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Do audit firm and audit costs/fees influence earnings management in Swedish municipalities?

Pierre Donatella
University of Gothenburg, School of Public Administration, Sweden

Mattias Haraldsson
Lund University, School of Economics and Management, Department of Business Administration, Sweden

Torbjörn Tagesson
Linköping University – Department of Management and Engineering, Sweden

Abstract

Previous research on the private sector shows that auditors and auditing firms are important actors in ensuring high-quality reporting based on accrual accounting. The aim of this study is to explore whether audit firms and audit costs/fees influence municipalities' probability of applying earnings management in their annual accounts. The empirical data, which covered the financial years 2011–13, were handpicked from annual reports or retrieved from other sources. In general, our study shows that the probability of earnings management increased if audit costs/fees increased. However, there were differences regarding the probability of earnings management relating to which audit firm was engaged. This implies that audit quality is a factor that affects the probability of earnings management in Swedish municipalities. The study also indicates that different audit firms make different trade-offs between professional versus commercial logics, and that this is reflected in the clients' propensity to engage in earnings management.

Corresponding author:
Torbjörn Tagesson, Linköping University – Department of Management and Engineering, Campus Valla Linköping SE-581 83, Sweden.
Email: torbjorn.tagesson@liu.se

Points for practitioners

Today a majority of developed countries have adopted accrual-based accounting for municipalities. Along with accrual-based accounting follows the risk of earnings management. Problems regarding accounting quality imply an increased importance of the financial audit. However, our study shows that there is no obvious positive relationship between audit cost/fees and audit quality. The ability to constrain earnings management seems to vary between audit firms. The important implication for practitioners is that auditing must have quality standards that are subject to follow-up and control, which applies both on a system level and also when municipalities procure and contract audit firms for audit assignments.

Keywords
audit cost, audit fee, audit firm, earnings management, municipality

Introduction

Today a majority of developed countries have adopted accrual-based accounting for the public sector (Brusca et al., 2015), yet there are still major differences between different countries' accounting systems (PwC, 2014). In recent years, Eurostat has initiated a project to investigate introducing common accounting standards for the public sector within the European Union (Caperchione, 2015; Tagesson, 2014). However, common standards would not necessarily lead to de facto harmonization (e.g. Pope and McLeay, 2011). Achieving this also requires an institutional context that supports enforcement and compliance with the standards (e.g. Haraldsson and Tagesson, 2014; Pope and McLeay, 2011). This is particularly important in an accrual- and principle-based system, which requires judgement from preparers, as there will be a risk of manipulation of discretionary accruals (Jones and Caruana, 2015). Studies from the private sector show that in some countries the introduction of IFRS (International Financial Reporting Standards) actually led to an increased degree of earnings management (Callo and Jarne, 2010; Jeanjean and Stolowy, 2008). Further, there is also evidence in previous research that, given the right incentives, municipalities adjust reported financial performance via discretionary accruals (Arcas and Martí, 2016; Donatella, 2016; Ferreira et al., 2013; Pilcher and Van der Zahn, 2010; Stalebrink, 2007).

Several private sector studies indicate that monitoring strength is an important factor for successful enforcement (Brown et al., 2014; Daske et al., 2008; Jeanjean and Stolowy, 2008; Li, 2010; Preiato et al., 2015) and that auditors are important actors in institutionalizing accounting standards (Jönsson, 1985; Touron, 2005). However, research also suggests that auditors influence earnings management (Francis, 2011; Walker, 2013). Whether the latter is true in a municipal context

has not been fully addressed in previous studies (Arcas and Martí, 2016; Donatella, 2016; Ferreira et al., 2013; Pilcher and Van der Zahn, 2010; Stalebrink, 2007). Thus, in this study we focused on the role of audits and the relationship between audit firms, audit costs/fees and discretionary accruals.

Although the audit regime is considered weak in Sweden (Tagesson and Eriksson, 2011), there are several reasons that make Sweden a good case for studying this relationship. Firstly, as early adopters of accrual-based accounting (Tagesson and Grossi, 2015), Swedish municipalities have a high accounting maturity with an accounting system that, to a great extent, corresponds with the standards developed by the International Public Sector Accounting Standards Board (Brusca and Martinéz, 2016; Christiaens et al., 2010; PwC, 2014). Second, previous studies have shown that the resources spent on audits vary among different municipalities (Collin et al., 2017) and that there is a competitive audit market (Tagesson et al., 2015). Finally, previous studies have demonstrated the existence of earnings management (Donatella, 2016; Stalebrink, 2007). However, neither Stalebrink (2007) nor Donatella (2016) included audit firms or audit costs/fees as explanatory factors in their models. The aim of this study is to explore whether audit firms and audit costs/fees influence the presence and the extent of earnings management in a municipal context.

The Swedish municipal sector

Sweden has 289 municipalities. The largest municipality has approximately 912,000 inhabitants while the smallest has fewer than 2500 (the median population of a municipality being 15,300). Differences between municipalities, due to different demographic conditions and tax bases, are adjusted by an equalization system where central government provides and redistributes resources between the municipalities (Tagesson et al., 2013).

The power of local governments is based on representative democracy; elections are held every four years. According to the Local Government Act (the Act), the council is responsible for appointing political auditors, an election committee and an executive board with overall duties. After an election, the new assembly must elect a minimum of five auditors for the next four-year term. The auditors are elected from the various political parties and as such they can be labelled *political auditors* (e.g. Tagesson and Eriksson, 2011). The council also decides the size of the budget for auditing (Collin et al., 2017). According to the Act, the auditors are to scrutinize whether operations have been conducted consistently with their purpose and the stated goals of the council and in accordance with legislation. Furthermore, they are to examine whether this was done in an effective manner. The auditors should also scrutinize whether the financial reports give a true and fair view and whether the internal control is sufficient (Local Government Act ch. 9).

The Act states that the auditors shall be assisted in their inspection by experts – termed *professional auditors*. The council and the political auditors can either

create an internal audit office or hire professional auditors from the market. External auditors are to be hired through public procurement and in Sweden there is quite a concentrated market for auditing, dominated by the Big 4 (Tagesson et al., 2015).

There are no sanctions against political auditors who do not fulfil their obligations (Tagesson and Eriksson, 2011). The professional auditors' liability is also unclear, considering that they are not the auditors responsible for determining the assessments regarding risk and materiality. This system of auditing is criticized because of the political auditors' lack of independence and the professional auditors' lack of competence (Tagesson and Eriksson, 2011).

Theory: audit characteristics and earnings management

The standard approach to study earnings management is agency theory (Walker, 2013). Agency theory typically highlights potential conflicts of interest and information asymmetry between the agent and the principal (Jensen and Meckling, 1976). The basic assumptions of agency theory (goal conflict, information asymmetry, utility maximization and costs of monitoring) are essentially the same for the public sector, even though the complexity increases due to multiple non-profit goals and many layers of agency relationships between the voters, the politicians and the public managers (Zimmerman, 1977). The task of the audit is to scrutinize and express an opinion (provide assurance) on the quality of the accounting information regarding whether the information is usable for decision-making and accountability.

The simple linkage between audit quality and earnings management is based on the argument that high-quality auditors are more likely to detect questionable accounting practices than low-quality auditors (Francis, 2011). However, the auditors' propensity to detect and report questionable accounting is not only a matter of training and experience, but is also influenced by incentives produced by agency relationships between audit firms and their clients (municipalities) and principals (voters and other stakeholders) (Watts and Zimmerman, 1986). Antle and Nalebuff (1991) explain that the 'agency problem' arises because the auditors' effort is unobservable, which makes the audit services hard to evaluate and control. There is an inherent risk that audit firms will use their information advantage to maximize their own profit. Further, the difficulty of evaluating and controlling the audit is even greater for external stakeholders. With the principals in a weak position, audit firms might let financial dependencies and client pressure compromise their independence, leading to deficiency in the audit quality (Watts and Zimmerman, 1986), an especially relevant agency problem in the public sector, where there is little interest in accounting and auditing among the municipalities' stakeholders (Zimmerman, 1977).

Besides competence and independence, the auditors' ability to influence their clients' behaviour is also related to the institutional context. As members of a professional group, auditors can be expected to put normative pressure on their

clients (Falkman and Tagesson, 2008). In addition, the legal environment surrounding auditing and accounting has a strong influence on the extent to which auditing influences accounting choice (Francis and Wang, 2008). Prior studies of the private sector have examined the relationship between audit factors on the one hand and earnings management on the other (Walker, 2013). These factors have not yet been explored in a municipal context. In this study, two hypotheses related to these factors are investigated within the political context of Swedish municipalities.

Engaged audit firm

Several audit firm characteristics may imply differences in audit quality between audit firms, which would influence their clients' likelihood of applying earnings management. Francis (2011) argues that audit firms hire and train personnel, develop testing procedures and devise internal structures to assure quality and compliance with their audit policies. It is possible that audit firms have differences regarding training, techniques and procedures. Besides, audit firms have different histories, cultures and client bases (see Collin et al., 2009) and there are also differences regarding contextual knowledge and experience, all of which are expected to influence the auditors' ability to make accurate audit judgements (Francis, 2004). Auditing also includes a professional perspective and a business perspective. The audit industry has, over the years, developed towards being an industry with competitive pressures and a business orientation, implying that customer acquisition, customer retention and customer profitability constitute part of the audit work (Bévort and Suddaby, 2015; Broberg et al., 2013; Tudor, 2013). Thus, audit firms need to compete based on both quality and price (Öhman et al., 2012). In particular, the profit orientation of audit firms increases the pressure for auditors to prioritize the pursuit of profit over professional objectives. Thus, different audit firms might have different internal control systems and a different emphasis on profit orientation that might influence the auditors' propensity to report misrepresentations.

In Sweden, the municipalities started to procure audits from the market during the 1990s. At the time PwC was the dominant actor, but gradually the other Big 4 firms have increased their market share. Additionally, a recent study indicated that some of the audit firms use a lowballing strategy to gain market share (Tagesson et al., 2015), which indicates that different audit firms use different strategies.

Thus, it is likely that differences exist in how audit firms work, based on their history, market share, their knowledge, culture and their business ambitions. However, following Collin et al. (2009), we cannot predict which audit firm will influence earnings management at the client level and in what way. We therefore hypothesize that:

H1: The auditing firm will influence the probability of earnings management.

Audit costs/fees

A higher audit cost/fee implies higher audit quality, either because of greater audit effort or greater expertise (Francis, 2004). Copley (1991) argues that auditors who have invested more in reputation capital have greater incentive to address poor accounting in order to create value for the stakeholders. From this perspective, audit is not a homogeneous service and differences in the quality will be reflected in audit costs/fees. Francis (2004) also found evidence that audit firms that charged higher fees on average also provided higher audit quality.

However, the logic behind the assumption of a positive correlation between audit fees and audit quality has been questioned. If the auditor is financially dependent on the client, there is a risk that the auditor may try to please the client rather than protect the stakeholders (see Walker, 2013). Financial dependence compromises auditor independence in the sense that an auditor concerned about the possible loss of an important client is less likely to object to earnings management (Frankel et al., 2002; Walker, 2013). This relation between auditor independence and earnings management has also received empirical support. For example, Gul et al. (2003) showed that discretionary accruals and audit fees are positively related.

Thus, there are competing theoretical arguments and mixed empirical evidence regarding the relationship between audit costs/fees and earnings management. Further, Collin et al. (2017) argued that in the Swedish municipal context where the total audit costs/fees are controlled by political budgeting, the relationship might be distorted by political signalling motives. However, in line with Copley (1991) we based our hypothesis on the general assumption that there is a negative relation between the level of audit costs/fees and the presence of earnings management:

> *H2*: There is a negative relationship between audit costs/fees and the probability of earnings management.

Method

Data selection

Our empirical data include financial reporting from all Swedish municipalities for the period 2011–13. Our argument for making this data selection is that the period was reasonably stable in terms of regulation (Donatella, 2016) and economic conditions (SALAR, 2014). Data were either handpicked from annual reports or retrieved from audit firms, Statistics Sweden or SALAR.

Dependent variable

A set of specific accruals (see McNichols, 2000) was used to measure the presence of earnings management: (a) provisions except for pension obligations after 1998,

(b) redemption of pension obligations before 1998[1] and (c) complete and partial impairments of property, plant, equipment and financial assets consisting of shares in local government corporations (PRI). These are sizeable accruals in Swedish municipalities that require significant elements of judgement and estimates. Earlier research (Donatella, 2016) suggests that preparers exercise their discretion over these accruals so as to manage reported results. As these judgements and estimates typically occur in a grey zone or are even in violation of GAAP (Donatella, 2016), the relationship between these accruals and audit factors are relevant.

As the data were not normally distributed, the conditions required for linear regression were not met. Therefore, we used logistic regression to analyse the data. This meant that we had to transform our dependent variable into a dummy variable by using a cut-off for instances when earnings management was present or not. We operationalized the presence of earnings management as PRI >1 percent of tax revenue and grants (1=yes, 0=no). We based this on auditors' rule of thumb that material misstatement exists when misstatement is >1 percent of tax revenue and grants. Additional analyses based on different cut-offs were tested, but are not explicitly reported in this article. However, the basic correlations were the same, demonstrating robustness regarding the correlations presented in the analysis.

Independent variables

- *Audit firm* – (Deloitte, EY, KPMG, own office, and PwC) was coded into five different dummy variables. EY was used as a reference variable. (*Source*: retrieved from one of the audit firms)
- *Audit cost* – the total resources that the municipality allocated to the audit function, which included compensation to both the political and the professional auditors, was measured in SEK and scaled by number of inhabitants. (*Source*: Statistics Sweden)
- *Audit fee* – the compensation that the municipality paid to the professional auditors was measured in SEK and scaled by number of inhabitants. This information is not publicly available. The only way to collect it is to contact each municipality or audit firm and ask for the data. However, we were able to get the data for 2013 from one of the audit firms. The correlation between the variables audit cost and audit fee was positive and significant (p=.001). On average, 46.4 percent of the *audit costs* were used to pay *audit fees* in the 2013 sample.

Control variables

Earlier research on earnings management of municipalities has mainly focused on economic factors and suggest that these factors have a strong explanation (Arcas and Martí, 2016; Donatella, 2016; Ferreira et al., 2013; Pilcher and Van der Zahn, 2010; Stalebrink, 2007). Recent research suggests

that political factors also have some explanatory value (Ferreira et al., 2013; Donatella, 2016). We therefore controlled for a number of economic and political factors:

- *Underlying economics* is an important variable in the earnings management literature (Ronen and Yaari, 2008) because an undesirable economic development is expected to trigger earnings management (e.g. Buckmaster, 2001; Healy and Wahlen, 1999). We followed Donatella (2016) and measured underlying economics as: net income prior PRI and capital gain, scaled by tax revenue and grants. (*Source*: Annual reports)
- Earlier research suggested that the big bath earnings management strategy is in use (Donatella, 2016; Stalebrink, 2007). Big bath reporting typically occurs during years with poor financial performance, making deficits appear even larger by 'dumping' additional costs. The rationale behind this strategy is that it will pave the way for reporting of desirable financial performance in the future (Buckmaster, 2001; Walsh et al., 1991). For the reporting strategy to play out in this way in a Swedish context, municipalities need to refer to 'exceptional reasons' (Local Government Act, ch. 8 § 5b), otherwise they are obliged to restore the deficit within the following three years (Local Government Act, ch. § 8:5a). We therefore followed Donatella (2016) and used *balanced budget requirement met due to the use of exceptional reasons* as a proxy for big bath (1=yes, 0=no). (*Source*: Annual reports)
- *Broad governing coalitions* mitigate earnings management incentives, as there is no clear opposition that can hold the governing parties accountable (Donatella, 2016). We therefore controlled for this factor. We followed Gilljam and Karlsson's (2012) operationalization of broad governing coalitions: such coalitions exist when governing parties comprise Social Democrats or the Left Party with one or more right-wing parties (1=yes, 0=no). (*Source*: Statistics Sweden)
- *Minority government* means strong political competition (e.g. Haraldsson and Tagesson, 2014). The opposition have the opportunity to put pressure on the governing parties as they could win formal votes in the political assemblies. This would make excessive earnings management risky. Therefore, we controlled for this factor. Minority government was measured as governing parties <50 percent of the seats in council (1=yes, 0=no). (*Source*: Statistics Sweden)
- *Change of government* is another measure of political competition (e.g. Haraldsson and Tagesson, 2014). The variable was measured as change of party affiliation for the chair of the executive board during one or more of the last three elections (1=yes, 0=no). (*Source*: SALAR)
- We also controlled for *size*. Size was measured as number of inhabitants. (*Source*: Statistics Sweden)

Results

Descriptive statistics

The descriptive statistics are presented in Table 1.

As shown in the table, 18.6 percent of the 867 accounting periods exceed the cut-off PRI >1 percent of tax revenue and grants. All accounting periods in our sample were either audited by a Big 4 audit firm (96.2 percent) or own office (3.8 percent). PwC has a dominant market position (auditing 54.6 percent of the accounting periods in our sample), followed by KPMG (21.6 percent), EY (14.5 percent) and Deloitte (5.5 percent). The audit cost averaged SEK 54.5 per resident and the audit fee averaged SEK 36.7 per resident.

Analyses

As in earlier research on earnings management in municipalities (see Donatella, 2016; Pilcher and Van der Zahn, 2010; Stalebrink, 2007), the analyses were conducted on a pooled data sample

Table 2 indicates a significant negative correlation between the dependent variable PRI >1 percent and EY. Own office and all other audit firms have a

Table 1. Descriptive statistics.

	Yes (1)		No (0)			
	n	%	*n*	%	Mean	*SD*
Dependent variable						
PRI >1%	161	18.6	706	81.4		
Independent variables						
Deloitte	48	5.5	819	94.5		
EY	126	14.5	741	85.5		
KPMG	187	21.6	680	78.4		
Own office	33	3.8	834	96.2		
PwC	473	54.6	394	45.4		
Audit cost					54.451	26.704
Audit fee					35.946	34.722
Control variables						
Underlying economics					0.024	0.026
Big bath	52	6.0	815	94.0		
Broad governing coalition	129	14.9	738	85.1		
Minority government	162	18.7	705	81.3		
Change of government	456	52.6	411	47.4		
Size					9.823	0.952

Notes: Variable audit fee n=277, all other variables n=867.

Table 2 Correlation matrix.

Variables	PRI > 1%	2a	2b	2c	2d	2e	3	4	5	6	7	8
2a Deloitte	0.027											
2b EY	−0.096**	−0.100**										
2c KPMG	0.031	−0.127**	−0.216**									
2d Own office	0.045	−0.048	−0.082*	−0.104**								
2e PwC	0.013	−0.265**	−0.452**	−0.575**	−0.218**							
3 Audi cost	0.102**	−0.030	−0.149**	−0.010	−0.093**	0.163**						
4 Underlying economics	0.276**	0.113**	0.027	0.006	0.100**	−0.114**	−0.131**					
5 Big bath	0.154**	0.045	−0.021	−0.026	−0.025	0.026	0.081*	−0.213**				
6 Broad governing coalition	−0.091**	−0.016	0.021	0.057†	−0.083*	−0.022	0.027	−0.003	−0.010			
7 Minority government	−0.001	−0.025	0.046	0.044	0.090**	−0.091**	−0.016	0.019	0.004	−0.126**		
8 Change of government	0.049	−0.103**	0.077*	0.004	0.008	−0.013	0.020	0.125**	−0.120**	0.105**	0.046	
9 Size	−0.094**	−0.094**	0.180**	−0.018	0.260**	−0.170**	−0.799**	0.121**	−0.094**	−0.060	0.034	−0.023

Notes: **Correlation is significant at the .01 level (two-tailed); *correlation is significant at the .05 level (two-tailed); †correlation is significant at the .10 level (two-tailed). Spearman's rho is presented because all correlations include at least one dummy variable.

non-significant positive correlation. Moreover, there is an indication of a significant positive correlation between the dependent variable and audit cost.

The correlation matrix also indicates a possible multicollinearity problem between the variables size and audit costs, as the pairwise correlation is close to 0.8. An additional collinearity test confirmed that the VIF value for the variable size was just around the threshold of 2.5. However, additional analyses, where the variable size was excluded, did not affect the directions or significance levels of the other variables.

Table 3 presents the regression models in which *H1* (the auditing firm will influence the probability of earnings management) and *H2* (there is a negative relationship between audit cost/fee and the probability of earnings management) were tested. In model 1, *H1* is supported, as PRI >1 percent differs between audit firms. KPMG and PwC both have significantly more PRI >1 percent than EY does.

Contrary to what *H2* predicted, there is a significant positive correlation between PRI >1 percent and audit costs, indicating problems with auditor independence. However, additional analyses, in which the regression was run with one audit firm at a time, showed that there were differences between the firms; Deloitte and EY have a negative correlation between PRI >1 percent and audit costs while KPMG, own office and PwC have a positive correlation between PRI >1 percent and audit costs. However, only the correlations for Deloitte and KPMG are significant. These results indicate that audit firms have a moderating effect on audit costs. We therefore ran a regression model (model 2) where we merged audit firm and audit cost.

The results from model 2 confirm that audit firms have a moderating effect on audit costs, that is, the audit firm affects the relationship between the audit cost and the dependent variable. We continued to use the variable that contains EY as a reference category. Hence, compared to the variable where EY was merged with audit cost, the variables that included KPMG and PwC shows a significant positive correlation with the dependent variable (i.e. PRI >1 percent) while own office shows a moderately significant positive correlation. The variable that included Deloitte is not significant.

Because we had data on audit fees only for 2013, we ran regression models (models 3 and 4) for this year alone. Model 3 shows differences between the audit firms. However, in this model only KPMG has significantly more PRI >1 percent than EY does. Further, the model indicates a significant positive correlation between PRI >1 percent and audit fee. In model 4, the variables including KPMG and PwC show a significant positive correlation with the dependent variable. The similar results in models 3 and 4, compared to models 1 and 2, show that audit cost can be used as a proxy for audit fee.

All the models were significant at the .001 level and correctly classified between 81.9 percent and 83.3 percent of the cases. The improvement compared to the naïve probability was highest in model 4. The models' explanatory power, measured by Nagelkerke R^2, varied between 21.6 percent and 31.3 percent. Even though audit

Table 3 Logistic regression analyses.

Variables	Expected sign	Model 1 (*n*=867) Probability of PRI >1%	*SE*	Model 2 (*n*=867) Probability of PRI >1%	*SE*	Model 3 (*n*=277) Probability of PRI >1%	*SE*	Model 4 (*n*=277) Probability of PRI >1%	*SE*
Deloitte		0.717	0.502			0.040	0.928		
KPMG		1.019**	0.373			1.064†	0.613		
Own office		0.943	0.599						
PwC		0.743*	0.348			0.419	0.581		
Audit cost	−	0.010*	0.005						
Audit fee	−					0.013*	0.005		
Deloitte × audit cost				0.003	0.009				
KPMG × audit cost				0.016**	0.005				
Own Office × audit cost				0.019†	0.011				
PwC × audit cost				0.010**	0.004				
Deloitte × audit fee								−0.005	0.026
KPMG × audit fee								0.020*	0.008
PwC × audit fee								0.015**	0.006
Underlying economics	+	38.799**	5.105	39.315**	5.111	44.893**	9.245	44.530**	9.172
Big bath	+	2.149**	0.355	2.158**	0.356	2.833**	0.644	2.732**	0.632
Broad governing coalition	−	−0.898**	0.329	−0.901**	0.329	0.037	0.486	0.098	0.485
Minority government	−	−0.228	0.258	−0.265	0.261	0.284	0.445	0.372	0.442
Change of government	+	0.394*	0.200	0.387†	0.199	−0.101	0.353	−0.064	0.350
Size	+	−0.069	0.159	−0.086	0.145	−0.232	0.240	−0.192	0.240
Constant		−3.390	1.827	−2.547	1.568	−1.763	2.601	−1.682	2.475
Model chi square		124.210**		125.641**		61.827**		62.545**	
Naïve prediction %		81.4		81.4		78.7		78.7	
Correct prediction %		82.8		83.3		81.9		82.3	

(continued)

Table 3 Continued

Variables	Expected sign	Model 1 *(n=867)* Probability of PRI >1%	*SE*	Model 2 *(n=867)* Probability of PRI >1%	*SE*	Model 3 *(n=277)* Probability of PRI >1%	*SE*	Model 4 *(n=277)* Probability of PRI >1%	*SE*
Nagelkerke R^2		0.216		0.219		0.310		0.313	
Max VIF value		2616		2306		2344		1494	
Durbin-Watson		1711		1715		1967		1973	

Equation *model 1*: $(\text{PRI} > 1\%_{i,t} = \beta_0 + \beta_{1\text{-}4}\text{Audit firm}_{i,t} + \beta_5\text{Audit cost}_{i,t} + \beta_6\text{Underlying economics}_{i,t} + \beta_7\text{Big bath}_{i,t} + \beta_8\text{Broad governing coalition}_{i,t} + \beta_9\text{Minority government}_{i,t} + \beta_{10}\text{Change of government}_{i,t} + \beta_{11}\text{Size}_{i,t} + \varepsilon_{i,t})$

Equation *model 2*: $(\text{PRI} > 1\%_{i,t} = \beta_0 + \beta_{1\text{-}4}\text{Audit firm} \times \text{audit cost}_{i,t} + \beta_5\text{Underlying economics}_{i,t} + \beta_6\text{Big bath}_{i,t} + \beta_7\text{Broad governing coalition}_{i,t} + \beta_8\text{Minority government}_{i,t} + \beta_9\text{Change of government}_{i,t} + \beta_{10}\text{Size}_{i,t} + \varepsilon_{i,t})$

Equation *model 3*: $(\text{PRI} > 1\%_{i,t} = \beta_0 + \beta_{1\text{-}4}\text{Audit firm}_{i,t} + \beta_5\text{Audit fee}_{i,t} + \beta_6\text{Underlying economics}_{i,t} + \beta_7\text{Big bath}_{i,t} + \beta_8\text{Broad governing coalition}_{i,t} + \beta_9\text{Minority government}_{i,t} + \beta_{10}\text{Change of government}_{i,t} + \beta_{11}\text{Size}_{i,t} + \varepsilon_{i,t})$

Equation *model 4*: $(\text{PRI} > 1\%_{i,t} = \beta_0 + \beta_{1\text{-}4}\text{Audit firm} \times \text{audit fee}_{i,t} + \beta_5\text{Underlying economics}_{i,t} + \beta_6\text{Big bath}_{i,t} + \beta_7\text{Broad governing coalition}_{i,t} + \beta_8\text{Minority government}_{i,t} + \beta_9\text{Change of government}_{i,t} + \beta_{10}\text{Size}_{i,t} + \varepsilon_{i,t})$

Notes: **Correlation is significant at the .01 level (two-tailed); *correlation is significant at the .05 level (two-tailed); †correlation is significant at the .10 level (two-tailed).

Table 4 Summary of the results

Hypotheses	Results
H1: The auditing firm will influence the probability of earnings management	Supported
H2: There is a negative relationship between audit costs/fees and the probability of earnings management.	Rejected

cost seems to work as a proxy for audit fee, the higher explanatory power in models 3 and 4 indicates that audit fee is preferable to audit cost due to better accuracy and precision. However, models 3 and 4 only included cross-sectional data from one year.

In additional analyses based on the same data and variables, we Winsorized all the continuous variables (i.e. underlying economics, size, audit cost, audit fee) on the 1 percent and 2 percent level to control for the effects of outliers. These analyses were basically the same as the analyses presented. Further, we carried out additional analyses using higher (PRI >1.5 percent) and lower (PRI >0.5 percent) cut-offs regarding PRI. Additional logistic and probit analyses, using random effect panel data, showed the same statistical relationships as reported in Table 3. Thus, the results confirm the relationship between discretionary accruals on the one hand and audit firm and audit cost/fee on the other. In addition, the economic and political control variables were robust, with the exception of the variable change of government, which was not significant at the higher cut-off level.

In sum, the overall results show a strong relationship between earnings management by discretionary accruals and our audit variables. *H1*, *the auditing firm will influence the probability of earnings management*, is supported. However, *H2*, *there is a negative relationship between audit costs/fee and the probability of earnings management*, must be rejected since our results show a significant positive correlation between discretionary accruals and audit costs/fees.

Conclusions

The study provides evidence on the occurrence of earnings management and, theoretically, contributes to the research field by exploring how audit firms and audit costs/fees influence earnings management in a municipal context. We conclude that Swedish municipalities' probability of applying earnings management is influenced by the engaged audit firm. For example, municipalities using KPMG as auditors were much more likely to use discretionary accruals than municipalities that engaged EY as auditors. We further conclude, in contradiction of our theoretical expectation, that higher audit costs/fees per se do not reduce the risk for earnings management by discretionary accruals; rather our results show that it is the other way around. In general, the probability of earnings management among Swedish municipalities increases if the audit costs/fees increase. This result is in line with

Gul et al. (2003), although previous research is inconclusive regarding the relationship between audit fees and earnings management (see Walker, 2013). The analysis furthermore shows that this relation between audit costs/fees and earnings management is also dependent upon the audit firm engaged. Thus, it appears that audit firms in the market for auditing Swedish municipalities make very different trade-offs between professional and commercial logics. In summary, our results generally support the idea of agency-related problems in the Swedish market for municipal auditing, since audit characteristics in terms of audit firm and audit costs/fees seem to influence the accounting choices of municipalities.

A major policy change in many developed countries over the last 20 years has been the adoption of accrual-based accounting for the public sector. However, the quality and comparability of the financial information have been questioned (Christiaens and Neyt, 2014). In this context the observation that audit firm characteristics influence earnings management becomes a key issue when discussing accounting quality problems within the municipal sector. Our results support the concerns presented in previous research regarding how loose regulation of auditing (Tagesson and Eriksson, 2011) and the development of audit firms as increasingly business-orientated (Bévort and Suddaby, 2015; Broberg et al., 2013; Tudor, 2013) may impinge on auditors' independence and professionalism, which in turn negatively influences audit quality. However, the unique municipal audit regime in Sweden (Tagesson and Eriksson, 2011) might call into question the generalizability of our results for other institutional contexts. Still, the results of this study indicate that the assumptions that Big 4 audit firms are a homogeneous group and represent high audit quality, or that higher audit costs/fees result in higher audit quality, must be questioned. Thus, in order to obtain de facto harmonization and implementation of common accrual-based accounting standards, it is also necessary to ensure that common rules for oversight and an independent high-quality audit are implemented.

Finally, the study has some limitations that have to be considered. (i) The study only covers a limited period of time, a period characterized by stable economic conditions and increasing bases for taxation. (ii) The dependent variable is based on a set of specific accruals. However, it cannot be ruled out that other items are also used to adjust reported financial performance. (iii) The study does not consider how the audit resources are allocated between financial audit and value for money audit. (iv) We have not controlled for situations where the municipal council have granted a discharge, despite a qualified audit report. However, since previous studies show that this occurs only in exceptional cases (Tagesson and Eriksson, 2011), this should not have any significant impact on our results.

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Note

1. According to current legislation (Local Government Accounting Act ch. 5 § 4), pension obligations before 1998 should be recognized on a cash basis (i.e. when pensions are paid) while obligations after 1998 should be recognized on an accrual basis (i.e. when pensions are earned). Provisions for pension obligations after 1998 were not included in the set of specific accruals used, as GAAP leave a limited scope for estimates and judgements. Pension obligations before 1998, that are recognized prior to pensions being paid (e.g. when provisions or redemption is accounted), are on the other hand associated with substantial estimates and judgement outside GAAP and therefore were included.

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Pierre Donatella is senior lecturer at School of Public Administration, Gothenburg University, Sweden. He received his PhD in Business Administration from School of Business, Economics and Law at Gothenburg University (Sweden) in 2016.

Mattias Haraldsson is senior lecturer at the School of Economics and Management, Department of Business Administration, Lund University, Sweden. He has several years' experience of public sector auditing and received his PhD in Business Administration from Lund University (Sweden) in 2016. He is also the author of articles on public sector accounting and auditing.

Torbjörn Tagesson is Professor of Accounting at Linköping University (Sweden) and the Executive Director of the Swedish Council for Municipal Accounting. He received his PhD in Business Administration from Lund University (Sweden) in 2002 and is the author of several books and articles on accounting, auditing, and public administration.