of adjustments of taxable income by tax authority is lower when the financial statements of the company have been (voluntarily) audited by a certified public auditor. Seow (2001) found that the most frequently supplied non-audit services among small UK companies were advisory services on taxation and accounting matters. In the similar vein, a recent survey conducted by Syrjä (2010) shows that owner-managers of small firms in Finland tend to resort to their auditors and/or to their external accountants when they are in need of tax planning expertise.

The importance of external audit to the tax authority emerged in some of our interviews with the owner-managers and with one of the bank managers as shown below.

'Yes, I do believe that it is important to have some expertise when you are in contact with tax authority. In fact, I don't care to call them myself, but it is my auditor who makes the call... It is important to ask them the right questions with correct wording, thereby avoiding all unnecessary hassle.' (Owner-manager, market research business)

'Definitely! We have had at least ten years without any queries from the tax administration. It is of significant importance.' (Owner-manager, home textile import business)

'I guess the tax authorities rationally think that if the company has some outside control [by an auditor], then its financial figures are more reliable.' (Bank manager C)

'I have heard that some companies choose to be audited just because they believe that tax inspection is less likely when they have been audited... In my view, the thresholds for audit exemption [in Finland] are quite low, but nevertheless I remember some people here at the Tax Administration were very sceptical towards audit exemption saying that we can't trust anything anymore now that companies are not audited.' (Representative, Finnish Tax Authority)

Given these views, we have sufficient grounds for our fourth hypothesis:

H4: Voluntary audit is more likely if the micro-company wants to enhance the credibility of the financial statements for tax purposes.

## Family-related reasons and owners' equality

In most micro-companies the owner-manager is often the sole investor in the company. In cases where ownership is dispersed, other shareholders are usually family members (Abdel-Khalik, 1993). This may give rise to concerns about the family-owners' rights and equality. In response to those concerns, management may see it as advisable to hire an auditor with the aim to have an external 'referee' checking that nobody's rights are being breached (Niskanen *et al.*, 2011). The following comments given by some of the owner-managers we interviewed shed light on their concerns.

'My own children are on the board and therefore it's better that nothing can take place – even by mistake – that could violate the equality between the owners.' (Owner-manager, securities trading business)

'The most important thing is to have a competent accountant, but the auditor increases safety and credibility by checking that bookkeeping is OK. My grandfather gave me one lesson — he did not teach us many things, but nevertheless I managed to grow up in that family one way or the other. He said, "Listen to me, son, always remember to keep your papers in order. That is the starting point." (Owner-manager of several businesses)

We formulate our fifth hypothesis addressing this factor in the following way:

H5: Voluntary audit is more likely if ownership of the micro-company is dispersed among the family members.

These hypotheses are tested using quantitative archival data from a large sample of micro-companies in Finland. We will describe our sample and statistical model next.

#### 3. Methods

There were 145,707, 149,298 and 153,058 limited liability companies in Finland 2008, 2009 and 2010 respectively (Statistics Finland, 2012). Our sampling frame was the *Voitto+* and *Orbis* databases, from which we selected all micro-companies that provided the data for the variables in our analysis and did not exceed any two of the following three size criteria for two consecutive years (the size test for audit exemption in Finland):

- turnover EUR 0.20 million
- balance sheet total EUR 0.10 million
- average number of employees 3.

This allowed us to use the vast majority of the population of micro-companies in Finland. Information on auditors was purchased from *Asiakastieto Oy*, which is the leading rating agency and it also maintains the financial statement information in *Voitto*+ database. The final sample comprised 149,013 firm-years, representing approximately 50,000 Finnish micro-companies as shown in Table 2.

The empirical tests of our hypotheses require the estimation of the conditional probabilities of voluntary audit, whilst controlling for the effect of other relevant factors. Therefore, we construct the following logit regression model (1):

$$Prob(VOLAUDIT_{i,t}) = \frac{1}{1 + e^{-Z}}$$
 (1)

$$\begin{aligned} \textit{where} \quad Z = \quad & \alpha_0 + \alpha_1 SUPPLYSECURITY_{i,t-1} + \alpha_2 FINDISTRESS_{i,t-1} + \alpha_3 GROWTH_{i,t-1} \\ & \quad + \alpha_4 TAXCREDIBILITY_{i,t-1} + \alpha_5 DISPOWNERSHIP_{i,t-1} + \alpha_6 BANKFUNDING_{i,t-1} \\ & \quad + \alpha_7 AUDQUALITY_{i,t-1} + \alpha_8 SIZE + \alpha_9 Y2009_{i,t} + \alpha_{10} Y2010_{i,t} \end{aligned}$$

Table 3 shows the variables in the analysis. In the logit model (1), *VOLAUDIT* is the dependent variable and is coded as 1 if company *i* opted for voluntary audit in year *t*, and 0 otherwise. We adjust the standard errors for clustering on each company (Petersen, 2009). The independent variables of main interest are the binary indicator variables *SUPPLYSECURITY* and *FINDISTRESS*, as well as the continuous variables *GROWTH*, *TAXCREDIBILITY* and *DISPOWNERSHIP*.

The importance of suppliers of goods and services for firm operations is measured with the level of trade credit used, based on the idea that micro-companies with higher levels of trade credit are more dependent on their suppliers and thereby in need for ensuring supply security also in the future. To measure this, we use *SUPPLYSECURITY* which is coded 1 if the company has trade credit (scaled by total assets) above the industry-specific mean, and 0 otherwise. We know from Niskanen and Niskanen (2006) that trade credit levels differ across industries, which creates the need to use an industry-adjusted measure. Following Fama and French (1997), we use 48 industries as the basis for industry sector. With this

industry classification, we control for cross-industry differences in the level of trade credit that may relate to the market, size, distress risk and other industry-specific factors. In light of H1, we expect the coefficient of *SUPPLYSECURITY* to be positive.

We might expect micro-companies in financial distress to forgo audit simply because they cannot afford it. This would lead to a negative relationship between financial distress and opting for voluntary audit. However, financial distress may give rise to the need to hire an auditor in order to seek advice on how to get out of a difficult situation (Niemi *et al.*, 2012). This would lead to a positive relationship between financial distress and choosing voluntary audit. Finnish legislation requires financially distressed companies with negative equity to publicly register the lack of owner's funds. To measure the relationship between voluntary audit and financial distress, we include the variable *FINDISTRESS*, which is coded 1 if the company has negative equity in its balance sheet, and 0 otherwise. H2 does not predict any particular sign for its coefficient.

Regarding anticipated growth, H3 suggests that it is likely to be positively associated with voluntary audit. For example, fast growing micro-companies that expect to exceed the audit exemption thresholds might prepare for this by having a voluntary audit. We use the company's past growth measured by the percentage change in turnover from year *t*-1 to *t* as a proxy to anticipated growth, denoted by *GROWTH*.

To measure the threat of the micro-company coming under the scrutiny of the tax authority and a subject to a tax audit, adjustments of tax returns or similar (costly) tax-related consequences, we employ the variable *TAXCREDIBILITY*. It is defined as the complement of the company's tax aggressiveness, computed by one minus the effective tax rate of the company. The rationale for this is that the more tax aggressive the company is, the lower its effective tax rate; consequently, the greater the need to preserve the tax reporting credibility of the financial statements. Following prior tax research<sup>5</sup>, we compute the effective tax rate by the ratio of tax expense to pre-tax book income; to attain a positive relationship

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<sup>&</sup>lt;sup>5</sup> See Hanlon & Heitzman (2010) for a review of this literature.

with voluntary audit, we subtract the effective tax rate from one.<sup>6</sup> Thus, H4 predicts that the coefficient of *TAXCREDIBILITY* will be positive.

Based on our interview evidence, we hypothesise in H5 that when ownership of a micro-company is dispersed, it is very likely that the other investors are family members. To maintain their equality and to avoid any related problems, management may wish to hire an auditor. To measure this effect, we augment the model with *DISPOWNERSHIP*, which is coded 1 if none of the shareholders owns more than 24.99 percent of the company, and 0 otherwise. We expect the coefficient of this variable to be positive.

Finally, we augment our model with a number of control variables. *BANKFUNDING* is coded 1 if the company uses bank finance, and 0 otherwise. While most micro-companies are likely to be financed solely by owner's equity, those in financial distress may have needed to resort to a bank loan. Unlike trade credit, for which systematic variation is likely across industries<sup>7</sup>, we do not expect the level of bank debt to vary across industries in any systematic pattern. We posit that any level of bank debt will create a demand for voluntary audit (Blackwell *et al.*, 1998; Karjalainen, 2011), irrespective of the business sector. Therefore, we do not make an industry adjustment for *BANKFUNDING*.<sup>8</sup>

We control for the effect of the quality of the external auditor the micro-company had prior to 2008 when audit exemption became available. The structure of the market for auditing services in Finland continues to be based on a two-tier system of certification, as it is in other Nordic countries and in Germany. Interestingly, when Hay & Davis (2004) examine incorporated entities in New Zealand that have a voluntary audit, they find that most choose auditors of higher than the minimum quality, even though higher-quality auditors are more expensive. Following Knechel *et al.* (2008), we use top-tier

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<sup>&</sup>lt;sup>6</sup> For loss companies with negative pre-tax book income, we impose the restriction that effective tax rate is zero. Thus, in these companies *TAXCREDIBILITY* takes the value of 1.0.

<sup>&</sup>lt;sup>7</sup> For example, wholesale or retail companies tend to exhibit larger levels of trade credit than those providing services.

<sup>&</sup>lt;sup>8</sup> A very significant number of micro-companies in the sample are financed primarily by owner's equity with no bank debt at all. For example, in 68 percent of the 149,013 firm-year observations available for empirical tests the amount of bank debt is nil. To avoid potential estimation bias due these observations representing such a large portion in the sample, we use binary indicator variables rather than original continuous variables to measure the effects bank debt and trade credit on the propensity to have the accounts audited.

auditors as our measure of auditor quality. Companies paying for the highest level of the auditor quality are more likely to value the assurance of the external audit (Dedman *et al.*, 2013). *AUDQUALITY* is a binary variable that is coded 1 if the auditor the firm had when audit was mandatory possessed the highest auditor qualification and 0 otherwise.

All micro-companies in our sample are very small by definition and the cross-sectional variation in their size is also small. Nevertheless, we augment our model with *SIZE*, which is the size of company measured by the natural logarithm of total assets. This serves as a control for the effects of any agency relationships in our sample companies (see, for example, Collis, 2012).

Finally, to control for potential macro-economic changes we use *Y2009*, which is coded as 1 if the observation is from year 2009, and 0 otherwise. Similarly, we control for year 2010 with variable *Y2010*.

## (Insert Table 3 here)

Table 4 presents descriptive statistics for the independent variables used to test our hypotheses. The table reports the p-values of the differences between audited (n = 40,682) and unaudited (n = 108,331) companies for all variables used in the regression analyses using the t-test for the continuous variables and Fisher's exact test for the dummy variables. From the table we can see that micro-companies that have a voluntary audit are on average larger ( $SIZE\ 4.31$ ) than those that do not have an audit ( $SIZE\ 3.76$ ). In contrast, micro-companies that are not audited show slightly stronger growth (13 percent) than companies that have a voluntary audit (12 percent).

The use of bank debt (*BANKFUNDING*) is more common (37 percent) among the companies choosing voluntary audit than in companies opting for exemption (30 percent). Similarly, voluntarily audited companies are characterized by higher quality of auditing (*AUDQUALITY* 20 percent compared to 5 percent the preceding year), and by higher likelihood of information asymmetry (*DISPERSED OWNERSHIP* 0.3 percent compared to 0.1 percent).

In contrast, the level of trade credit exceeds the industry average more often in unaudited companies than in companies having a voluntary audit (*SUPPLYSECURITY* 25 percent and 23 percent respectively)

when the effects of other factors are not controlled. In addition, there is a higher frequency of negative equity in companies which are unaudited than in those having a voluntary audit (*FINDISTRESS* 16 percent compared to 12 percent).

## (Insert Table 4 here)

#### 4. Results

Table 5 shows a correlation matrix for the variables used in the regression analyses. It provides both Pearson and Spearman correlations. Voluntary audit correlates positively with high dispersion of ownership (*DISPOWNERSHIP*). In addition, the use of bank finance (*BANKFUNDING*), high auditor quality (*AUDQUALITY*) and total assets (*SIZE*) correlate positively with voluntary audit. All the above correlations are significant at the 1 percent level.

Contrary to our expectations, an above average level of trade credit (*SUPPLYSECURITY*), the presence of negative equity (*FINDISTRESS*), firm growth (*GROWTH*) and the complement of tax aggressiveness (*TAXCREDIBILITY*) correlate negatively with voluntary audit. However, it is well known that company size is an important driver of voluntary audit and that the correlation coefficient is a measure of the strength and direction of a linear relationship between two variables without controlling for relevant background factors. Therefore, we also take the partial effects of company size into consideration (not tabulated). We find that when company size (*SIZE*) is used as a covariate, the correlations of *SUPPLYSECURITY*, *GROWTH* and *TAXCREDIBILITY* with the voluntary audit decision turn positive, as expected. This provides weak univariate support for H1, H3 and H4. However, the company's financial distress status (*FINDISTRESS*) correlates negatively with voluntary audit even when firm size is used as a covariate (not tabulated).

# (Insert Table 5 here)

The results of the binary logit model are shown in Table 6 in two parts. First, when the model includes only our control variables, the model is highly significant (p < 0.001) and has a pseudo R<sup>2</sup> of 11.9 percent. The dependent variable, VOLAUDIT, is coded 1 if the company has a voluntary audit, and 0

otherwise. Therefore, the sign of the coefficients of the explanatory (predictor) variables indicate the direction of the impact on the likelihood of the company choosing voluntary audit. The table shows that the coefficients of the control variables for which we have sign expectations (BANKFUNDING, AUDQUALITY and SIZE) fall in line with our expectations.

The columns on the right of Table 6 show the results after augmenting the model with our test variables measuring entrepreneurs' internal needs for voluntary audit. It can be seen that the test variables contribute marginally to the overall explanatory power (pseudo R²) which is now 12.1 percent. Nevertheless, after controlling for background factors potentially affecting the audit decision, the regression coefficient for *SUPPLYSECURITY* is positive and significant. This suggests that, after controlling for other relevant factors, the likelihood of voluntary audit is higher in companies that have need for supply security, as measured by an above average level of trade credit for their industry. This is consistent with H1.

The sign of the coefficient of the variable measuring financial distress (*FINDISTRESS*) is negative suggesting that micro-companies that are in financial distress are less likely to choose voluntary audit than those that are not in financial distress. When we examine the liquidity level measured by quick ratio in year t-1 of financially distressed companies with negative equity (*FINDISTRESS* = 1), our (nontabulated) test results reveal that those financially distressed firms choosing a voluntary audit have significantly more liquidity than those which opt out from voluntary audit. (The z-value of the Wilcoxon rank sum test for the difference between these two groups is 5.5 with p < 0.001.) This finding supports the interpretation that voluntary audit decision may relate to the availability of sufficient funds for carrying out an audit. In other words, owner-managers whose companies are financially distressed tend to forgo audit because they cannot afford it (H2), which explains the negative coefficient of *FINDISTRESS*.

With regard to our remaining explanatory variables, *GROWTH*, *TAXCREDIBILITY* and *DISPOWNERSHIP*, the table shows that all three have significant positive coefficients (with p < 0.001). Thus, the findings are consistent with H3, H4 and H5.

Finally, we also report the VIF values for diagnosing collinearity. The low VIFs (which all fall clearly below 10.0) indicate that that we have no grounds to suspect that the results are affected by serious multicollinearity.

## (Insert Table 6 here)

When we perform a stepwise logit regression (not tabulated), the order of the explanatory variables according to their statistical contribution to the variation in the outcome variable (*VOLAUDIT*) are as follows: (1) the company is not in financial distress; (2) management has a need for tax reporting credibility; (3) there is dispersed ownership; (4) the company is growing; and (5) management needs to ensure security of supply of goods from creditors.

Because it is possible that the drivers of voluntary audit change from one year to another during the period 2008 to 2010, we examine and report annual results in Table 7. While the coefficient estimated for *FINDISTRESS* is consistently significant and negative throughout the three-year period examined, the statistical significances of the other test variables show some instability. For example, the coefficients estimated for of *SUPPLYSECURITY* and *DISPOWNERSHIP* are significant in 2010, but they are not so in 2008 when audits for the first time became voluntary for micro-companies. In contrast, the coefficients of *GROWTH* and *TAXCRIDIBILITY* are significant in 2008 (*GROWTH* also in 2009) but remain insignificant in 2010. Looking at the control variables (*BANKFUNDING*, *AUDQUALITY*, *SIZE*), we can see that their coefficients are significant consistently across the years examined.

equipment (PPE) as an alternative proxy for growth (instead of growth in sales). However, we find that it has a much weaker fit in the logit model. This is consistent with the view that in micro-companies, many of which

represent service industries, investment in PPE is not an important measure of size or growth.

<sup>&</sup>lt;sup>9</sup> In addition to past growth (measured by *GROWTH*), we examine and find that also the closeness to the thresholds of mandatory audit relate positively to the decisions to engage in audits. We define a firm to be close to threshold if any of the three words to relate the close to threshold.

One important conclusion that can be drawn from Table 7 is that the overall fit of the logit model becomes stronger over time. This is indicated by the monotonically increasing pseudo R<sup>2</sup> from 0.071 to 0.122 and further to 0.161. We find a significant increase in the predictive power of the annual models using the receiver operating characteristic (ROC) curve for each model, similar to Minuti-Meza (2013). A plausible explanation is that the data contains less noise as time goes by and the temporal distance from the audit law reform in 2007 increases. In other words, the 2008 data (immediately after audit exemption was introduced in Finland) may include more noise due to the tradition of the previous statutory requirement, and this seems to diminish over time. This interpretation is also supported by the negative trend of the indicator variables for the observation years in Table 6 (*YEAR2009* coefficient = -0.191; *YEAR2010*, coefficient = -0.414, both statistically highly significant), which are consistent with the negative trend in voluntary audit.

#### (Insert Table 7 here)

#### Additional tests

The impact of loss firms: To measure financial distress in our logit model, we used an indicator variable coded 1 for micro-companies with negative equity, and 0 otherwise. The reason for this definition was the requirement by Finnish law to publicly register the lack of owner's funds. As a robustness check, and to control for the effect of negative earnings on our measure of tax credibility (see footnote 4), we include an indicator variable for loss firms in our logit model. The (non-tabulated) results indicate that this indicator has a significant negative sign, which is consistent with our primary measure of financial distress. In addition, the findings for the test (and control) variables, including tax credibility, are qualitatively unchanged.

Immediate versus late quitters of voluntary audit: Table 2 shows a decreasing trend of voluntary audit across 2008-2010, which is also suggested by the negative coefficients of the indicator variables for years 2009 and 2010 in Table 6. This being the case, we compare the immediate and late quitting entities to see whether there are any systematic patterns that differentiate these two groups of companies. To do this, we compare the distributions of our independent variables for the subsample of micro-companies

(n = 21,992) that opted for audit exemption immediately after the law reform in 2008 with the subsamples that dropped the audit one or two years later (n = 4,049 and n = 1,954, respectively).

The results from *t*-tests for means (not tabulated) shows that micro-companies opting for audit exemption immediately had, on average, more often negative equity (*FINDISTRESS*), lower need to assure tax authorities (*TAXCREDIBILITY*), less likelihood of bank debt (*BANKFUNDING*), lower auditor quality in the year prior to abandoning audit (*AUDQUALITY*) and were smaller (*SIZE*) than those micro-companies which opted out later. These findings are consistent with our results from the logit regressions and provide further evidence that these factors are driving voluntary audit in micro-companies. The remainder of our hypothesis variables (*SUPPLYSECURITY*, *GROWTH* and *DISPOWNERSHIP*) did not show, on average, statistically significant differences between the two subsamples in this additional test.

#### 5. Conclusions

This study contributes to the literature by extending theory on the demand for voluntary audit in micro-companies and identifying new management drivers. It is set in Finland and covers the three-year period following the introduction of audit exemption in 2008. The institutional background relates to the debate over regulatory relaxation for micro-entities in the EU under the new Accounting Directive (Directive 2013/34/EU). Micro-companies are increasingly seen as the engines for growth in most countries, but they are also of significant economic importance to the small and medium-sized practices of accountants who service their needs. Therefore, the results of this research will not only be of interest to the owners and managers of the vast population of micro-companies, but also to those providing them with professional accounting and auditing services.

Our interviews with owner-managers of micro-companies reveal new insights into the internal needs that explain the demand for voluntary audit. These were incorporated in our hypotheses and tested with empirical data from some 50,000 micro-companies. Our results show that 32 percent of micro-companies initially opted for voluntary audit, but the proportion decreased monotonically over time to 23 percent. This supports studies of small companies in the UK, which document a trend away from

audit over time (Dedman *et al.*, 2014). Using our large sample archival data, our results show that the drivers of voluntary audit are, in order of explanatory power: (1) the company is not in financial distress, (2) management has a need for tax reporting credibility, (3) there is dispersed ownership, (4) the company is growing, and (5) management needs to ensure security of supply of goods from creditors. By identifying these specific internal reasons for continuing to have the accounts audited after the introduction of exemption, the research increases our understanding of the needs of very small microcompanies.

This study makes a number of specific contributions. It is the first to look at the drivers of voluntary audit in very small micro-companies, which are largely ignored in the auditing literature. In addition, it focuses on the crucial three-year period following the introduction of audit exemption. Previous studies have examined the effect of debt and the role played by audit in the agency relationship with external lenders in small and medium-sized companies, but our study provides insights into management's need for audited accounts in micro-companies.

The benefits provided by voluntary audit to owner-managers and external stakeholders of micro-companies are likely to be relatively similar across countries, particularly within the EU where the harmonization policies are bring about convergence of national accounting and auditing policies. Although we do not have grounds to suspect that the underlying drivers for voluntary audit would be substantially different outside Finland, the wider generalizability of our results to companies of the same size or larger could be confirmed by testing our model in other countries with the same or higher audit exemption thresholds.

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Table 1. Audit exemption thresholds in Finland and EU size thresholds

	Audit exemption in Finland	EU maxima for micro-entity	EU maxima for small company
Turnover	EUR 0.20m	EUR 0.70m	EUR 8.80m
Balance sheet total	EUR 0.10m	EUR 0.35m	EUR 4.40m
Average employees	3	10	50

**Table 2. Sample companies** 

	Audit-	exempt micro-compan	iies
Year	All	Not audited	Audited
2008	45,323	30,691 (67.7%)	14,632 (32.3%)
2009	50,501	36,735 (72.7%)	13,766 (27.3%)
2010	53,189	40,901 (76.9%)	12,288 (23.1%)
Total (firm-years)	149,013	108,331 (72.7%)	40,682 (27.3%)

Table 3. Demand for voluntary Audit: Variables in logistic regression (1)

Variable	Description
VOLAUDIT	Binary variable coded 1 if the company has a voluntary audit in year t, and 0 otherwise
SUPPLYSECURITY	Binary variable coded 1 if the company's trade payables scaled by total assets exceed the industry-specific mean at the end of year t-1, and 0 otherwise
FINDISTRESS	Binary variable coded 1 if the company has negative equity at the end of year t-1, and 0 otherwise
GROWTH	Percentage change in revenue from year t-1 to t
TAXCREDIBILITY	Max [(1- effective tax rate); 0], where effective tax rate = tax expense/pre-tax book income in year t-1
DISPOWNERSHIP	Binary variable coded 1 if none of the owners has more than 24.99% of the shares at the end of year t-1, and 0 otherwise
BANKFUNDING	Binary variable coded 1 if the company has external debt (bank) finance at the end of year t-1, and 0 otherwise
AUDQUALITY	Binary variable coded 1 if the auditor in year t-1 has the highest audit accreditation, and 0 otherwise
SIZE	Natural logarithm of total assets (in thousands of euros) at the end of year t-1
Y2009	Binary variable coded 1 if the observation is from year 2009, and 0 otherwise
Y2010	Binary variable coded 1 if the observation is from year 2010, and 0 otherwise

Table 4. Descriptive statistics for independent variables

Variables		All	Audit	ed	Differenc	e
			No	Yes	<i>p</i> -value	
N		149,013	108,331	40,682		
SUPPLYSECURITY	Mean	0.25	0.25	0.23	<.001	***
	Std	0.30	0.43	0.42		
FINDISTRESS	Mean	0.15	0.16	0.12	<.001	***
	Std	0.36	0.37	0.33		
GROWTH	Mean	0.13	0.13	0.12	0.014	**
	Std	0.62	0.64	0.57		
TAXCREDIBILITY	Mean	0.90	0.89	0.90	<.001	***
	Std	0.14	0.14	0.14		
DISPOWNERSHIP	Mean	0.002	0.001	0.003	<.001	***
	Std	0.04	0.03	0.05		
BANKFUNDING	Mean	0.32	0.30	0.37	<.001	***
	Std	0.47	0.46	0.48		
AUDQUALITY	Mean	0.09	0.05	0.20	<.001	***
	Std	0.28	0.21	0.40		
SIZE	Mean	3.91	3.76	4.31	<.001	***
	Std	1.20	1.16	1.22		
YEAR2009	Mean	0.34	0.34	0.34	0.787	
	Std	0.47	0.47	0.47		
YEAR2010	Mean	0.36	0.38	0.30	<.001	***
	Std	0.48	0.48	0.46		

# Notes:

For variable definitions, see Table 3

Statistical (two-tailed) significance (p-values) better than 0.001, 0.01, and 0.05 indicated by \*\*\*, \*\*, and \*

**Table 5. Correlation matrix** 

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1.VOLAUDIT	1.000	-0.025	-0.048	0.016	-0.029	0.019	0.059	0.235	0.192	-0.001	-0.070
		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	0.788	<.001
2. SUPPLYSECURITY	-0.025	1.000	0.124	-0.004	0.045	-0.002	0.017	0.000	-0.148	0.010	-0.006
	<.001		<.001	0.165	<.001	0.441	<.001	0.935	<.001	<.001	0.014
3. FINDISTRESS	-0.048	0.124	1.000	0.031	0.269	0.004	0.161	-0.011	-0.131	-0.001	0.022
	<.001	<.001		<.001	<.001	0.097	<.001	<.001	<.001	0.580	<.001
4. GROWTH	-0.007	-0.006	0.058	1.000	0.094	0.002	0.004	0.007	-0.059	-0.064	0.015
	0.008	0.021	<.001		<.001	0.339	0.102	0.011	<.001	<.001	<.001
5. TAXCREDIBILITY	-0.029	0.038	0.255	0.105	1.000	0.004	0.125	0.018	0.103	0.440	-0.830
	<.001	<.001	<.001	<.001		0.089	<.001	<.001	<.001	<.001	<.001
<b>6</b> . DISPOWNERSHIP	0.019	-0.002	0.004	0.001	0.004	1.000	0.005	0.013	0.026	0.000	-0.002
	<.001	0.441	0.097	0.659	0.089		0.040	<.001	<.001	0.965	0.533
7. BANKFUNDING	0.059	0.017	0.161	-0.016	0.125	0.005	1.000	0.011	0.278	0.007	-0.011
	<.001	<.001	<.001	<.001	<.001	0.040		<.001	<.001	0.005	<.001
8. AUDQUALITY	0.235	0.000	-0.011	-0.001	0.018	0.013	0.011	1.000	0.113	-0.027	-0.027
	<.001	0.935	<.001	0.684	<.001	<.001	<.001		<.001	<.001	<.001
9. SIZE	0.201	-0.148	-0.132	-0.096	0.104	0.029	0.277	0.121	1.000	0.012	-0.034
	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001
<b>10</b> . <i>Y</i> 2009	-0.001	0.010	-0.001	-0.048	0.440	0.000	0.007	-0.027	0.009	1.000	-0.533
	0.788	<.001	0.580	<.001	<.001	0.965	0.005	<.0001	0.001		<.001
<b>11</b> . <i>Y2010</i>	-0.070	-0.006	0.022	0.018	-0.830	-0.002	-0.011	-0.027	-0.031	-0.533	1.000
	<.001	0.014	<.001	<.001	<.001	0.533	<.001	<.001	<.001	<.001	

Notes

n = 149,013. See Table 3 for definitions of the variables. Pearson (Spearman) correlations below (above) the diagonal.

Table 6. Binary logit regression results for choice of voluntary audit estimated from pooled data with year fixed effects

Variables	Predicted	Coefficient	<i>p</i> -value	Coefficient	<i>p</i> -value		VIF
INTERCEPT	?	-2.338	<.001	-2.481	481 <.001		
SUPPLYSECURITY	+			0.031	0.038	**	1.04
FINDISTRESS	?			-0.217	<.001	***	1.13
GROWTH	+			0.037	<.001	***	1.02
TAXCREDIBILITY	+			0.184	<.001	***	1.10
DISPOWNERSHIP	+			0.543	<.001	***	1.00
BANKFUNDING	+	0.047	<.001	<.001 0.072		***	1.14
AUDQUALITY	+	1.468	<.001	<.001 1.471		***	1.02
SIZE	+	0.346	<.001	<.001 0.342		***	1.20
Y2009	?	-0.195	<.001	-0.191	<.001	***	1.40
Y2010	?	-0.416	<.001	-0.414	<.001	***	1.41
Model summary							
N		149,013		149,013			
Wald chi-square		11,449		11,558			
<i>p</i> -value		<.001***		<.001***			
-2 Loglikelihood		161,921		161,759			
Pseudo R <sup>2</sup>		0.119		0.121			

## Notes

See Table 3 for definitions of the variables

Statistical (two-tailed) significance (p-values) better than 0.001, 0.01, and 0.05 indicated by \*\*\*, \*\*, and \*

Table 7. Binary logit regression results for choice of voluntary audit estimated from annual cross-sectional data

	Pred. sign	Year	2008		Year	2009		Year	2010	
Variables		Coefficient	<i>p</i> -value		Coefficient	<i>p</i> -value		Coefficient	<i>p</i> -value	
INTERCEPT	?	-2.616	<.001	***	-2.433	<.001	***	-2.909	<.001	***
SUPPLYSECURITY	+	-0.036	0.154		0.035	0.160		0.101	<.001	***
FINDISTRESS	?	-0.254	<.001	***	-0.221	<.001	***	-0.172	<.001	***
GROWTH	+	0.073	<.001	***	0.044	0.014	**	-0.002	0.893	
TAXCREDIBILITY	+	0.550	<.001	***	-0.027	0.725		-0.046	0.580	
DISPOWNERSHIP	+	0.293	0.212		0.663	0.005	***	0.714	<.001	***
BANKFUNDING	+	0.052	0.023	**	0.076	0.001	***	0.094	<.001	***
AUDQUALITY	+	0.816	<.001	***	1.754	<.001	***	2.035	<.001	***
SIZE	+	0.322	<.001	***	0.323	<.001	***	0.375	<.001	***
Model summary										
n		45,323			50,501			53,189		
Wald chi-square		2,233			3,868			5,046		
<i>p</i> -value		<.001 ***	•		<.001 ***			<.001 ***		
-2 Log likelihood		54,646			54,721			51,522		
Pseudo R2		0.071			0.122			0.161		

## Notes

See Table 3 for definitions of the variables.

Statistical (two-tailed) significance (*p*-values) better than 0.001, 0.01, and 0.05 indicated by \*\*\*, \*\*, and \*.

### Appendix Interview schedules

#### Interviews with owner-managers of micro-companies (16)

Background information about the interviewee and the company:

- General education in general and whether education and/or training in business and accounting/auditing in particular
- Experiences as an entrepreneur (a short biography as entrepreneur)
- Industry and business model of the company
- Size of the company in terms of net sales, total assets and number of personnel
- Age of the company
- Legal form of the business and does it belong to a group of companies

Open-ended questions regarding motivation for being voluntary audited:

- 1. I'd like to start by asking you about the main motivation of why you use auditor on voluntarily basis?
- 2. Are there any other reasons why you use auditor on voluntarily basis?
- 3. Can you come up with anything else that has to do with the fact that you use auditor on voluntarily basis?

After the interviewee has nothing to add to the reasons for voluntary audit, then:

- What is the ownership structure of the company?
- How well are you aware of the roles of an auditor and external accountant?
- What are your experiences about tax filings and do you see that your auditor has affected the tax reporting?
- Describe your personal contacts with your auditor. Does the auditor provide you with advice?
- Have you outsourced accounting and/or preparation of financial statements to an external accountant?
- If so, please describe how the auditor and the external accountant interact.
- Are you aware of your annual audit fee? Is it at the correct level in your opinion? Why?
- Does your company have bank debt?
- How much trade credit does your company have?
- Does voluntary audit affect your access to funding?
- Is there anything else that you would like to add?

## **Interviews with bank managers (3)**

• General theme: How does voluntary audit affect credit decisions?

#### Interview with representative of the Finnish Tax Authority (1)

• General theme: Does voluntary audit affect the taxation process? If yes, how?