The relation between auditing and accounting timeliness in Swedish private firms

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Abstract

Purpose – The purpose of this study is to examine the relationship between auditing/non-auditing and accounting timeliness among Swedish private firms.

Design/methodology/approach – This paper uses regression analysis to test the relationship between auditing and two measurements of timeliness; lead time and late filing. The sample consists of Swedish private firms.

Findings – This paper finds that audited firms, when compared with unaudited firms, are significantly less timely. Moreover, greater profitability was associated with more timeliness but only for audited firms. The results of this paper also show that firms being audited by a big 4 auditor are significantly timelier than firms being audited by a non-big 4 auditor.

Practical implications – The findings in this paper suggests that one aspect of accounting quality, timeliness, does not seem to benefit from auditing in a Swedish context. There is a debate about whether the threshold levels in Sweden should be raised so that more firms voluntarily can opt out of audit. Those opposing a raised threshold level claim that auditing has positive effects on accounting quality and consequently that a raised level would have adverse effects. The findings in this paper do not support such a claim.

Originality/value – Little is known about timeliness in private firms compared to public firms and this paper fills that void. Contrary to prior research, findings show that unaudited firms in a Swedish regulatory setting actually are timelier than their audited counterparts. This questions one of the (presumed) benefits of auditing and should stimulate more research on this issue.

Keywords Auditing, Private firms, Accounting timeliness, Financial accounting regulation

Paper type Research paper

1. Introduction

In an accounting context, timeliness refers to the amount of time it takes to disclose financial information. Timeliness is a crucial qualitative criterion with consequences for the usefulness of financial accounting. If the financial information in financial statements is of high quality but not timely, then the information will be less relevant for stakeholder decision-making (IASB, 2018). The production of useful financial information is important from a societal perspective because it affects capital market efficiency and capital allocation, which in turn influences the prospects for economic growth.

Drivers of timeliness have been explored in prior research. The aim has generally been to investigate associations between company and/or institutional characteristics and the time

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it takes to provide financial information on the analyzed firms. Most prior studies within this research field have examined the timeliness of public firms (Afify, 2009; Al-Ghanem and Hegazy, 2011; Baatwah *et al.*, 2019; Conover *et al.*, 2008; Ghafran and Yasmin, 2018; Mathuva *et al.*, 2019; Meckfessel and Sellers, 2017; Newton and Ashton, 1989; Shin *et al.*, 2017; Wang and Song, 2006). In addition, some recent studies have instead analyzed the timeliness of private firms (Lukason and Camacho-Miñano, 2019; Selleslagh *et al.*, 2021).

There are several reasons to study private firms. First, they account for more than half of Europe's gross domestic product and represent more than 99% of all European firms (European Commission, 2021).

Moreover, as noted by Beuselinck *et al.* (2021), studying private firms can yield new insights of general interest given the particular characteristics of private firms, which include distinctive characteristics regarding regulatory settings and agency issues. It is, for example, impossible to study the effect of non-audit on timeliness in public firms, as all public firms are required by law to audit their financial statements. Private firms can, however, choose to opt out of audit, given that certain thresholds are not exceeded. The association between non-audit and timeliness is, thus, possible to study when the sample consists of audited as well as unaudited private firms.

A third reason to study private firms is that the demand for financial information differs between private and public firms. Private firms exhibit a lower level of information asymmetry between management and investors in comparison with public firms, which is why investor demand for accounting information is lower in private firms. This means that other factors than investor demand (at least in theory) should be relatively more influential on the timeliness in private firms.

Another difference between private and public firms is that the annual report contains new information in private firms. Annual reports of public companies do not, in most cases, reveal new information (all, or at least the majority of the information, in the annual report, has already been published in interim reports). Consequently, the content of the annual report and the timing of the release of the annual report are of less importance to public firms, as all or almost all information has already been disclosed. Public firms have less to win or lose on being prompt or slow with the release of the annual report. In private firms, however, the information in the annual report is usually unknown to external stakeholders before it is released. Thus, the timeliness (or lack of timeliness) has a greater impact on information asymmetry between the (private) firm and external stakeholders. Private firms have, moreover, not a public calendar which states (in advance, in most cases before the end of the fiscal year) at what date the annual report will be made public, contrary to public firms. Public firms can of course depart from the release dates stated in the public calendar, but they refrain from doing so, as that would send negative signals to the capital market. Because of this, private firms have a much higher level of discretion when it comes to choosing the release of the annual report after the end of the fiscal year.

To sum up, in general, on the one hand, the *demand* for accounting information is lower in private firms but, on the other hand, the *supply* of accounting information in private firms' annual reports is more informative (and valuable), as it contains new information.

As private firms' annual reports contain new information combined with the fact that private firms' choice of annual report release date is much more flexible, it is reasonable to argue that the conditions and logics that private and public firms work under differ so much that insights from studies based on public firms on what influences timeliness might be of less relevance for private firms.

Even though timeliness in private firms is of particular interest in view of the differences between private and public firms reviewed above, little is yet known about timeliness in

private firms (compared to public firms). The aim of the current paper is to fill that void. More specifically, this paper focuses on the relationship between auditing/non-auditing and timeliness using a sample of Swedish private firms. Of the prior studies within this field that have analyzed timeliness in private firms (Clatworthy and Peel, 2016; Escaloni and Mareque, 2021; Lukason and Camacho-Miñano, 2019, 2020, 2021; Luypaert *et al.*, 2016; Selleslagh *et al.*, 2021), only two (Clatworthy and Peel, 2016; Luypaert *et al.*, 2016) considered the association between audit, non-audit and timeliness. This is somewhat surprising given that auditing is a potent corporate governance mechanism. A plethora of research has shown the important role of the audit and the auditor (in public and private firms) on accounting behavior (Cano-Rodríguez, 2010; Clatworthy and Peel, 2013) as well as on other business-related phenomena such as access to and the cost of capital (Chou *et al.*, 2014; Francis *et al.*, 2017; Huq *et al.*, 2022), but not specifically on timeliness.

If we want to learn more about timeliness in private firms, then we should arguably consider the role of the audit, as it is a key corporate governance mechanism.

Sweden provides an interesting setting for analyzing timeliness because of regulatory differences between Sweden and other European countries. First, Sweden has compared to other European countries considerably lower threshold levels for when firms are legally permitted to opt out of audit. Second, Swedish firms have to file their annual report no later than seven months after the closing date of the fiscal year (which is sooner than in many other European countries). The described regulatory differences make the Swedish setting unique.

The results of the empirical analyses of a sample of Swedish private firms reported in the current paper show that audited firms, when compared with unaudited firms, have a significantly longer lead time, that is, a longer time between the end of the fiscal year and the filing of the annual report. We do, however, not document a significant difference in late filings, that is, filings after the legal deadline, between audited and unaudited firms. When we run separate analyses on audited and unaudited firms, we see that there is a significant negative relationship between profitability and timeliness – but only for audited firms. More profitable audited firms tend to file their annual reports sooner and less profitable audited firms tend to file their annual reports later. One reason for this difference could be that audited firms – to a higher extent than unaudited firms – have external capital providers which incentivizes audited firms to report good news (i.e. high profitability) promptly and bad news (i.e. low or negative profitability) slowly. We finally show that firms being audited by a big 4 auditor are significantly timelier than firms being audited by a non-big 4 auditor.

The remainder of the paper is organized as follows. In Section 2, we develop six hypotheses based on a discussion of relevant prior empirical results and theory. In Section 3, our sample and research methods are described. In Section 4, the empirical results are reported in, and in Section 5, we conclude the paper.

2. Definitions, previous research and development of hypotheses

2.1 A definition of timeliness

There are several potential ways of measuring accounting timeliness. A common proxy for timeliness has in previous studies been the audit report lag (Ghafran and Yasmin, 2018), which is the time between the fiscal year-end and the audit report date. In this paper, we use *lead time* (in line with Clatworthy and Peel, 2016) and *late filing* (in line with Luypaert *et al.*, 2016) as two measurements of timeliness. Lead time is the time between the end of the fiscal year and the filing of the annual report. A shorter lead time is considered timelier. Lead time is, hence, a continuous variable. Late filing occurs when the filing of the annual report exceeds the legal deadline for submission, which in Sweden is seven months. Consequently, non-late filing occurs when the filing of the annual report is within the legal deadline for

submission. Late filing is considered untimely and non-late filing is considered timely. Late filing is, hence, a dichotomous variable.

2.2 Previous research

As already noted in the introduction, most prior research on accounting timeliness has been based on data from public firms. Recently, however, a couple of studies have investigated timeliness among private firms in the UK (Clatworthy and Peel, 2016), Belgium (Luypaert *et al.*, 2016; Selleslagh *et al.*, 2021), Estonia (Lukason and Camacho-Miñano, 2019, 2020, 2021) and Spain (Escaloni and Mareque, 2021).

Using a sample of Belgian private firms, Selleslagh *et al.* (2021) found a negative association between financial health and late filing of financial statements (i.e. firms that were financially healthy were to a lower extent late filers). The results were, however, the opposite for firms that consistently filed late; there was a positive association between firms' financial health and filing late for the group of firms who filed late consistently in the past (i.e. in this group, firms that were financially healthy were to a higher extent late filers). These results indicate that filing of financial statements after the legal deadline is not necessarily driven by the desire to delay the release of negative information.

Lukason and Camacho-Miñano (2019) found that, among Estonian (mainly) private firms, lower profitability, lower liquidity and a higher risk of bankruptcy were associated with late filing of the annual report. Lukason and Camacho-Miñano (2020), using a sample of private Estonian small and medium-sized enterprises (SMEs), focused on how corporate governance characteristics (though not auditing) were associated with late filings. The results showed that women on the board, older management, longer board member tenure, a larger proportion of share ownership among board members, fewer business ties and absence of a majority owner were associated with a smaller probability of late filing. The same authors (Lukason and Camacho-Miñano, 2021) later documented a relationship between previous late filing behavior (i.e. filing of the annual report after the legal deadline) and financial distress with late filing, again analyzing Estonian SMEs. In separate analyses, firm size and age also played a role.

Escaloni and Mareque (2021) examined the audit report lag among a sample of unlisted audited Spanish SMEs as well as non-SMEs (i.e. large firms). Audit report lag is the time between a firm's fiscal year-end and the signing of the audit report. The results showed that the only two factors that were associated with audit report lag in both SMEs and non-SMEs were crisis/recovery years and audit opinion. There was a longer audit report lag after the 2008 financial crisis (i.e. more recovery years) than during the financial crisis and also a longer audit report lag for firms receiving a modified audit opinion.

The only studies to consider the association between audit/non-audit and timeliness is the study by Clatworthy and Peel (2016), who examined small private UK firms, and the study by Luypaert *et al.* (2016), who examined small private Belgian firms. One of the main findings in both studies was that audited (when compared to unaudited) firms filed the annual report sooner (i.e. had a shorter lead time) and were less likely to file after the statutory deadline.

In addition, Clatworthy and Peel (2016) showed that (among UK firms) other factors such as firm age, financial leverage, liquidity, accounting loss in the income statement, size, number of board members and shareholders, the value of deferred tax liability in the balance sheet (a zero value indicates a perfect alignment between the financial reporting and tax roles of accounting and is expected when firms are preparing annual reports only for tax purposes, rather than to satisfy demand by external capital providers), historical filing behavior (late or on time), firm complexity and profit margin were related to when the

annual report was filed. Likewise, Luypaert *et al.* (2016) showed that (among Belgian firms), in addition to audit/non-audit, also financial leverage, size, accounting loss in the income statement, distress level, historical filing behavior (late or on time), the existence of expired debt and firm age were all related to when the annual report was filed.

2.3 Theoretical framework and development of hypotheses

Prior research suggests that the audit mechanism is related to one type of accounting behavior in private firms; the choice of content in financial reports (Cano-Rodríguez, 2010; Clatworthy and Peel, 2013). We hypothesize that the audit mechanism also plays a role in another aspect of accounting behavior in private firms; the choice of when financial reports should be released (i.e. the timing decision). As the relationship between audit/non-audit and timeliness is insufficiently researched, we choose to focus our attention on the role of auditing when we analyze our sample of Swedish private firms.

2.3.1 Audit/non-audit of the annual report and timeliness (H1a and H1b). Prior studies on timeliness have not examined the role of auditing/non-auditing, with Clatworthy and Peel (2016) and Luypaert *et al.* (2016) as the only exceptions. They found that audited firms in the UK (Clatworthy and Peel, 2016) and Belgium (Luypaert *et al.*, 2016) filed their annual reports sooner and were less likely to file after the statuary deadline in comparison with their non-auditing counterparts.

In line with past studies (Clatworthy and Peel, 2016; Luypaert *et al.*, 2016), we will investigate the relationship between audit/non-audit and timeliness but in a Swedish legal context and on Swedish private firms. There are some regulatory/institutional differences between Sweden, the UK and Belgium, which are important here and add to the contribution of this particular study. Sweden has considerably lower threshold levels for when firms are legally permitted to opt out of audit. In Sweden, only micro firms can opt out of audit, while in the UK and Belgium, micro firms, small firms and even (depending on the definition) medium-sized firms have that option. Firms (or limited liability firms to be more specific) in Sweden are not subject to mandatory audits – and can, thus, choose to opt out of audit – if they on their balance sheet date for two consecutive years at maximum exceed the limits of one of these three criteria: 150,000 Euros in total assets, 300,000 Euros in net turnover and three employees (The Swedish Companies Act/Aktiebolagslagen, 2005, 9:1). The UK and Belgian firms analyzed by Clatworthy and Peel (2016) and Luypaert *et al.* (2016) were subject to considerably (10–30 times) higher threshold levels (Accountancy Europe, 2021) [1].

The fact that audits in Sweden (contrary to the UK and Belgium) are voluntary only for micro firms could potentially drive the results. It is, however, difficult to know a priori whether this regulatory difference between Sweden and the UK/Belgium will reinforce, weaken or even reverse the relationship between audit/non-audit and timeliness found in the UK and Belgium.

Another difference is that Swedish firms have to file their annual report no later than seven months after the closing date of the fiscal year. In the referred UK study (Clatworthy and Peel, 2016), the corresponding period was 9–10 months. In the referred Belgian study (Luypaert *et al.*, 2016), the corresponding formal period was seven months, but as administrative sanctions only came into effect if the annual report was filed more than eight months after the closing date of the fiscal year, the informal deadline was eight rather than seven months. In Sweden, late filers face sanctions if the annual report is a single day late. Again, it is difficult to predict beforehand whether this regulatory difference could drive the results and if so in what direction.

Even though there are some regulatory differences between Sweden and the UK/Belgium that could produce differences in the results between studies, we expect on balance – in line with the results reported by Clatworthy and Peel (2016) and Luypaert *et al.* (2016) – that

Swedish audited firms file their annual reports in a timelier manner than their unaudited counterparts. We, thus, expect that audited firms exhibit a shorter lead time between the end of the fiscal year and the filing of the annual report and also that audited firms are less likely to file the annual report after the statuary deadline. This leads us to our first two hypotheses:

H1a. There is a negative association between lead time and being audited.

H1b. There is a negative association between late filing and being audited.

2.3.2 Big 4/non-Big 4 audit of the annual report and timeliness (H2a and H2b). A number of studies have shown a positive relationship between being audited by a big auditing firm and timeliness among both public (Leventis *et al.*, 2005; Meckfessel and Sellers, 2017; Owusu-Ansah and Leventis, 2006; Shin *et al.*, 2017) and private firms (Escaloni and Mareque, 2021). A suggested reason for why being audited by a bigger auditing firm leads to more timeliness is that bigger auditing firms have larger resources (e.g. more personnel and more specialists) to ensure that the audit is completed in less time. Bigger auditing firms also have greater incentives to ensure that the value of their brand is maintained (Khurana and Raman, 2004; Palmrose, 1988), and this could potentially lead to direct or indirect pressures on bigger auditing firms' clients to file their annual reports quickly and within the legal deadline for submission. This leads us to the following two hypotheses:

H2a. There is a negative association between lead time and being audited by a Big 4 auditing firm.

H2b. There is a negative association between late filing and being audited by a Big 4 auditing firm.

2.3.3 Good news in the annual report and timeliness (H3a and H3b). We finally explore whether good or bad news, measured as high or low profitability, in the annual report is associated with lead time. On the one hand, in line with proprietary cost theory (Li *et al.*, 2018; Scott, 1994; Verrecchia, 1983), firms will (all else held equal) disclose mandatory information as late as possible if it is regarded as commercially sensitive, for example, if the information can increase competition. Proprietary cost theory, thus, suggests that we can expect firms to file later given that the reported profitability in the annual report is high for the simple reason that a high reported profitability potentially attracts new competitors. On the other hand, in line with agency theory (Jensen and Meckling, 1976), because of information asymmetries between on the one hand the manager and the owners and on the other hand between the firm/the owners and external capital suppliers (banks and suppliers of goods and services), firms are incentivized to make good news such as high profitability public as soon as possible through prompt filing of the annual report. Studying the relationship between profitability and timeliness, thus, provides us with an opportunity to put these two theories to test.

There is reason to believe that firms opting out of audit have chosen to do so because of an absence of agency conflicts between management and the owners and/or between the firm/the owners and external capital providers (Dedman *et al.*, 2014; Haapamäki, 2018). Given these presumptions, unaudited firms will focus on reducing the proprietary costs caused by financial information (thus delaying the release of financial reports when the profitability is high or quickening the release when the profitability is low) rather than using financial information as a tool to handle small or non-existing information asymmetries. We, therefore, hypothesize the following:

H3a. There is among unaudited firms a positive association between lead time and reported profitability.

Firms with larger information asymmetries can be expected to have audited annual reports, as the audit mitigates the problems caused by these information asymmetries. Audited firms are, thus, incentivized to release good news such as a high profitability promptly so that it reaches the principals, that is, owners and/or external capital suppliers, as soon as possible (and conversely, audited firms are incentivized to release negative information as late as possible). Audited firms also take proprietary costs into consideration (e.g. that a quicker release of good news potentially could lead to more competition), but on balance, we hypothesize that audited firms' decision on when to file the annual report and make the information in the report public, to a higher extent is driven by incentives related to information asymmetries. This leads us to the next hypothesis:

H3b. There is among audited firms a negative association between lead time and reported profitability.

3. Data and methodology

3.1 Sample and data collection

The population under scrutiny in this paper is Swedish private limited liability firms that have filed their 2017 annual report. To gather a representative sample, we used Retriever, a database which contains data on and annual reports of all Swedish limited liability firms. The sample choice was made via stratified random sampling according to size.

Firms in the financial sector, firms with missing data and firms with zero assets were excluded. After this exclusion, the population consisted of 447,361 Swedish private limited liability firms. To obtain a representative sample in terms of size, a stratified sample was used. First, all firms were divided into four different strata. Thereafter, a random selection was made in each stratum. In total, the sample consists of 1,000 firms. The sample represents all Swedish private limited liability firms, that is, not just firms that can opt out of audit. The investigated subject is the relation between audit and timeliness, regardless of whether the sample firms' audit is mandatory or voluntary.

All data, except for the filing date, were collected from the database Retriever. Data on when the annual report was filed were collected manually from the first page of the annual report.

IBM SPSS Statistics 27 was used for statistical analysis of the gathered empirical data.

3.2 Dependent variables and the operationalization of the dependent variables

We use two measurements of the dependent variable timeliness: LEAD TIME and LATE FILING. LEAD TIME is the time, measured in days, between the end of the fiscal year and the filing of the annual report. A shorter LEAD TIME is the same as timelier information. Thus, LEAD TIME is a continuous variable. LATE FILING occurs when the filing of the annual report exceeds the legal deadline for submission, which in Sweden is seven months. If the annual report is filed later than seven months after the end of the fiscal year, then the firm is considered as a late filer. LATE FILING is considered untimely and non-late filing, that is within the legal deadline, is considered timely. Thus, LATE FILING is a dichotomous variable; filing can either be late or on time. LEAD TIME is the dependent variable when testing *H1a*, *H2a*, *H3a* and *H3b*, whereas LATE FILING is the dependent variable when testing *H1b* and *H2b*.

3.3 Independent variables and the operationalization of the independent variables

The main independent research variables used to test our hypotheses are AUDIT (*H1a* and *H1b*), which is a binary variable taking the value of 1 if the annual report was audited and 0 otherwise; BIG 4 (*H2a* and *H2b*), which is a binary variable taking the value of 1 if the annual report was audited by a Big 4 auditing firm and 0 otherwise; and PROFITABILITY (*H3a* and *H3b*), which measures the return on total assets.

We also consider a number of independent control variables which, according to prior studies (Clatworthy and Peel, 2016; Escaloni and Mareque, 2021; Luypaert *et al.*, 2016; Owusu-Ansah, 2000; Owusu-Ansah and Leventis, 2006), are related to timeliness. We control for firm size (proxied by ASSETS), financial leverage (proxied by DEBT), industry (proxied by MANUFACTURING), the last month of the fiscal year (proxied by MONTH), the size of the annual report (proxied by PAGES) and how long the firm has existed (proxied by FIRM AGE). ASSETS is the natural log of total assets. DEBT is debt to total assets. MANUFACTURING is an industry dummy variable that is coded 1 if the firm is a manufacturer and 0 otherwise. MONTH is a dummy variable that is coded 1 the firm has December as the last month of the fiscal year and 0 otherwise. PAGES is the number of pages in the annual report. FIRM AGE is the time between the initial creation of the firm and year 2017 (Table 1).

3.4 Hypotheses testing

To examine the relationship between audit-related factors and timeliness of the firms in our sample, formalized in *H1a*, *H1b*, *H2a*, *H2b*, *H3a* and *H3b*, we estimated the following cross sectional regression Models A–E:

We estimate the following Model A to test our *H1a*:

$$\begin{aligned}\text{LEAD TIME} = {} & \alpha_0 + \beta_1 \text{AUDIT} + \beta_2 \text{PROFITABILITY} + \beta_3 \text{ASSETS} + \beta_4 \text{DEBT} \\ & + \beta_5 \text{MANUFACTURING} + \beta_6 \text{MONTH} + \beta_7 \text{PAGES} + \beta_8 \text{FIRM AGE} \\ & + \varepsilon\end{aligned}$$

We estimate the following Model B to test our *H1b*:

$$\begin{aligned}\text{LATE FILING} = {} & \alpha_0 + \beta_1 \text{AUDIT} + \beta_2 \text{PROFITABILITY} + \beta_3 \text{ASSETS} + \beta_4 \text{DEBT} \\ & + \beta_5 \text{MANUFACTURING} + \beta_6 \text{MONTH} + \beta_7 \text{PAGES} \\ & + \beta_8 \text{FIRM AGE} + \varepsilon\end{aligned}$$

We estimate the following Model C to test our *H2a* and *H3b*:

$$\begin{aligned}\text{LEAD TIME} = {} & \alpha_0 + \beta_1 \text{BIG 4} + \beta_2 \text{PROFITABILITY} + \beta_3 \text{ASSETS} + \beta_4 \text{DEBT} \\ & + \beta_5 \text{MANUFACTURING} + \beta_6 \text{MONTH} + \beta_7 \text{PAGES} + \beta_8 \text{FIRM AGE} \\ & + \varepsilon\end{aligned}$$

We estimate the following Model D to test our *H2b*:

$$\begin{aligned}\text{LATE FILING} = {} & \alpha_0 + \beta_1 \text{BIG 4} + \beta_2 \text{PROFITABILITY} + \beta_3 \text{ASSETS} + \beta_4 \text{DEBT} \\ & + \beta_5 \text{MANUFACTURING} + \beta_6 \text{MONTH} + \beta_7 \text{PAGES} \\ & + \beta_8 \text{FIRM AGE} + \varepsilon\end{aligned}$$

Variable name	Variable description	Predicted sign
Dependent variables		
LEAD TIME	Number of days between the end of the fiscal year and the filing of the annual report	Dependent variable
LATE FILING	Dummy variable that is coded 1 if the filing of the annual report exceeds the legal deadline for submission (more than seven months after the end of the fiscal year) and 0 otherwise	Dependent variable
Independent research variables		
AUDIT	Dummy variable that is coded 1 if the annual report was audited and 0 otherwise	− (*H1a*) − (*H1b*)
BIG 4	Dummy variable that is coded 1 if the annual report was audited by a Big 4 auditing firm and 0 otherwise	− (*H2a*) − (*H2b*)
PROFITABILITY	Return on total assets	+ (*H3a*) − (*H3b*)
Independent control variables		
ASSETS	Natural log of total assets	Control variable
DEBT	Debt to total assets; the debt to total assets ratio has been capped with a minimum of 0% and a maximum of 100%	Control variable
MANUFACTURING	Industry dummy variable that is coded 1 if the firm is a manufacturer and 0 otherwise	Control variable
MONTH	Dummy variable that is coded 1 the firm has December as the last month of the fiscal year and 0 otherwise	Control variable
PAGES	The number of pages in the annual report	Control variable
FIRM AGE	The time between the initial creation of the firm and year 2017	Control variable

Table 1.
Variable name, variable description and predicted sign

We estimate the following Model E to test our *H3a*:

$$\text{LEAD TIME} = \alpha_0 + \beta_1 \text{PROFITABILITY} + \beta_2 \text{ASSETS} + \beta_3 \text{DEBT} + \beta_4 \text{MANUFACTURING} + \beta_5 \text{MONTH} + \beta_6 \text{PAGES} + \beta_7 \text{FIRM AGE} + \varepsilon$$

When using the continuous dependent variable LEAD TIME – which we do in Models A, C and E – we rely on linear regression. When using the dummy dependent variable LATE FILING – which we do in Models B and D – we rely on logit regression.

3.5 Descriptive statistics

3.5.1 Pearson correlation. The relationship between the independent variables was analyzed using Pearson product-moment correlation coefficients. The correlation coefficient matrix (Table 2) reports that not any of the pairwise correlation coefficients exceed the threshold value of 0.8 or −0.8, suggesting that the multicollinearity problem is limited (Gujarati, 2009).

3.5.2 Descriptive statistics of the dependent variables. Tables 3 and 4 provide descriptive statistics for the continuous dependent variable LEAD and for the categorical dependent variable LATE FILING, respectively.

Table 2.
Pearson product-moment correlation matrix for independent variables used in Models A and B (n = 1,000)

Variables	AUDIT	PROFIT-ABILITY	ASSETS	DEBT	MANU-FACTURING	MONTH	PAGES	AGE
AUDIT								
Pearson correlation	1							
Significance (two-tailed)								
PROFITABILITY								
Pearson correlation	0.044	1						
Significance (two-tailed)	0.169							
ASSETS								
Pearson correlation	0.550**	0.188**	1					
Significance (two-tailed)	0.000	0.000						
DEBT								
Pearson correlation	0.234**	−0.164**	0.199**	1				
Significance (two-tailed)	0.000	0.000	0.000					
MANUFACTURING								
Pearson correlation	0.022	−0.046	0.013	−0.039	1			
Significance (two-tailed)	0.494	0.147	0.679	0.218				
MONTH								
Pearson correlation	0.034	−0.001	0.067*	0.004	0.017	1		
Significance (two-tailed)	0.284	0.969	0.035	0.893	0.600			
PAGES								
Pearson correlation	0.341**	−0.001	0.527**	0.146**	0.060	0.091**	1	
Significance (two-tailed)	0.000	0.986	0.000	0.000	0.060	0.004		
AGE								
Pearson correlation	0.202**	−0.018	0.209**	−0.097*	0.054	−0.036	0.140**	1
Significance (two-tailed)	0.000	0.559	0.000	0.002	0.088	0.260	0.000	

Notes: **Correlation is significant at the 0.01 level (two-tailed), *correlation is significant at the 0.05 level (two-tailed)

As revealed in Table 3, the mean number between the end of the fiscal year and filing of the annual report is 163.9 days. There is a considerable variation in lead time and the standard deviation is 58.2 days. Table 4 shows that 89.4% of the sample firms file their annual report within the legal deadline (i.e. within seven months after the end of the fiscal year), while 10.6% of the sample firms are late filers.

3.5.3 Descriptive statistics of the independent variables. Tables 5 and 6 outline descriptive statistics of the continuous and categorical independent variables, respectively. The mean value of the natural log of total assets is 7.3, and the mean value of debt to assets amounts to 0.5. The mean number of pages in the annual report is 7.0, and the mean firm age is 12.3 years. Of the sample firms, 43.8% are audited, 5.6% are manufacturers and 64.6% have December as the last month of the fiscal year. Of the audited firms, 35.2% are audited by a big 4 auditing firm.

3.5.4 Descriptive statistics of audited and unaudited firms. Table 7 provides descriptive statistics for audited and unaudited firms. As revealed in Table 7, the mean number of days between the end of the fiscal year and filing of the annual report is 169 for audited and 160 for unaudited firms. Moreover, 9.6% and 11.4% of the audited and unaudited firms, respectively, were late filers. The descriptive comparison indicates that audited firms are larger, carry more debt, have longer annual reports, have existed for a longer time, to a higher extent are manufacturers and more often have December as the last month of the fiscal year.

4. Results

In Table 8, we report the results of the multivariate and logistic regression analyses (Models A–E) of timeliness. Beta coefficients and *p*-values of all independent variables in the

Table 3. Descriptive statistics of the continuous dependent variable

Variables	*N*	Mean	SD
Continuous dependent variable			
LEAD TIME	1,000	163.9	58.2

Table 4. Descriptive statistics of the categorical dependent variable

Variables	*N*	%
Categorical dependent variable		
LATE FILING		
– Late (not within the legal deadline)	106	10.6
– Within the legal deadline	894	89.4
Total	1,000	100

Table 5. Descriptive statistics of the continuous independent variables

Variables	*N*	Mean	SD
Continuous independent control variables			
ASSETS	1,000	7.3	2.0
DEBT	1,000	0.5	0.3
PAGES	1,000	7.0	3.0
FIRM AGE	1,000	12.3	13.5

Variables	*N*	%
Independent research dummy variables		
AUDIT		
– Audited firm/annual report	438	43.8
– Unaudited firm/annual report	562	56.2
Total	1,000	100
BIG 4		
– Audited by Big 4 firm	154	35.2
– Audited by non-Big 4 firm	284	64.8
Total	438	100
Independent control dummy variables		
MANUFACTURING		
– Manufacturing industry	56	5.6
– Other industry	944	94.4
Total	1,000	100
MONTH		
– December as the last month of the fiscal year	646	64.6
– Other month as the last month of the fiscal year	354	35.4
Total	1,000	100

Table 6. Descriptive statistics of the categorical independent variables

	Audited firms			Non-audited firms		
Variables	*N*	Mean	SD	*N*	Mean	SD
Continuous dependent variable						
LEAD TIME	438	169	46.9	562	160	65.5
Categorical dependent variable	*N*	%		*N*	%	
– Late (not within the legal deadline)	42	9.6		64	11.4	
– Within the legal deadline	396	90.4		498	88.6	
Total	438	100		562	100	
Continuous independent control variables	*N*	*Mean*	*SD*	*N*	*Mean*	*SD*
ASSETS	438	8.6	1.9	562	6.3	1.5
DEBT	438	0.6	0.3	562	0.4	0.3
PAGES	438	8.1	4.1	562	6.1	1.1
FIRM AGE	438	15.4	14.9	562	9.9	11.2
Independent control dummy variables	*N*	%		*N*	%	
MANUFACTURING						
– Manufacturing industry	27	6.2		29	5.2	
– Other industry	411	93.8		533	94.8	
Total	438	100		562	100	
MONTH						
– December as the last month of the fiscal year	291	66.4		355	63.2	
– Other month as the last month of the fiscal year	147	33.6		207	36.8	
Total	438	100		562	100	
Independent research dummy variables	*N*	%				
BIG 4						
– Audited by Big 4 firm	154	35.2				
– Audited by non-Big 4 firm	284	64.8				
Total	438	100				

Table 7. Descriptive statistics of audited and unaudited firms

Table 8.
Regression results

Variables	Predicted sign	Model A (Linear – LEAD TIME) Beta	Model A Significance	Model B (Logistic – LATE FILING) Beta	Model B Significance	Model C (Linear – LEAD TIME) Beta	Model C Significance	Model D (Logistic – LATE FILING) Beta	Model D Significance	Model E (Linear – LEAD TIME) Beta	Model E Significance
Constant		175.191	0.000***	−1.262	0.004**	170.738	0.000***	−3.024	0.001**	184.239	0.000***
AUDIT	– (*H1a* and *H1b*)	13.061	0.004**	0.064	0.803						
BIG 4	– (*H2a* and *H2b*)					−16.035	0.001**	−1.113	0.012*		
PROFITABILITY	+ (*H3a*) – (*H3b*)	−0.019	0.439	0.001	0.456	−0.139	0.009**	−0.006	0.187	0.012	0.680
ASSETS		−4.109	0.001**	−0.154	0.028*	−0.634	0.645	0.050	0.642	−7.706	0.000***
DEBT		17.278	0.004**	0.452	0.184	12.290	0.099	1.184	0.055	23.704	0.009**
MANUFACTURING		−9.132	0.252	−1.866	0.066	−5.293	0.568	−0.898	0.389	−12.280	0.322
MONTH		−4.356	0.256	−0.151	0.481	−5.562	0.242	−0.260	0.454	−2.903	0.611
PAGES		0.852	0.243	0.033	0.435	0.544	0.411	0.015	0.779	2.579	0.345
FIRM AGE		0.165	0.245	−0.010	0.286	0.195	0.203	0.003	0.823	0.127	0.604
Sample size		1000 (audited + unaudited firms)		1000 (audited + unaudited firms)		438 (audited firms)		438 (audited firms)		562 (unaudited firms)	
Adjusted R^2		0.022				0.031				0.027	
F-statistics significance		0.000				0.006				0.002	
Pseudo R^2				0.036				0.071			
Chi^2 significance				0.033				0.065			

Notes: *Significant at the 0.05 level; **significant at the 0.01 level; ***significant at the 0.001 level

regression models are provided in the table. Estimations have also been performed using robust standard errors to correct for heteroscedasticity, but the results are qualitatively similar to the results presented in the table.

In Models A and B, the main independent variable under scrutiny is auditing and how it relates to timeliness. Interestingly, the results show that audited annual reports have a longer lead time than unaudited annual reports (Model A). As already noted, descriptive statistics reveal that the mean lead time is 169 and 160 days for audited and unaudited annual reports, respectively.

With regards to late filing, the results show no significant difference between audited and unaudited annual reports (Model B).

We hypothesized a negative relationship between audited annual reports and lead time (in *H1a*) and late filing (in *H1b*). Contrary to expectations, however, we found that unaudited annual reports had a significantly shorter lead time and also that unaudited annual reports were not exceeding the seven months filing deadline significantly more often than audited annual reports. The results do not support *H1a* and *H1b* and contradict those of Clatworthy and Peel (2016) and Luypaert *et al.* (2016). In their studies, audited firms filed annual reports sooner and were less likely to file after the statuary deadline.

In Models C and D, the main independent variable under inquiry is type of auditor. The models test whether the size of the auditing firm – Big 4 or non-Big 4 – is associated with timeliness. The results show that annual reports being audited by a Big 4 auditor have a significantly shorter lead time than annual reports being audited by a non-Big 4 auditor (Model C). Unreported descriptive analysis shows that the mean lead time is 160 and 174 days for annual reports being audited by a Big 4 and a non-Big 4 auditor, respectively.

Being audited by a Big 4 auditor is also associated with significantly fewer late filings (Model D). Unreported descriptive analysis shows that 5.2% and 12.0% of annual reports being audited by a Big 4 and a non-Big 4 auditor were filed late (i.e. not within the legal stipulated seven months deadline), respectively.

We hypothesized a negative relationship between being audited by a Big 4 auditing firm and lead time (in *H2a*) and late filing (in *H2b*). The results show, in line with expectations, that firms being audited by a Big 4 auditing firm have significantly shorter lead time and are significantly less likely to file their annual report after the legal deadline. These results support *H2a* and *H2b* and are consistent with results in prior studies (Escaloni and Mareque, 2021; Leventis *et al.*, 2005; Meckfessel and Sellers, 2017; Owusu-Ansah and Leventis, 2006; Shin *et al.*, 2017).

In Models E and C, we further test whether profitability is associated with lead time. The presumption is that firms opting out of audit have chosen to do so because of an absence of agency conflicts. Following this line of reasoning, these firms will instead focus on reducing the proprietary costs caused by financial information, thus delaying the release of financial reports when the profitability is high or accelerating the release when the profitability is low. We, thus, hypothesized that there would be a positive association between lead time and profitability among unaudited firms (*H3a*).

Firms with larger information asymmetries can be expected to have audited annual reports, as the audit mitigates the problems caused by these information asymmetries. Audited firms, thus, have incentives to release good news such as a high profitability without delay so that it reaches owners and external stakeholders as soon as possible. We, therefore, hypothesized that there would be a negative association between lead time and profitability among audited firms (*H3b*).

The regression results show a positive association between lead time and profitability among unaudited firms (Model E). The direction of the relationship, that is, a positive one,

was as expected but the association is not significant. Thus, *H3a* was not supported. However, the results support *H3b*, as there is a significant negative association between lead time and profitability among audited firms (Model C).

5. Discussion and conclusions

Little is known about timeliness of annual reports filing in private firms. The aim of the current paper was to fill that void by studying the relationship between auditing and timeliness in a sample of 1,000 Swedish private firms.

Our findings are as follows. First, contrary to expectations, we documented that audited firms file their annual reports significantly later, that is, have a longer lead time, than unaudited firms. Moreover, again contrary to expectations, we documented no significant difference between audited and unaudited firms with regard to late filing of the annual report. These results are inconsistent with two prior studies, one from the UK (Clatworthy and Peel, 2016) and one from Belgium (Luypaert *et al.*, 2016). This difference suggests that the relationship between audited financial statements and timeliness in private firms could be context dependent. We can only speculate why Swedish private audited firms have longer lead times (than their unaudited counterparts) and are late filers to the same extent as unaudited firms, when we see the opposite behavior among private firms in the UK and Belgium. One possible reason could be the institutional/regulatory differences between the countries which were described above. Yet another potential reason could, for example, be that the audit process takes longer time in Sweden than in the UK and in Belgium. Future research should analyze this issue further, that is, under what conditions there is a positive, a negative or no relationship between audits and timeliness.

Second, the findings of the current study showed that being audited by a Big 4 auditing firm was related to both a shorter lead time and a lower probability of late filing. This was in line with our hypotheses as well as with prior research (Escaloni and Mareque, 2021; Leventis *et al.*, 2005; Meckfessel and Sellers, 2017; Owusu-Ansah and Leventis, 2006; Shin *et al.*, 2017). A potential reason for why being audited by a bigger auditing firm leads to more timely filing of financial reports is that bigger auditing firms have larger resources to ensure that the audit is completed in less time. It has also been suggested that bigger auditing firms have greater incentives to ensure that the value of their brand is maintained (Khurana and Raman, 2004; Palmrose, 1988), leading to pressures on bigger auditing firms' clients to release their financial reports in a timely manner.

A third finding of the current study is that there is a negative association between lead time and profitability among audited firms, in line with expectations. One reason for this could be that audited firms have external capital providers which incentivizes audited firms to promptly report good news (i.e. high profitability) and delay the disclosure of bad news (i.e. low or negative profitability). This suggests that agency-related issues (Jensen and Meckling, 1976) are given priority over proprietary cost considerations (Verrecchia, 1983) when private audited firms decide the timing of the release of mandatory accounting information.

The most important practical implication of the current paper is that, in a Swedish context at least, audited firms have longer lead times than unaudited firms and are late filers to the same extent as unaudited firms. The disciplining effect of the audit on firms' accounting behavior, with regard to both the quality of the content in the financial reports and how soon the financial reports are released, is one important argument for why financial reports should be audited. The findings in this paper, however, suggests that one aspect of accounting quality, timeliness, does not seem to benefit from auditing in a Swedish context. Sweden has one of the lowest threshold levels in the EU for opting out of mandatory audit

and there is a debate about whether the threshold levels in Sweden should be raised so that more firms voluntarily can opt out of audit (Huq *et al.*, 2021). Those opposing a raised threshold level claim that auditing has positive effects on accounting quality and, consequently, that a raised level would have adverse effects (Swedish National Audit Office/Riksrevisionen, 2017). The findings in this paper do not support such a claim; at least not from a timeliness perspective.

Future research opportunities include a better control for industry effects, by using more fine-grained data on industry. In the current paper, because of a rather low sample size (n = 1,000), we control for industry effects by using only a binary variable (manufacturer/non-manufacturer). Moreover, only 56 or 5.6% of the sample firms were manufacturers which could make identification of a potential industry effect less likely.

Future research may also use other proxies than in the current paper. Several proxies can, for example, be used for good or bad news. In the current paper, we used return on total assets as a proxy for good or bad news, but alternative measurements such as change in return on total assets or change in net profit could also be used. Moreover, in hypothesis *H3*, we assume lower (higher) levels of agency conflicts and information asymmetries among unaudited (audited) firms. An alternative, potentially more precise, approach could instead be to use measures of agency conflicts and information asymmetries. Number of banking relations could for example be a proxy for external financing and, hence, potential agency conflicts.

Note

1. Clatworthy and Peel (2016) analyzed private firms in the UK between 2008 and 2009 and Luypaert *et al.* (2016) analyzed private firms in Belgium between 2006 and 2008. The UK threshold levels were then, in 2008–2009, 4,100,000 Euros in total assets, 8,200,000 Euros in net turnover and 50 employees. The corresponding Belgian threshold levels, in 2006–2008, were 3,650,000 Euros in total assets, 7,300,000 Euros in net turnover and 50 employees (Accountancy Europe, 2021). If two or three of the threshold levels were exceeded for two consecutive years, then an audit of the annual report was required.

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