EARNINGS MANAGEMENT IN ENGLISH LOCAL GOVERNMENTS: 

DETERMINING FACTORS AND INSTRUMENTS

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EARNINGS MANAGEMENT IN ENGLISH LOCAL GOVERNMENTS: DETERMINING FACTORS AND INSTRUMENTS

Resumen
Este artículo investiga la gestión del resultado en la administración local inglesa, incluyendo las motivaciones para su uso y los instrumentos utilizados. Encontramos evidencia de gestión del resultado en los ayuntamientos. No existe una tendencia clara entre aumentar y disminuir el resultado. Los ayuntamientos utilizan prácticas contables para conseguir una cifra de superávit o déficit próxima a cero. Los ayuntamientos con menor endeudamiento son más proclives a aumentar el resultado o menos proclives a disminuir el resultado. La gestión del resultado se consigue principalmente a través de los componentes anormales o inesperados de las amortizaciones y de los deterioros de valor de los activos fijos.

Abstract
This paper investigates earnings management in English local governments, including the motivations for its use and the instruments used to achieve it. We find evidence of accounting numbers management in local authorities. There is no clear tendency between increasing and decreasing income. Local governments use accounting practices to achieve a “(surplus)/deficit for the year” close to zero. Local governments with lower leverage have more income-increasing or less income-decreasing earnings management activity. It is found that earnings management is achieved mainly by abnormal depreciation and impairment of fixed assets.
1. INTRODUCTION

In the public sector, a major result of public sector reforms in the 80s and 90s has been an increased emphasis on ‘management’ rather than on ‘administration of services’. This change has entailed a shift from the traditional stewardship role of accounting to cost management, including the adoption of accrual accounting in many countries. One feature of accrual accounting is that it relies partly upon the use of estimates or judgement in the measurement of items in the financial statements, for example in the valuation of assets or the assessment of liabilities or obligations. This leads to opportunities for discretion in the preparation of financial statements and, in turn, this may lead to the preparers of financial statements seeking to ‘manage’ the results that are disclosed. In the private sector, this is referred to as ‘earnings management’, reflecting the importance of the announcement of corporate profits or losses.

Many empirical studies have documented earnings management practices in companies. Healy and Wahlen (1999; p. 368) suggest that earnings management ‘...occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers’. This means that desired earnings levels are achieved through accounting choices from among generally accepted accounting principles and/or through operating decisions. The implications of these practices for stakeholders make the study of earnings management a critical objective for standard setters and regulatory bodies.

Motivations for earnings management exist both in the private and the public sectors, although with different purposes. Brickley and Van Horn (2002) found that managers have incentives to concentrate on financial performance in both profit and non-profit hospitals. In the business sector, the link between incentives and accounting information has been identified as a main determinant of accounting manipulation. Different situations can lead business managers to try to smooth, maximize or minimize reported income. Earnings management occurs for a variety of reasons, which include influencing stock market perceptions, to increase management’s compensation, to reduce the likelihood of violating lending agreements and to avoid regulatory intervention (Healy and Wahlen, 1999). In the public sector, where achieving earnings is not a primary objective, ‘accounting numbers management’ has become a way for politicians to adapt accounting figures to their interests. In this paper, we argue that managers, as preparers of accounting information, will have incentives to report net operating costs at around zero (a break-even position). Local governments might be motivated to manage net operating cost numbers for several reasons. They may be
required to meet specific financial objectives set by higher levels of authority, they may use a break-even position to signal that they meet non-financial objectives by providing services at a reasonable cost, or they may need to signal effective financial management to justify funding from central government. For example, Leone and Van Horn (2005), Verbruggen and Christiaens (2012) and Ferreira et al (2012) find evidence of earnings management in non-for-profit sector and municipalities.

The aim of this paper is to answer the following research questions: First, do English local governments carry out earnings management? Second, do some local governments’ financial characteristics, namely, closeness to zero deficit and leverage, incentive them to apply earnings management? Third, what are the specific methods used by local governments for earnings management practices?

The findings of this research will be of interest for practitioners, academics and standard setters. For academics and practitioners, this study will be useful in order to evaluate the quality of the information reported by local governments. This study will allow them to ascertain whether local government managers are taking advantage of the discretion associated with accrual accounting, whether some local governments’ financial characteristics are associated with earnings management practices, and what specific items are mostly used. For standard setters, it is also important in order to know the effects of the accounting choice allowed by accounting standards on the financial information reported by local entities.

The remainder of the paper is organized as follows. Section 2 explains the English local government’s context, and develops the theoretical framework and the hypothesis. Section 3 explains the methodology. Section 4 presents the empirical results. Section 5 analyzes the relationship between leverage and earnings management. Section 6 focuses on specific items used, and Section 7 concludes.

2. BACKGROUND AND HYPOTHESES

2.1. The English local government context

In England, local governments prepare a statement of accounts applying the accrual accounting\(^1\) basis in accordance with the Code of Practice on Local Authority Accounting in the United Kingdom –Statement of Recommended Practice (the SORP) issued and updated annually by CIPFA (2012) and the Local Authority Scotland Accounts Advisory Committee (LASAAC). Since 2010/2011 the Code is based on the International Financial Reporting Standards (IFRS), which have been adopted as the basis for public sector accounting in the UK. The core financial statements are: the income and expenditure account, the statement of the movement on the general fund balance, the statement of total recognized gains and losses, the balance sheet and the
cash flow statement. Local authorities' statement of accounts must be audited by independent auditors appointed by the Audit Commission².

Local authorities are funded by a combination of grants, council tax, business rates and fees for services. Capital expenditure can be financed in a number of ways, including from borrowing, capital receipts, grants from central government, contributions, service revenues or public-private partnership arrangements such as the Private Finance Initiative.

The Local Government Finance Act 1992 requires local authorities to set a council tax sufficient to meet its expenditure after taking into account other sources of income, which is known as the “balanced budget requirement”. These requirements ensure that local authorities act prudently and can afford to repay any borrowing undertaken. In addition, English local government must follow the requirements of the prudential Code for Capital Finance in Local Authorities (CIPFA, 2009), which was introduced in 2004 and was fully revised in 2009 to incorporate changes as a result of the move towards IFRS. Prior to April 2004, the government set limits on the amount that each local authority could borrow.

2.2. Theoretical framework and hypotheses

The accounting system has always been closely linked to the agency problem and, in the public sector, accountability relationships between principals and agents have been shown to be more complex than in the private sector. According to agency theory and positive accounting theory (Watts and Zimmerman, 1986), agents would find incentives for earnings management in order to give the best view of their performance for reasons of professional prestige, maintenance of their jobs, reaching targets agreed with parent entities or because contracts are based on achieving specific accounting figures (Beattie, 2002). In local governments, earnings are not normally a primary objective. Local governments do not seek profits; they seek to provide services to citizens maintaining a reasonable balance between expenditures and income. In consequence, in this context the appropriate term is “accounting numbers management” rather than earnings management. In public entities, the goals included in political campaign programs and/or strategic management plans may promote accounting numbers management by officials and elected politicians.

Agency theory (Jensen and Meckling, 1976) can be used to describe the relationship between the central government and local governments in England. Both, the central government (the principal) and local authorities (the agent) can be considered as self-interested and maximizing agents, and both bear and share costs. Public choice theory assumes that politicians and government bureaucrats pursue their own aims and act according to their preferences, that is, they have a rational behaviour (Mueller, 1997;
The reasons for earnings management can therefore be stated in terms of both contractual and political costs (Watts and Zimmerman, 1986). As in other public sector entities, local government managers may find incentives to use accounting choice to disguise poor financial performance, management deficiencies or funding insufficiencies in the delivery of public services, as well as to avoid increases in service costs or in deficits, and to achieve financial forecasted performance targets.

Few articles have researched earnings management in non-profit organizations. There are some studies on local governments (Stalebrink, 2007; Pilcher and Van der Zahan, 2010; Ferreira et al, 2012), others focused on hospitals and National Health Service trusts (Leone and Van Horn, 2005; Ballantine et al., 2007 and 2008), and on charitable organizations (Trussel, 2003; Jones and Roberts, 2006; Verbruggen and Christiaens, 2012). All these studies have followed similar methodologies than those applied in a great number of studies from private sector literature.

Leone and Van Horn (2005) find that CEO manage earnings toward zero after pre-managed earnings are observed in not-for-profit hospitals in the US, and Ballantine et al (2007) find similar results in English NHS hospital Trusts. In Portuguese local governments, Ferreira et al (2012) find that politicians are motivated to employ earnings management in order to report earnings that are positive but close to zero.

Previous research has investigated possible factors associated with earnings management in the public sector, such as audit fees and the types of auditor (Ballantine et al., 2008), acquisition of greater capital contributions from higher governmental authorities (Pilcher and Van der Zahn, 2010), governmental financing (Verbruggen and Christiaens, 2012) and political competition (Ferreira et al, 2012).

Stalebrink (2007) and Pilcher and Van Der Zahn (2010) study the specific accruals, such as depreciation, that are used for earnings management. In the case of Swedish municipalities, discretionary accruals were increased for purposes of producing small surpluses across accounting periods, and also when large deficits are reported showing a “big-bath” behaviour (Stalebrink, 2007). In Australian local governments, Pilcher and Van Der Zahn (2010) find that unexpected depreciation was used to adjust financial performance, to possibly receive higher capital contributions from higher governmental authorities.

The income and expenditure account of English local governments reports the net cost for the year for all functions for which the Council is responsible and shows how that cost has been financed. In consequence, the item of interest in this study is the “(Surplus)/deficit for the year”. If expenditure charged in the account is more than the income recognised then this results in a deficit for the year. If the expenditure incurred is less the income recognised then this results in a surplus for the year. A surplus is
treated as a negative deficit for the year. In consequence, we posit the following hypothesis:

Hypothesis 1. Accounting numbers management, as reflected in the “(surplus)/deficit for the year”, is a common practice in local governments.

In many countries, governmental entities are required by law to have balanced results. In general, the optimal desired point for results seems to be just above zero. Earnings close to zero indicate the capacity of local politicians to keep the level of costs in line with income (Ferreira et al, 2012). For example, local government authorities may seek to report a small surplus to indicate that taxes have not been too high, that costs have been controlled and that there is no excessive financial burden on future generations (Anthony, 1985; Stalebrink and Sacco, 2007). Governments seek out creative solutions, such as altering the timing and recognition of various flows or redefining what constitutes revenues and expenditures, to balance costs with revenues in periods of fiscal restraints (Easterly, 1999; Petersen, 2003).

Thus, the following hypothesis is also tested:

Hypothesis 2. Local governments use accounting numbers management in order to report the “(surplus)/deficit for the year” figure close to zero.

3. METHODOLOGY

3.1. Sample selection and data

The initial sample is formed by 352 local entities in England, existing on 31st March 2010. Financial year ends on 31st March, in consequence, we gather data from their audited Statements of Accounts for financial years 2009-10 (the 2010 accounts) and 2008-09 (the 2009 accounts) for lagged variables available from their web sites. The initial sample is reduced by nine local entities that do not provide detailed financial information of fixed assets and other eight local entities that do not provide comparable financial information with previous year because they have been involved in mergers. In consequence, our final sample consists of 335 observations. The size of the total assets of these local authorities range from £18.6 million to £6,840.3 million and have populations ranging from 2.2 thousand to 1.4 million. The mean (median) of total assets is £759.6 million (393.7 million) with the mean (median) of population being 190.3 thousand (130.6 thousand) which indicates a negatively skewed distribution with most local entities being smaller than the mean.

3.2. Detecting accounting numbers management
In accounting numbers management through the use of accounting practices, accruals are the mechanism of interest since they include revenues and expenses of the year that do not involve cash-flows in the year. However, not all accruals come from accounting numbers management practices. In order to measure accounting numbers management, we need to distinguish the accruals of the normal activity of the entity (that we call expected accruals) from the accruals due to accounting numbers management practices (abnormal accruals). In consequence, our magnitude of interest is abnormal accruals. As abnormal accruals are unobservable, we estimate them (ABNACCR) as the difference between total accruals (ACCR) and expected accruals (EXPACCR):

\[ \text{ABNACCR}_{jt} = \text{ACCR}_{jt} - \text{EXPACCR}_{jt}, \]  

where \( j \) and \( t \) denote observation \( j \) and year \( t \).

Total accruals (ACCR) can be measured using balance sheet items or cash-flow statement items. Hribar and Collins (2002) find that the frequency and magnitude of errors induced when using balance sheet-based accruals estimates can be substantial and suggest the use of accruals taken from the cash-flow statement. In consequence, we measure total accruals from the cash-flow statement as follows:

\[ \text{ACCR}_{jt} = -\text{DY}_{jt} + \text{COFO}_{jt} = \text{COFO}_{jt} - \text{DY}_{jt}, \] 

Where,

\( \text{DY}_{jt} = (\text{Surplus})/\text{Deficit} \) for the year of local government \( j \) in year \( t \)

\( \text{COFO}_{jt} \) = Net cash outflow from operating activities of local government \( j \) in year \( t \)

Expected accruals (EXPACCR) are estimated using a cross-sectional variant of the Jones’ model (Jones, 1991) and the modified Jones model (Dechow et al., 1995). These models have been largely used and tested for the private sector (DeFond and Jimbalvo, 1994; Subramanyam, 1996; Bartov et al., 2001; McNichols, 2000). Out of the private sector, they have also been used by Leone and Van Horn (2005) to detect accounting numbers management in US nonprofit hospitals.

The Jones’ model is:

\[ \text{ACCR}_{jt}/\text{TA}_{jt-1} = ?_1/\text{TA}_{jt-1} + ?_2(\text{REV}_{jt}/\text{TA}_{jt-1}) + ?_3(\text{PPE}_{jt}/\text{TA}_{jt-1}) + ?_{jt} \] 

Where,

\( \text{ACCR}_{jt} \) = Total accruals for local government \( j \) in year \( t \),

\( ? \text{REV}_{jt} \) = Change in income from services for local government \( j \) in year \( t \),

\( \text{PPE}_{jt} \) = Gross tangible fixed assets for local government \( j \) in year \( t \), and

\( \text{TA}_{jt-1} \) = Total assets for local government \( j \) in year \( t-1 \)

The \( ? \text{REV} \) term controls for normal levels of working capital accruals related to income from services, and the \( PPE \) term controls for normal levels of amortisation and
depreciation expense accruals. Consistent with prior literature, and to mitigate estimation problems, all variables are scaled by lagged assets.

We also estimate expected accruals using the modified Jones’ model (Dechow et al., 1995). This model controls for earnings management due to abnormal increases in income, assuming that all change in credit services are due to earnings management. The model is:

\[
\text{ACCR}_{jt}/\text{TA}_{jt-1} = \frac{1}{\text{TA}_{jt-1}} + \beta_2 (\text{REV}_{jt}/\text{TA}_{jt-1} - \beta_3 \text{AR}_{jt}/\text{TA}_{jt-1}) + \beta_3 (\text{PPE}_{jt}/\text{TA}_{jt-1}) + \epsilon
\]  

Where,

\( \beta_3 = \text{Change in accounts receivable (debtors) for local government j in year t}. \)

Expected accruals of each local entity are obtained from the estimated models (equations [3] and [4]). Finally, abnormal accruals (ABACC\text{R}_{jt}) are calculated as in [1]. Positive abnormal accruals imply an income-increasing strategy, whereas negative abnormal accruals mean an income-decreasing one.

To test for earnings management, regardless of whether local entities follow an income-increasing or an income-decreasing strategy, we use absolute abnormal accruals (Wardfield et al, 1995; Reynold and Francis, 2000; Frankel et al, 2002; Ballantine et al, 2008). We test for the null hypothesis that the mean of absolute abnormal accruals is equal to zero.

### 3.3. Testing for the zero “(Surplus)/Deficit for the year” hypothesis

We expect local authorities to use abnormal accruals in order to make the “(surplus)/deficit for the year” figure close to zero. The (surplus)/deficit for the year is the difference between expenditure and income, being negative when there is surplus and positive when there is deficit.

We define pre-managed income (EBAA) as the surplus that a local entity would report without accounting numbers management, that is the surplus (minus deficit) before abnormal accruals. That is:

\[
\text{EBAA}_{jt} = -\text{DY}_{jt} - \text{ABNACCR}_{jt}
\]  

where, \( \text{DY}_{jt} = \text{(Surplus)/Deficit for the year for local entity j in year t} \)

It is expected that the higher pre-managed income is, the more local authorities will be prone to use income-decreasing procedures to get (surplus)/deficit figure close to zero. In consequence, the lower abnormal accruals will be, e.g., with higher abnormal amortisation expense since amortisation expense is a negative accrual. Conversely, the lower pre-managed income is, the more local entity will be prone to use income-increasing procedures to get (surplus)/deficit figure close to zero, in consequence, the
higher abnormal accruals will be. In consequence, we expect an inverse relationship between pre-managed income and abnormal accruals.

Following Leone and Van Horn (2005), we estimate the following regression:

\[
\frac{\text{ABNACCR}_j}{\text{TA}_{j-1}} = \beta_1 + \beta_2 \frac{\text{EBAA}_j}{\text{TA}_{j-1}} + \beta_3 \frac{\text{INCOME}_{j-1}}{\text{TA}_{j-2}} + \epsilon_j
\]  

[6]
Where,

\[ \text{ABNACCR}_{jt} = \text{Abnormal accruals for local government } j \text{ in year } t, \]
\[ \text{EBAA}_t = \text{Pre-managed income for local government } j \text{ in year } t \]
\[ \text{INCOME}_{jt-1} = \text{- Net Operating Expenditure for local government } j \text{ in year } t-1, \]
\[ \text{TA}_{jt-1} = \text{Total assets for local government } j \text{ in year } t-1 \]

As we expect an inverse relationship between abnormal accruals and pre-managed income, we expect \( ?_2 \) to be negative. As in Leone and Van Horn (2005), we include lagged income (INCOME\(_{jt-1}\)) as an independent variable because past performance has been shown to be positively related to current-period discretionary accruals.

4. RESULTS

4.1. Results for the accounting numbers management hypothesis

Table 1 reports the regression results for the Jones’ model and the modified Jones’ model. In both regressions, the F-statistic values indicate that the models are globally significant. All estimated coefficients but \( ?_2 \) in the Jones Model are significant and have the expected sign.

Table 1. Regression results from the Jones’ model and the modified Jones’ model (N=335)

<table>
<thead>
<tr>
<th></th>
<th>Estimated ( ?_1 ) (p-value)</th>
<th>Estimated ( ?_2 ) (p-value)</th>
<th>Estimated ( ?_3 ) (p-value)</th>
<th>F-statistic (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jones’ model</td>
<td>-1,000.736 (0.050)</td>
<td>-0.132 (0.224)</td>
<td>-0.042 (0.000)</td>
<td>60.734 (0.000)</td>
</tr>
<tr>
<td>Modified Jones’ model</td>
<td>-1,054.372 (0.011)</td>
<td>-0.267 (0.002)</td>
<td>-0.040 (0.000)</td>
<td>65.070 (0.000)</td>
</tr>
</tbody>
</table>

Table 2 reports descriptive statistics for total accruals and abnormal accruals estimated with the Jones’ model and the modified Jones’ model. The amount of total accruals is, on average, -5.50% of lagged total assets, ranging from -60% to 13% of lagged total assets. Abnormal accruals range from -55% to 22.9% of lagged total assets. Positive abnormal accruals imply an income-increasing strategy and negative abnormal accruals mean an income-decreasing one. That is, there is a wide use of abnormal accruals, which suggests a wide use of accounting numbers management in order to either increase or decrease income. For abnormal accruals, the mean represents around – 0.30% of lagged total assets. The median is 0.0045 (0.0064, for the modified...
model) and 54.03% of abnormal accruals are positive (56.42%, for the modified model).

Table 2. Descriptive statistics for total and abnormal accruals (N=335)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Std. Dev.</th>
<th>Minim.</th>
<th>Maxim.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total accruals</td>
<td>0.0550</td>
<td>0.0451</td>
<td>0.0709</td>
<td>0.016</td>
<td>0.1338</td>
</tr>
<tr>
<td>Abnormal accruals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jones’ model</td>
<td>0.0031</td>
<td>0.0045</td>
<td>0.0721</td>
<td>-0.5455</td>
<td>0.2315</td>
</tr>
<tr>
<td>Modified Jones’</td>
<td>0.0028</td>
<td>0.0064</td>
<td>0.0712</td>
<td>-0.5564</td>
<td>0.1416</td>
</tr>
</tbody>
</table>

The mean of absolute abnormal accruals is significantly different from zero (Table 3) and represents around 4.40% of lagged total assets. Thus, there is evidence of accounting numbers management, regardless of income-increasing or income-decreasing decisions.

Table 3. Test for accounting numbers management (N=335)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute abnormal accruals (Jones’ model)</td>
<td>0.044</td>
<td>0.057</td>
<td>14.236</td>
<td>0.000</td>
</tr>
<tr>
<td>Absolute abnormal accruals (Modified Jones’ model)</td>
<td>0.043</td>
<td>0.056</td>
<td>14.217</td>
<td>0.000</td>
</tr>
</tbody>
</table>

To investigate whether earnings management is used mainly to reduce or to increase “(surplus)/deficit for the year” figures, we test the null hypothesis that the proportion of negative abnormal accruals is the same as the proportion of positive abnormal accruals. The binomial test (Table 4) yields a Z-statistic of 1.4752 (p-value = 0.155) for the Jones’ model and 2.3493 (p-value = 0.022) for the modified Jones’ model. This means that the proportion of positive abnormal accruals, that is, an income increasing behaviour, is significantly higher than 50% at a less than 5% level when we estimate abnormal accruals with the modified Jones’ model, not with the Jones’ model. In consequence, our results show evidence that most local entities in England use accounting practices for earnings management, but there is not a clear tendency, on average, whether the purpose is to increase or to decrease income.

Table 4. Income-increasing/ decreasing accounting numbers management

<table>
<thead>
<tr>
<th></th>
<th>Median</th>
<th>% of</th>
<th>Z</th>
<th>p-value</th>
</tr>
</thead>
</table>


4.2. Results for the zero “(Surplus)/Deficit for the year” hypothesis

Table 5 shows the results of the regression in equation [6] estimating abnormal accruals with the Jones model and the modified Jones model. The coefficients for dependent variables are significant and have the expected sign. The coefficient for EBAA (\( ?_2 \)) is negative (-0.961 and -0.916, respectively) and the coefficient for INCOME\(_{jt-1} \) (\( ?_3 \)) is positive, for both measures of discretionary accruals. The negative sign of \( ?_2 \) shows an inverse relationship between pre-managed income and abnormal accruals. This means that the higher pre-managed income is, the lower (and more negative) abnormal accruals are, that is, the more the use of income-decreasing accounting criteria. Also, that the lower pre-managed income is, the more the use of income-increasing accounting practices.

In consequence, our results confirm the hypothesis that local governments use accounting practices to reach “(surplus)/deficit for the year” to be close to zero.

Table 5. Regression results from the zero “(Surplus)/Deficit for the year” hypothesis.

<table>
<thead>
<tr>
<th>Regression model</th>
<th>( ?_1 )  ( t )-statistic</th>
<th>( ?_2 )  ( t )-statistic</th>
<th>( ?_3 )  ( t )-statistic</th>
<th>F-statistic (p-value)</th>
<th>Adjusted R-squared</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted sign</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jones’ model</td>
<td>-0.025 (-3.237***</td>
<td>-0.961 (-13.350***</td>
<td>0.078 (2.899**</td>
<td>91.455 (0.000</td>
<td>0.351</td>
<td>335</td>
</tr>
<tr>
<td>Modified Jones’ model</td>
<td>-0.023 (-3.010***</td>
<td>-0.916 (-12.920***</td>
<td>0.077 (2.877**</td>
<td>85.991 (0.000</td>
<td>0.337</td>
<td>335</td>
</tr>
</tbody>
</table>

* Significant at the 0.1 level. ** Significant at the 0.05 level. *** Significant at the 0.01 level.

5. ACCOUNTING NUMBERS MANAGEMENT AND LEVERAGE

In previous literature, leverage is associated with abnormal accruals. There are two competing explanations regarding the relationship between earnings management and leverage. One theory suggests that companies with higher debt levels have a greater incentive to use accruals to increase earnings due to closeness to debt covenant constraints (Sweeney, 1994; DeFond and Jiambalvo, 1994; Wardfield et al, 1995;
Reynolds and Francis, 2000). According to this theory, local governments with higher leverage are expected to use income increasing accounting criteria.

The other theory is related to accounting conservatism, defined by Watts (2003) as “the asymmetric verification requirements for gains and loses”, that is interpreted in the literature as the tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses. Watts (2003) argue that accounting conservatism is an efficient contracting mechanism in debt markets and suggests that firms with higher leverage have more accounting conservatism than firms with lower leverage. Empirical research find evidence that accounting recognizes bad news in earnings on a timelier basis than it does good news (Basu, 1997; Pope and Walker, 1999; Givoly and Hayn, 2000; Giner and Rees, 2001). Empirical research also finds evidence that firms with higher leverage exhibit more accounting conservatism (Pae, 2007) and that accounting conservatism is more pronounced for countries with bigger debt markets than countries with smaller debt markets (Ball et al, 2008).

According to this theory, local governments with lower (higher) leverage would be expected to use income increasing (decreasing) accounting policies.

Both theories refer to the private sector. To our knowledge, there is no theory or empirical evidence of the relationship between leverage and accounting numbers management in the public sector. To find out the relationship between abnormal accruals and leverage in English local governments, we carry out correlation analysis.

Leverage is measured in the empirical literature by different ratios, mainly: long-term borrowings over total assets (Pae, 2007) and total liabilities over total assets (Warfield et al, 1995; Reynold and Francis, 2001; Frankel et al, 2002, and Balsam et al, 2003). Our first measure of leverage (LEV1) is long-term borrowings over total assets. We also define another measure of leverage (LEV2) that includes long-term and short-term borrowings excluding provisions in order to avoid the effect of accounting numbers management in provisions. Our third measure of leverage (LEV3) is a proxy for total liabilities (including long-term borrowings, current liabilities and provisions) over total assets.

Table 6 reports Pearson correlations between abnormal accruals and our three measures of leverage. For any measure of leverage, the results show that there is a negative correlation between abnormal accruals and leverage in English local governments, that is, local governments with higher leverage use less income increasing (or more income decreasing) accounting policies. Likewise, local governments with lower leverage have more income increasing (or lower income decreasing) activity. These results are consistent with the accounting conservatism theory.
Table 6. Pearson correlations between abnormal accruals and leverage\textsuperscript{a} (N=335)

<table>
<thead>
<tr>
<th>Variable\textsuperscript{b}</th>
<th>Jones’ model</th>
<th>Modified Jones’ model</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEV1</td>
<td>-0.189 ( (0.000) )</td>
<td>-0.198 ( (0.000) )</td>
</tr>
<tr>
<td>LEV2</td>
<td>-0.213 ( (0.000) )</td>
<td>-0.227 ( (0.000) )</td>
</tr>
<tr>
<td>LEV3</td>
<td>-0.267 ( (0.000) )</td>
<td>-0.283 ( (0.000) )</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Significance values are indicated in parentheses.

\textsuperscript{b}LEV1 = Long-term borrowing / Total Assets
LEV2 = (Long-term borrowing + Current Liabilities) / Total Assets
LEV3 = (Long-term borrowing + Current Liabilities + Provisions) / Total Assets
6. SPECIFIC ITEMS IN EARNINGS MANAGEMENT

Abnormal accruals measure accounting numbers management as a whole carried out by an entity. However, accrual amounts for different items in the financial statements are not necessarily all used simultaneously to manage accounting figures. For this reason, we investigate accounting numbers management using specific items. Following Marquardt and Wiedman (2004), we consider three individual accruals components that might be used in reaching “(surplus) deficit for the year” goals, namely, depreciation expense, accounts receivable and accounts payable. We also consider the difference between accounts receivable and accounts payable. It is reasonable to assume that an entity can be interested in, simultaneously, delaying the recognition of liabilities and bringing forward the recognition of revenue, or vice versa, rather than on carrying out only one of those practices. We estimate the abnormal component of each of these accruals to determine whether a particular accrual is used to manage “(surplus) deficit for the year” numbers.

We estimate specific abnormal accruals following the measures developed by Marquardt and Wiedman (2004), most of them are intuitive and draw from the financial statement analysis literature. As in previous studies, in order to allow comparisons, all variables are scaled by lagged total assets.

Therefore, depreciation expense is assumed to be a constant proportion of gross property, plant and equipment. In consequence, the expected level of depreciation expense is obtained by multiplying this proportion from previous year by gross property, plant and equipment for the current year. The abnormal component is the difference between the actual depreciation expense and its expected value. In consequence, the abnormal component of depreciation expense (ABDEP) for entity j in year t is defined as:

$$ABDEP_{jt} = \left[ DEP_{jt} - \left( DEP_{jt-1} \times \frac{PPE_{jt}}{PPE_{jt-1}} \right) \right]/TA_{jt-1}$$

where,

- $DEP_{jt}$ = Depreciation expense for entity j in year t
- $PPE_{jt}$ = Gross property, plant and equipment for entity j in year t

Accounts receivable are expected to keep a constant proportion of income from services because unusual increases in accounts receivable commonly accompany questionable revenue recognition (Mulford and Comiskey, 2002, p. 187). Thus, expected level of accounts receivable is obtained by multiplying the prior year’s closing account balance by the change in income from services. Abnormal component of accounts receivable (ABAR) for entity j in year t is defined as:

$$ABAR_{jt} = \left[ AR_{jt} - \left( AR_{jt-1} \times \frac{REV_{jt}}{REV_{jt-1}} \right) \right]/TA_{jt-1}$$

where

- $REV_{jt}$ = Income from services for local government j in year t
In the same manner, abnormal accounts payable (ABAP) for entity \( j \) in year \( t \) are defined as:
\[
\text{ABAP}_{jt} = \frac{\text{AP}_{jt} - \left( \text{AP}_{jt-1} \times \frac{\text{REV}_{jt}}{\text{REV}_{jt-1}} \right)}{\text{TA}_{jt-1}}
\]

Similarly, we assume that the difference between accounts receivable and accounts payable (AR - AP) is expected to keep a constant proportion of income from services. In consequence, abnormal AR - AP for entity \( j \) in year \( t \) is defined as:
\[
\text{ABAR-AP}_{jt} = \frac{\left( \text{AR}_{jt} - \text{AP}_{jt} \right) - \left( \left( \text{AR}_{jt} - \text{AP}_{jt} \right) \times \frac{\text{REV}_{jt}}{\text{REV}_{jt-1}} \right)}{\text{TA}_{jt-1}}
\]

Table 7 shows descriptive statistics for abnormal accruals for specific items. The item mostly used for accounting numbers management is depreciation. The mean for abnormal depreciation is -0.0269. This means that depreciation is used to reduce (surplus)/deficit for the year figures, on average, 2.69% of previous year total assets. Abnormal accounts receivable and abnormal accounts payable represent, on average, 0.72% and 0.60% of lagged total assets, respectively, and in the contrary direction, being positive for accounts receivable and negative for accounts payable. In consequence, the joint effect of bringing forward the recognition of credits and delaying the recognition of liabilities represents, on average, 1.32% of previous year total assets. However, the median (0.0057) and the third quartile (0.0229) reveal that this practice is not uniformly used, but it is strongly used by a small number of local governments.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>s.d.</th>
<th>Q1</th>
<th>Median</th>
<th>Q3</th>
<th>Correlation with ABNACCR&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal depreciation (ABDEP)</td>
<td>-0.0269</td>
<td>0.0782</td>
<td>-0.0495</td>
<td>-0.0027</td>
<td>0.0036</td>
<td>-0.323 (0.000)</td>
</tr>
<tr>
<td>Abnormal accounts receivable (ABAR)</td>
<td>0.0072</td>
<td>0.0343</td>
<td>-0.0018</td>
<td>0.0023</td>
<td>0.0122</td>
<td>0.176 (0.001)</td>
</tr>
<tr>
<td>Abnormal accounts payable (ABAP)</td>
<td>-0.0060</td>
<td>0.0198</td>
<td>-0.0129</td>
<td>-0.0032</td>
<td>0.0020</td>
<td>-0.028 (0.638)</td>
</tr>
<tr>
<td>Abnormal AR-AP (ABAR-AP)</td>
<td>0.0132</td>
<td>0.0356</td>
<td>-0.0011</td>
<td>0.0057</td>
<td>0.0229</td>
<td>0.185 (0.001)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Significance values are indicated in parentheses. Abnormal accruals are estimated using the Jones model. The results using the modified Jones model are similar.

Table 7 also reports Pearson correlation between total abnormal accruals (ABNACCR) and specific abnormal accruals. All measures, other than abnormal accounts payable (ABAP), are significantly correlated and in the expected directions. The correlation is positive for ABAR and negative for ABDEP. The correlation between ABAR-AP and...
ABNACCR can be either positive or negative. However, the magnitude of the correlation coefficients for ABAR and ABAR-AP is too small to suggest that they explain abnormal accruals. For ABDEP the correlation coefficient is -0.324. This suggests that abnormal accruals are drawn mainly by abnormal depreciation rather than other items.

7. CONCLUSIONS

In this paper, we investigate earnings management in English local governments, its relationship with leverage and the instruments used. Based on data from 335 local governments for financial years 2009 and 2010, we find evidence of a wide use of accounting numbers management, although without a predominant pattern to increase or to decrease income. This study adds to the existing literature in the public and non-profit sectors on confirming the use of either income-increasing or income-decreasing accounting practices in order to reach the “(surplus)/deficit for the year” to be close to zero. Our study supports previous studies (Leone and Van Horn, 2005; Ballantine et al, 2007, Ferreira et al, 2012) that found motivations for earnings management practices in a small range around zero. With similar methodologies as those applied in earlier studies in the public and private sectors, our study researches a different setting, where accounting is based on IFRS in English local governments.

Consistent with the accounting conservatism theory we find that local governments with lower (higher) leverage use more income increasing (decreasing) accounting policies. This result suggests that, as in the private sector, English local governments with higher leverage recognize expenses in results in a earlier basis than they do for revenues.

Finally, our results show that depreciation, accounts receivable, and the difference between accounts receivable and accounts payable are significantly correlated with abnormal accruals. Consistent with other studies (Stalebrink, 2007; Pilcher and van der Zahn, 2010), our findings identify that accounting numbers management by local governments is carried out mainly with depreciation.

We can conclude that English local governments carry out accounting numbers management practices, using mainly depreciation, in order to reach the “(surplus)/deficit for the year” to be close to zero and that more leveraged local authorities operate more conservative accounting choices.
NOTES

1 Prior to 1994/95, English local authorities produced detailed statements of income and expenditure and balance sheets for each service or fund; but no depreciation charges were included (Ellwood, 2003). Accrual accounting was introduced in English local governments in 1994.

2 In August 2010, the UK Department for Communities and Local Government announced plans to put in place new arrangements for auditing England’s local public bodies. Since November 2012 the Audit Commission’s audit practice closed and around 700 of its auditors were transferred to new private-sector employers. http://www.audit-commission.gov.uk.

3 Big-bath behaviour refers to increase expenses when reporting large deficits in order to be able to report more favourable results in future accounting periods.


5 This figure is negative when surplus and it is positive in the case of deficit

6 We have also estimated abnormal depreciation of operational assets, that is, excluding non-operational assets, but the results are similar.

REFERENCES


