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EARNINGS MANAGEMENT AND INSTITUTIONAL DIFFERENCES : BELGIAN EVIDENCE ON AUDIT QUALITY AS A CONSTRAINT ON EARNINGS MANAGEMENT

by

H. VANDER BAUWHEDE

M. WILLEKENS



Katholieke Universiteit Leuven

Naamsestraat 69, B-3000 Leuven

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Abstract

This study reports the results of an exploratory study on earnings management in a continental European institutional environment, i.e. Belgium. The far majority of the literature (both analytical and empirical) focuses on the Anglo-Saxon context. However, major differences exist between Anglo-Saxon and continental European countries. This might result in differences in the importance of various incentives for and constraints on earnings management.

For a pooled sample of 486 firm-year observations of privately held companies in the Belgian textile and paper industries, we tested whether a higher quality audit constrains earnings management more than a lower quality audit. We used the dichotomous variable big6/non-big6 auditor as a measure for audit quality and discretionary accruals as a measure of earnings management. Discretionary accruals were estimated using a cross-sectional version of the Jones' model that was slightly adapted to fit the Belgian context. We performed a univariate as well as a multivariate analysis. In the multivariate analysis, we adapted the control variables to the continental European context. In addition we also tested whether the income smoothing hypothesis holds in Belgium.

Our findings do not support the hypothesis that higher audit quality constrains earnings management more than lower audit quality. This result contrasts those of prior Anglo-Saxon studies (Becker et al., 1998; Francis et al., 1997). The results do however support the income smoothing hypothesis. This finding is (1) consistent with institutional differences being important in earnings management research and (2) the results from a prior Belgian study on earnings management (Branson and Loits, 1997).

Keywords: audit quality, discretionary accruals, earnings management

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**Earnings Management and Institutional Differences:
Belgian Evidence on Audit Quality as a Constraint on Earnings Management**

Heidi Vander Bauwhede¹

Marleen Willekens²

1. Introduction

This paper reports the results of an exploratory study on earnings management in a continental European institutional setting, i.e. Belgium. As (accounting) earnings can be considered an important summary statistic of a firm's financial performance, one can question whether managers do not "manage" those earnings. It is clear that financial, investment and operational decisions can influence earnings. However, accounting decisions too can be used to manage earnings in a particular direction. As GAAP leave some discretion to managers in reporting the financial position, operating results and cash flow of their organization, it is particularly interesting to examine whether they will use this flexibility to manage earnings. Examples of accounting decisions that can influence earnings are accrual decisions, accounting procedure choices and changes, timing of adoption of a mandated accounting change, and the like. This paper deals with earnings management through accounting decisions, and in particular accrual decisions.

A review of the earnings management literature (see Vander Bauwhede and Willekens, 1998a) provides some evidence that managers have incentives to manage earnings, that they do actually engage in earnings management, and that there are factors that constrain their ability to manage earnings. As the major function of auditing is to lend more credibility to the financial statements, it is particularly interesting to examine whether auditing does in fact constrain managers'

¹ Ph.D. student, Department of Applied Economics, Catholic University Leuven, Naamsestraat 69, 3000 Leuven, Belgium. E-mail: Heidi.Vanderbauwhede@econ.kuleuven.ac.be; tel. +32 16 32 69 30).

² Associate professor, Department of Applied Economics, Catholic University Leuven, Naamsestraat 69, 3000 Leuven, Belgium. E-mail: Marleen.Willekens@econ.kuleuven.ac.be; tel. +32 16 32 69 32).

ability to (opportunistically) manage earnings. A related question is, whether differences between auditors (for example, audit quality) will affect this ability to “manipulate” or to “manage” the financial statements. In recent years some Anglo-Saxon research addressed this question. In particular, it was examined whether a high quality audit constrains managers ability to “manipulate” or “manage” earnings more than a low quality audit (DeFond and Jiambalvo, 1991; DeFond and Jiambalvo, 1993; Dechow et al., 1996; Francis et al. 1997; Becker et al.,1998). Some of these studies provide evidence that audit quality has an impact on discretionary accruals³ and thus on earnings management through accounting decisions within GAAP [see, for example, Becker et al. (1998) and Francis et al. (1997)]. The results as to the impact of audit quality on non-GAAP earnings management, however, are mixed.

This study reports on whether a higher quality audit constrains opportunistic earnings management more than a lower quality audit. That is, using the dichotomous variable big6/ non-big6 auditors as a measure of audit quality and discretionary accruals as a measure of (opportunistic) earnings management, we tested both (1) whether clients of big6 audit firms have relatively higher discretionary accruals as compared to clients of non-big6 audit firms and (2) whether clients of big6 auditors had lower amounts of discretionary accruals than clients of non-big6 auditors. In addition, we tested whether an ex post increase in bank loans and/or a desire to smooth income creates incentives to manage earnings. We found that, total discretionary accruals of clients of big6-auditors do not differ significantly from those from their non-big6 counterparts. Moreover, our evidence does not suggest that the need for external financing creates an incentive to manage accruals in Belgium. The results do support the hypothesis that managers use their accounting discretion to smooth income.

Our study contributes to the literature along the following dimensions. First, to our knowledge no study exists on the relationship between audit quality and earnings management in a continental European setting. A review of literature on the Anglo-Saxon and continental European institutional

³ Accruals are “accounting adjustments that are included in the net income to reflect business transactions for which cash was not received in the current period”(Shivakumar, 1998, p.5). Those accruals can be thought of as partly non-discretionary (normal) and partly discretionary (abnormal). Healy (1985, p.370) defines non-discretionary accruals as “accounting adjustments to the firm’s cash flows mandated by accounting standard-setting bodies” and discretionary accruals as “adjustments to cash flows selected by the manager”.

environments shows that there exist major differences between those environments. Therefore, one should question whether the findings of Anglo-Saxon studies are valid in a different institutional setting. Second, our study could add to prior research findings on audit quality in Belgium. Weets and Jegers (1997a), for example, use the financial statement's coherence (that is the number of logical and arithmetical errors in the financial statements) as a direct test of audit quality differences and find an inverse relationship between the size of the audit company in charge and the number of financial statement errors of its clients. Further, they do also find that there is a within big8 quality difference. In addition, a study on audit pricing in Belgium (Branson and Loits, 1995) finds that Big6 firms receive higher fees than non-Big6 firms and the authors suggest that this supports the fact that Big6 auditors provide higher audit quality. Gaeremynck and Willekens (1997), however, fail to find a difference in the likelihood of issuing a qualified opinion between big6 and non-big6 auditors. They conclude that there are no differences between big6 and non-big6 auditors as to independence (which is considered to be one aspect of audit quality in the literature). Third, we also provide additional evidence on income smoothing in Belgium. Branson and Loits (1997) report results on income smoothing through extra-ordinary items, whereas our study provides evidence on income smoothing through accruals management.

The remainder of the paper is organized as follows. The second section presents a brief discussion of the Anglo-Saxon evidence on earnings management incentives and constraints, together with a discussion of the viable impact of institutional differences on earnings management in the continental European setting. Section three describes the hypotheses of the exploratory study, the sample selection procedure, measurement of discretionary accruals, descriptive statistics and univariate results. Our multivariate analysis and results are presented in section four. We conclude with a summary and discussion.

2. Earnings management and institutional differences: A discussion of incentives and constraints

This study investigates whether audit quality acts as a constraint on earnings management in a continental European setting, i.e. Belgium. It also provides Belgian evidence about the impact of some earnings management incentives which were found to be of significance in Anglo-Saxon studies. Past empirical earnings management research has mainly focused on the Anglo-Saxon institutional environment. There exist however major institutional differences between Anglo-Saxon and continental European countries⁴ along various dimensions [see, for example, Flower (1997), Ball (1997), Joos and Lang (1994), FEE (1997), Paisey (1991) and Nobes (1984)]. Those are, for example, differences in legal systems, providers of finance (in particular the importance of capital markets), in ownership and corporate governance and in the link between tax and accounting. These differences have an impact on accounting, and indeed accounting differences can be observed between countries. These include: different source of demand for accounting, different conceptual frameworks and accounting systems, different sources of accounting rules and degree of detail in which they are specified. It seems a logical consequence that those differences will in turn have an impact on the incentives and ability to manage earnings. Since Belgium has different institutional and accounting characteristics than the U.S. we expect that the ability and the incentives to manage earnings may be different and hence the results in our study may deviate from results in prior American studies. A more detailed review and discussion of earnings management and institutional differences can be found in Vander Bauwhede and Willekens (1998a).

Empirical earnings management studies mainly report on the *incentives* to manage earnings. Evidence exists that explicit contracts, such as bonus plans and debt covenants⁵, as well as implicit

⁴ We note that the typology of countries as either “Anglo-Saxon” or “continental European” is rudimentary. Some countries on the European continent have characteristics of Anglo-Saxon countries along some dimensions. There also exist differences between countries belonging to one category or the other, especially between continental European countries. And finally, given the creation of a European internal market (and the creation of a European capital market in particular) and the globalization of the economy in general, various institutional differences are diminishing.

⁵ For a discussion: see, for example, Watts and Zimmerman (1986). Studies on the bonus plan hypothesis include Healy (1985), McNichols and Wilson (1988), Gaver et al. (1995), Holthausen et al. (1995) and Dechow et al.

contracts⁶ (for example, contracts between a firm and its customers, suppliers, creditors, employees, etc...) induce earnings management. We believe however that earnings management induced by external contracts may be less important in continental European countries (and in Belgium). Widespread ownership in Anglo-Saxon countries result in more pronounced problems with respect to conflict of interest and information asymmetry as compared to continental European countries where ownership is concentrated. With concentrated ownership explicit contracts are less effective in alleviating agency costs and implicit contracts are created between a firm and its major shareholders.

Anglo-Saxon earnings management studies also provide evidence that a firm's relation with capital markets create incentives to influence earnings⁷. From this perspective earnings are managed to communicate private information to investors about firm value, to sell stock for a higher price and to raise additional financing on more favorable terms. We believe that earnings management induced by a firm's relation with capital markets may be less important in continental European countries (and in Belgium). The incentives to manage earnings created by capital markets do not apply to the vast majority of Belgian companies because only a minority of Belgian companies are listed on the Brussels stock exchange.

Further Anglo-Saxon evidence supports the hypothesis that the political and regulatory process⁸ and some specific circumstances (such as for example labor union contract negotiations⁹, proxy contests¹⁰, and earnings decreases or losses¹¹) also seem to induce earnings management. We believe that incentives created by the political and regulatory process may be especially important in continental Europe (and in Belgium), since demand for disclosure of financial information mainly

(1996). Studies on incentives created by debt covenants are, for example, DeFond and Jiambalvo (1994), Sweeney (1994), DeAngelo (1994) and Dechow et al. (1996).

⁶ Studies are, for example, Bowen et al. (1995) and Kasanen et al. (1996).

⁷ For a discussion, see, for example, Healy and Palepu (1993). Studies include Neill et al. (1995), Dechow et al. (1996), Subramanyam (1996), Rangan (1998), Shivakumar (1998) and Teoh et al. (1998).

⁸ A hypothesis often tested in accounting choice studies is the *political cost hypothesis/ size hypothesis* (Watts and Zimmerman, 1986). Recent research on the impact of the political and regulatory process on earnings management includes Jones (1991), Guenther (1994), Bowen et al. (1995), Hunt et al. (1996), Key (1997) and Han and Wang (1998).

⁹ Liberty and Zimmerman (1986)

¹⁰ DeAngelo (1988)

¹¹ Burgstahler and Dichev (1997)

stems from government in these countries and there is a pronounced link between financial and tax reporting.

Anglo-Saxon research also provides (mixed) evidence on earnings smoothing¹², that is, reduction in the variability of reported earnings or alignment of reported earnings with expected earnings by management. We believe that income smoothing may also be important in continental European countries, but the major reason for smoothing may be different. In our view tax avoidance may be paramount incentive for income smoothing in continental Europe (and Belgium).

Some recent empirical studies also examine factors that *constrain* earnings management. Anglo-Saxon evidence exists that prior accounting decisions¹³, ownership structure¹⁴, and internal governance¹⁵ (i.e. audit committees and/ or characteristics of the board of directors) constrain earnings management. In addition, there is evidence that audit quality (measured by the dichotomous variable Big6/non-Big6) has an impact on discretionary accruals and thus on earnings management within GAAP [see, for example, Becker et al. (1998), and Francis et al. (1998)]. The results as to the impact of audit quality on non-GAAP earnings management [see, for example, DeFond and Jiambalvo 1991, DeFond and Jiambalvo 1993, Dechow et al. (1996)] are however mixed. We question whether audit quality may work as a constraint in a continental European setting. Unlike the U.S., stock markets are less developed in continental European countries and auditing is mandatory even for closely held companies as soon as certain legal form and size criteria are met. A result may be that many continental European (and Belgian) firms only demand auditing because it is compulsory and less so for agency or signaling reasons. If this holds to be true, firms will try to fulfill this requirement as cheaply as possible and demand a level of audit quality as low as possible (but that still fulfills the legal requirements). A consequence is that the supply of high quality audits (by big6 audit firms) is no

¹² Studies include Eckel (1981), McNichols and Wilson (1988), Hunt et al. (1996), Subramanyam (1996), DeFond and Park (1997) and Young (1998).

¹³ See, for example, DeFond and Jiambalvo (1991) and Sweeney (1994).

¹⁴ Studies include DeFond and Jiambalvo (1991), Warfield et al. (1995) and Rajgopal and Venkatachalam (1998).

¹⁵ See, for example, DeFond and Jiambalvo 1991, Dechow et al. 1996, Peasnell et al. 1998 and Beasley et al. 1996.

longer price competitive in continental European countries and all audit firms (thus also the big6) will supply an equal (low) level of audit quality.

3. Audit quality as a constraint on earnings management in Belgium: research design and univariate analysis

3.1 Hypotheses

In Anglo-Saxon studies on the relation between audit quality and earnings management it is hypothesized that higher quality audits result in more credible financial statements than the financial statements that were subject to lower quality audits. As a result higher quality audits should constrain opportunistic earnings management to a higher degree than lower quality audits. Both Becker et al. (1998) and Francis et al. (1997) formulated hypotheses based on this idea. Our aim was to investigate whether the above reasoning and the proposed hypotheses hold in a continental European context and we use Belgium as a test case.

In the hypotheses of both Becker et al. (1998) and Francis et al. (1997), the dichotomous variable big6/non-big6 is used as a proxy for audit quality and discretionary accruals as a measure for earnings management. In particular, Becker et al. (1998, p.8) hypothesize that “ceteris paribus, firms with non-Big Six auditors report relatively higher discretionary accruals compared to firms with Big Six auditors”. They base this hypothesis on the argument that “earnings overstatements are more frequent and of greater concern to auditors” (Becker et al., 1998, p.9). In particular, they report that prior research indicates that (1) “managers are more likely to overstate than understate earnings” (Becker et al., 1998, p.8) and (2) auditors are more likely to be sued for earnings’ overstatement than earnings’ understatement. However this need not be the case in continental European countries. To the contrary, the close link between tax and financial reporting in continental European countries suggests that firm managers would rather understate than overstate earnings and that, as a result, auditors may perhaps be more concerned with earnings understatements. As a result our suggestion is

to test the hypothesis that, *ceteris paribus*, firms with non-big6 auditors report relatively lower discretionary accruals compared to firms with big6 auditors.

However, due to a lack of research on earnings management in continental European countries, there is no prior evidence that supports our presumption that, in Belgium, earnings understatements are more likely than earnings overstatements, and so auditors would be more concerned with earnings understatements. As mentioned above, managers might also be inclined to smooth earnings. Therefore we also tested the ‘non-directional’ hypothesis proposed by Francis et al. (1997) that “firms using Big 6 auditors will have smaller amounts of discretionary (unexpected) accruals than firms using non-Big 6 auditors” (Francis et al., 1997, p. 7).

3.2 Sample selection

As this is an exploratory study on the relation between audit characteristics and accruals management, we selected from the CD-Rom issued by the “Balanscentrale” of the “Nationale Bank van België”¹⁶, all firms that (1) operate in the textile and paper industries (NACE-code¹⁷ 43 and 47) and (2) published their financial data in form of the complete scheme¹⁸. Note that in contrast to Anglo-Saxon studies, our samples consists of privately held companies¹⁹. We further required that for each firm the financial data would be available over the period 1990 through 1994²⁰. Moreover, as in Becker et al. (1998) we deleted those firms that changed auditors over the period of analysis (that is 1990 through 1994) as to avoid that the samples of big6 and non-big6 client firms would not be independent. In order to determine whether a firm was audited by a big6 or non-big6 auditor and to determine whether a firm changed auditors, we scanned the CD-ROM and used membership lists of

¹⁶ The “Balanscentrale” of the “Nationale Bank van België” is the department of the Belgian National Bank where firms have to submit their financial statements.

¹⁷ The NACE-code is a classification chart which is comparable to the US SIC.

¹⁸ Belgian companies have to prepare their financial statements in a standard format. However, not all firms are required to prepare financial information in the same degree of detail. Therefore, conditional on their legal business form and size, firms have to prepare financial data in the full or abridged format. As the requirement to appoint an auditor is conditional on similar legal form and size criteria, the publication of financial data in full format was used as a sample selection criterion.

¹⁹ Only 2 companies (out of 162) were listed on the Brussels Stock Exchange.

²⁰ We had to search both the 1993 and 1996 CD-Roms because a CD-Rom of a given year only provides data for a limited number of years. From the 1993 CD-Rom, we obtained the data for 1990, 1991 and 1992, and from the 1996 CD-Rom, we obtained the data for 1993, 1994 and 1995.

the IBR (which is the Belgian Institute of Certified auditors). This selection procedure resulted in a sample of 75 firms for the textile industry (16 firms with big6 auditors and 59 firms with non-big6 auditors) and 87 firms for the paper industry (27 firms with big6 auditors and 60 firms with non-big6 auditors), that did not change auditors over the period of analysis and for which financial data were available on CD-Rom. That is, a pooled sample of 810 firm-year observations. However, in the analysis, only 486 firm-year observations were used (years 1991 through 1993) as we required that firms did not change auditors the years before and after those used in the analysis. This requirement was imposed, because auditor changes were found to be related to negative discretionary accruals (DeFond and Subramanyam, 1997).

3.3 Measurement of discretionary accruals

Total accruals were computed as change in working capital minus depreciation. As Belgian firms are not obliged to report operating cash flow in the financial statements, operating cash flow was calculated by adding non-cash expenses to income after taxes and cost of debt financing and correcting for changes in working capital²¹. In order to partition the total accruals and working capital accruals in their discretionary and non-discretionary components, we used a cross-sectional version of the model described by Jones (1991). Similar approaches can be found in DeFond and Jiambalvo (1994), Francis et al. (1998), and Becker et al. (1998). In particular, year and industry-specific ordinary least squares estimates of the regression coefficients in the following model were calculated. Discretionary accruals are then computed as the error terms of this regression model.

$$TA_{ijt} / A_{ijt-1} = \alpha_{jt} (1/A_{ijt-1}) + \beta_{1jt} (\Delta REV_{ijt} / A_{ijt-1}) + \beta_{2jt} (ITFA_{ijt} / A_{ijt-1}) + \varepsilon_{ijt}$$

Where:

TA_{ijt} = Total accruals for firm i in industry j for year t

A_{ijt-1} = Total assets for firm i in industry j for year $t-1$

²¹ For the exact computations, see footnote c of table I

ΔREV_{ijt} = change in revenue from prior period for firm i in industry j for year t

ITFA_{ijt} = sum of accrued set up costs, intangible and tangible assets for firm i in industry j for year t

However, unlike the Jones' model, we included not only revenues and property plant and equipment in the analysis, but replaced the latter explanatory variable by the sum of both accrued set up costs tangible assets and intangible assets, for the non-cash expenses that are part of accruals included depreciation and amortization on these accounts.

3.4 Descriptive statistics

Table I presents an overview of the descriptive statistics for the big6 and non-big6 samples. Two measures of size were included, that is the natural logarithm of total assets and natural logarithm of sales. Within samples, both measures result in a comparable size measure. Further, both measures indicate that the big6 and non-big6 samples are almost of equal size with a mean log of assets of 12.61 and a mean log of sales of 12.81 for the big6 sample and a mean log of assets of 12.40 and a mean log of sales of 12.69 for the non-big6 sample. Income (both before and after extra-ordinary items), however, is larger for the big6 sample firms. The mean and median income before extra-ordinary items, for example, are 3.5% and 2.69% of total assets for the big6 sample and 1.8% and 1.72% for the non-big6 sample. For both samples, mean and median income after extra-ordinary items is somewhat larger.

Further, cash flow, total accruals, absolute value of total accruals and change in working capital accruals are almost identical for both samples. Depreciation, however is found to be significantly smaller²² for the big6 sample firms as compared to the non-big6 sample firm. Mean and median depreciation are, respectively 7.63 % and 6.41% of total assets for the big6 sample and respectively 9.06% and 7.92% of total assets for the non-big6 sample. Paid-in capital stock was significantly larger²³ for the big 6 sample firms, with mean and median paid-in capital for the big6

²² t-test for differences in means and Wilcoxon rank sum test for differences in medians between the big6 and non-big6 samples, with p-values of 0.0329 and 0.0293, respectively.

²³ t-test for differences in means and Wilcoxon rank sum test for differences in medians between the big6 and non-big6 samples with p-values of 0.0030 and 0.0001, respectively

sample of 27.5% and 20.5% of total assets, respectively and mean and median paid-in capital for the non-big6 sample of 19% and 11.9 % of total assets, respectively.

Further, no significant differences could be found between the big6 and non-big6 samples as to their total liabilities, leverage and the difference between this year's premanaged earnings and prior year's reported earnings. Mean liabilities are 58% of total assets for the big6 sample and 59% for the non-big6 sample. Mean leverage (which was computed as the ratio of long-term bank loans over total assets) is slightly larger for the non-big6 sample. The mean is almost 14% of total assets for the big6 sample and 15% for the non-big6 sample.

In addition, for both samples, there is on average an increase in long term bank loans, with a mean of 2% for the big6 sample and a mean of 3.3 % for the non-big6 sample. Moreover, the standard deviation is remarkably larger for the non-big6 sample (0.0760 for the big6 sample and 0.1341 for the non-big6 sample).

TABLE I

3.5 Univariate Results

Tables II presents the results of the univariate analysis for the total discretionary accruals. In particular, we compared mean and median (1) discretionary accruals, (2) absolute value of discretionary accruals and (3) signed (that is positive and negative) discretionary accruals for the big6 and non-big6 samples, using the two-sample t-test and Wilcoxon rank sum test, respectively. On the one hand, "raw" discretionary accruals are examined as they could inform us whether clients of non-big6 auditors report relatively lower discretionary accruals than firms of big6 auditors. On the other hand, absolute values of discretionary accruals are examined to test the hypothesis that amounts of discretionary accruals of clients of big6 auditors are smaller as compared to clients of non-big6 auditors. Moreover, as an auditor's position regarding discretionary accruals might differ dependent on whether he is faced with positive or negative discretionary accruals, also signed accruals are examined.

TABLE II

Table II shows that clients of big6 auditors do not report discretionary accruals that are significantly different from clients of non-big6 auditors. Moreover, neither for the absolute value of discretionary accruals nor for the signed accruals, a significant difference could be found between the big6 and non-big6 client firms. As a result, the univariate results provide no support for the hypothesis that big6 auditors constrain earnings management more than non-big6 auditors.

4. Multivariate analysis and results

4.1 Selection of control variables and additional test variable

The results of the univariate analysis may be influenced by differences between big6 and non-big6 samples other than ‘audit quality’ and which were not controlled for in the univariate analysis. Therefore a multivariate analysis was performed in which we controlled for possible differences between big6 and non-big6 client firms. Since prior research on earnings management in continental European countries is lacking, we critically analyzed factors that were found to be related to auditor choice and accruals management in Anglo-Saxon studies. We then included those that we assessed to be also of relevance to auditor choice and accruals management in a continental European accounting setting.

We included *size* as a first control variable as it is considered to be related to auditor choice in the Anglo-Saxon literature. Since measurement error in discretionary accruals is likely to occur for firms with extreme financial performance and this might result in misspecified tests for earnings management (Young, 1998; Dechow et al., 1995), we included *cash flow from operations* as a second variable to control for this potential bias. A third variable that was included in the multivariate analysis was *leverage*. This variable is used as a proxy for different constructs in the literature. Becker et al. (1998) suggest that leverage can be a proxy for potential income-decreasing accruals management in firms suffering from financial distress, and hence leverage is related to accruals.

DeFond (1992) finds evidence that changes in leverage are positively correlated with changes in audit quality. As a result leverage is also a factor that influences auditor choice²⁴.

The next control variable that we included was a measure for the need for external financing. Several Anglo-Saxon studies motivate the inclusion of a control variable related to the need for external financing or the raising of external funds. Dechow et al. (1996), for example, find that the likelihood of earnings manipulation is positively associated with the need for external financing. Therefore, it is plausible that the need for external financing could also affect discretionary accrual choices. However, as (1) only a small portion of Belgian firms are listed on the stock exchange and (2) banks are considered to be “the single most important source of finance in Europe” (Paisey, 1991, p.29), we do not focus on external financing through bond or equity issues (as in previous Anglo-Saxon research, e.g. Dechow et al. (1996)), but through long term bank loans. However, it is argued that in continental European countries firms have closer relations with their providers of finance and that hence those providers of finance have access to internal information. Information other than earnings therefore becomes more important in providing long term debt and the probability that earnings management will be detected is likely to increase. As a result, managers may no longer be inclined to manage earnings in order to obtain external financing on more favorable terms. However we are not aware of prior literature that could be informative on which of these hypotheses is the more important. Therefore, we included a dummy variable indicating whether the *ex post increase in long term bank loans* was larger than 10% or not, in order to control and test for the impact of an increase in long term bank loans on accruals.

Finally, we argue that testing for income smoothing may be relevant in the continental European setting. Ball (1997, p.2), for example, notes that in code-law countries reported earnings are directly linked to, for example, tax and dividend payments. Therefore, he argues, agents for those stakeholders who are involved in writing the accounting code and corporate governance have incentives to reduce volatility in corporate distributions and thus also in reported earnings. Further,

²⁴ In Anglo-Saxon studies leverage is used as a proxy for (1) the existence and/or (2) the closeness to debt covenant constraints. Therefore, leverage was often included in earnings management research as a proxy for

Kasanen et al. (1996) found evidence of earnings management in order to be able to pay out target dividends. In addition, Watts and Zimmerman (1986, p. 234) suggest that the political process creates incentives to reduce the variance of reported earnings changes. Moreover, they suggest taxes as being an incentive created by the political process to have an impact on accounting procedure choice. And because there is a strong link between commercial and tax reporting [see, for example, FEE (1997)] in continental European countries, the political process may create major incentives to reduce the variance of reported earnings. In Belgium, income smoothing may also be induced by the possibility of labor union interference. Note also that Branson and Loits (1997) report some Belgian evidence on the fact that managers try to reduce the variance from prior year earnings through extra-ordinary items. Given all the above, we also tested an additional hypothesis on earnings management in Belgium, i.e. income smoothing. We hypothesize that firms that report premanaged earnings lower (higher) than prior year reported earnings will have an incentive to increase (decrease) earnings through discretionary accruals. In order to test this, we included a dummy variable indicating whether *this year's premanaged earnings decreased or increased* as compared to prior year's reported earnings. Following DeFond and Park (1995), premanaged earnings were computed as this year's reported earnings minus discretionary accruals.

4.2 *Multivariate analysis*

Given our major test variable, that is auditor quality, the additional test variable on income smoothing and the control variables discussed in section 6.1 the following regression model has been estimated:

$$DA_{it} = \alpha + \beta_1 \text{AUDITOR}_{it} + \beta_2 A_{it} + \beta_3 CF_{it} + \beta_4 LEV_{it} + \beta_5 \Delta LTBLD_{it} + \beta_6 \Delta E_{it} + \varepsilon_{it}$$

Where:

DA_{it} = discretionary accruals for firm i in year t

$AUDITOR_{it}$ = dummy variable, 1 if non-big6 auditor, 0 if big6 auditor for firm i in year t

possible income-increasing accruals management to avoid debt covenant violation (Becker et al., 1998). However, we expect the impact of accounting based debt covenants in Belgium to be of minor importance.

A_{it} = natural logarithm of total assets for firm i in year t

CF_{it} = cash flow from operations for firm i in year t scaled by prior year total assets

LEV_{it} = leverage measured as long term debt to total assets for firm i year t

$\Delta LTBLD_{it}$ = dummy variable, 1 if in $t+1$ long term bank loans increased by more than 10 % as compared to year t , 0 otherwise

ΔE_{it} = dummy variable, 1 if for firm i in year t earnings from “normal” operations before discretionary accruals increased as compared to year $t-1$ reported (that is after discretionary accruals) earnings from “normal” operations, -1 if for firm i in year t earnings from “normal” operations before discretionary accruals decreased as compared to year $t-1$ reported (that is after discretionary accruals) earnings from “normal” operations

This regression was estimated for the pooled sample and the sample from the paper and textile industries separately. However, due to missing values for the bank loan dummy ($\Delta LTBLD_{it}$), the number of firm-year observations that was used in the analysis was reduced from 478 to 294. Therefore, we also estimated the regression without inclusion of the bank loan dummy. As the bank loan dummy ($\Delta LTBLD_{it}$) was never found to be significant and results are comparable between both regression models, we do only report the results for the model without the bank loan dummy. Table III presents the results of the OLS estimation of that regression model²⁵.

TABLE III

The test variable, AUDITOR, was not significant for the models estimated using the pooled sample and sample from the paper industry. However, we found a weakly significant negative coefficient for the textile industry (p-value of 0.0688 and 0.0823 with and without inclusion of the bank loan dummy respectively). This finding supports the hypothesis that, in continental European countries, discretionary accruals for clients of non-big6 auditors are likely to be lower, then for their

²⁵ In order to examine whether there was a problem of multicollinearity, both the correlation matrix and the variance inflation factors (VIF) were computed. Neither the VIF nor the correlation matrix indicated multicollinearity (no VIF larger than 2 and no (absolute value of) pearson correlation coefficient larger than 0.51)

big6 counterparts. This suggest that the differential impact of big6 Vs non-big6 auditors in constraining earnings management may be industry specific.

Further, the control variable cash flow (CF_{it}) is found to be significantly negatively related to discretionary accruals in all models. This is consistent with the finding of Becker et al. (1998). The results as to the size measure (A_{it}) are mixed and leverage (LEV_{it}) is never found to be significant. Moreover, the variable $\Delta LTBLD_{it}$ (a measure for the need for external financing) was never significant. As noted above, this may be explained by the fact that, in continental European countries, managers are discouraged to manage earnings, since bankers have access to and use other information in their decision process on the provision of long term loans²⁶.

The dummy variable that measures the direction of the change of premanaged earnings as compared to prior year reported earnings (ΔE_{it}) is found to be significantly negatively related to discretionary accruals in all models. This indicates that in case premanaged earnings are increased (decreased) as compared to prior year reported earnings, managers use their accounting discretion over depreciation and working capital accruals, to decrease (increase) earnings. This is consistent with our expectation that continental European firms are inclined to smooth earnings. Moreover, this result is consistent with the findings of Branson and Loits (1997) that Belgian firms try to reduce the variance from prior year earnings through extra-ordinary items. It is also consistent with their presumption that management uses less visible methods to manage earnings (Branson and Loits, 1997, p.18).

In sum, consistent with the findings of the univariate analysis, the results of the multivariate analysis for the pooled sample and sample from paper industry do not support the hypothesis that big6 auditors constrain earnings management more than non-big6 auditors. The results of the multivariate analysis for textile industry, however, provide (weak) evidence for this hypothesis. This suggests that the differential impact of big6 Vs non-big6 auditors in constraining earnings management may be industry specific. In addition, we found no evidence that, in continental European countries, a need

²⁶ An alternative explanation, however, is that the timing of earnings management becomes relevant. Firms may not manage earnings the year before but, e.g. two years before they obtain new funds.

for additional external funds creates incentives to manage accruals. However, the results do support the hypothesis that managers use their accounting discretion to smooth income.

5. Summary and discussion

This paper presented the results of an exploratory study on earnings management in a continental European institutional environment, i.e. Belgium. Most empirical studies were performed in Anglo-Saxon countries and focus on the incentives to manage earnings and less so on factors that may constrain earnings management. Since there exist institutional differences between Anglo-Saxon and continental European countries we have argued that the factors that create incentives and constraints on earnings management may be different for these environments, and that therefore some results of Anglo-Saxon studies may not hold in continental European countries.

We performed an exploratory study on earnings management in Belgium. In contrast to prior Anglo-Saxon studies (Becker et al., 1998; Francis et al., 1998), our findings do, in general, not support the hypothesis that higher quality audits would constrain earnings management more than lower quality audits. We argue that this may be the result of differences in institutional settings. In particular, it is possible that in Belgium big6 auditors do not “sell” (provide) a different level of audit quality as compared to non-big6 auditors (even if they might have the potential to do so) because there might be no demand for it. As in most continental European countries financial statement auditing by a certified auditor is mandatory in Belgium for privately held companies if they meet certain legal form and size criteria. Compared to the U.S. where auditing is in general only mandatory for publicly traded companies, audit demand is far more regulated in continental Europe. Moreover, since most Belgian companies are privately held (note that in our sample all but two companies are indeed privately held companies), it is not unreasonable to expect much less ‘voluntary’ agency and signaling demand for auditing. A result of this may be that in many cases auditing is only demanded because it is legally required. This would then put a lower bound on the audit quality level demanded by Belgian companies and hence on the level audit quality actually supplied by audit firms. Audit quality (supplied) is generally considered to depend on both the probability of detecting (competence)

and reporting (independence) a financial statement error (see, DeAngelo, 1981). The higher probability of discovering a financial statement error depends on the auditor's training, specialization and technological capabilities which are likely to be better for big6 auditors (see, Becker, 1998). However, while this may make big6 auditors more competent, the training, expertise and technological capabilities provided by and accumulated within big6 firms (that are from Anglo-Saxon origin) may not be useful when they audit continental European (and thus also Belgian) client firms.

Another explanation for our results on audit quality and earnings management is as follows. Litigation against auditors works as a deterrent for below standard audit (quality) performances. From the "deep-pocket" theory, one can infer that, especially big6 auditors are likely to be sued. This is so because they have the deepest pockets due to the fact that they provide more collateral (see, for example, DeAngelo, 1981) and have made larger investments in brand name (see, for example, Klein and Leffler, 1981). However, the continental European environment is far less litigious than the Anglo-Saxon environment. This may result in the fact that, in the continental European countries, big6 auditors do no longer have a greater incentive to detect and report breaches as compared to non-big6 auditors, and hence to provide a higher level of audit quality than the minimum required by GAAS .

Our results do not support the hypothesis that the need for bank loan financing induces earnings management. We argued that this can be explained by institutional differences between Anglo-Saxon and continental European countries. In particular, in continental European countries, managers may be discouraged to manage earnings, as bank loan officers have (due to their close relations with firms) access to and use information in addition to the published financial statements.

The results do, however, support the income smoothing hypothesis, i.e. that firms try to reduce the variance of their reported earnings number. In particular, we find that firms for which this year's premanaged earnings are higher (lower) than its prior year reported earnings use their accounting discretion over accruals to decrease (increase) this year's reported income number. This finding may result from (1) close link between reported earnings and dividend payments and (2) the desire to reduce the possibility of government and labor union intervention.

Finally we note several limitations to our study. First, it is not clear whether the results hold across other industries (than the paper and textile industries), other continental European countries and time. The results, for the multivariate analysis of the textile industry, for example, already suggest that earnings management may be industry-specific. Further research is needed to find additional support for and to refine our arguments. Second, the analysis only allows to draw conclusions as to earnings management through depreciation and working capital accruals, since the study did not address the possibility of earnings management through other accounting decisions (for example, management of other accruals than depreciation and working capital accruals and earnings management through accounting procedure choices or changes), “real” earnings management (i.e. earnings management through operating, investment and financing activities) and hence management of the underlying cash flows. Third, the results depend on the (implicit) assumption that the Jones’ model correctly partitions total accruals in its discretionary and non-discretionary components. All the above limitations offer worthwhile avenues for future research. Also, (1) our discussion of the impact of institutional differences on earnings management incentives and constraints and (2) our exploratory study on earnings management in a continental European environment, i.e. Belgium, suggest that research in non-Anglo-Saxon institutional environments and cross-country research is a major avenue for future research on earnings management.

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Table I Descriptive statistics for the pooled sample by auditor type^a

| | Big6 (n=129) | | | | | non-Big6 (n=357) | | | | |
|--|-----------------|---------|---------------|---------|--------|---------------------|----------|---------------|---------|--------|
| | mean | median | standard dev. | min | max | mean | median | standard dev. | Min | max |
| natural logarithm of assets ^c | 12.6144 | 12.6124 | 1.6065 | 9.2221 | 16.785 | 12.4068 | 12.3 | 1.0964 | 8.9529 | 15.722 |
| natural logarithm of sales ^c | 12.8157 | 12.8501 | 1.5434 | 9.0002 | 16.417 | 12.6954 | 12.525 | 1.0277 | 9.4612 | 15.155 |
| income before extra-ordinary items ^{c,d} | 0.03551 | 0.02693 | 0.1241 | -0.4912 | 0.4396 | 0.0182 | 0.0172 | 0.1792 | -3.0292 | 0.3155 |
| income after extra-ordinary items ^{c,d} | 0.04047 | 0.03247 | 0.13 | -0.6669 | 0.4395 | 0.0227 | 0.02 | 0.179 | -2.9998 | 0.3156 |
| operating cash flow ^{c,d} | 0.12087 | 0.1128 | 0.2013 | -0.8083 | 1.0613 | 0.1129 | 0.1172 | 0.1590 | -0.7122 | 1.1760 |
| Total accruals ^{c,d} | -0.09572 | -0.0835 | 0.2030 | -1.3698 | 0.6613 | -0.105 | -0.0957 | 0.2529 | -3.9086 | 0.7701 |
| absolute value of total accruals ^d | 0.14479 | 0.1107 | 0.1713 | 0.0002 | 1.3698 | 0.1404 | 0.1090 | 0.2351 | 0.0004 | 3.9086 |
| change in working capital ^{c,d} | -0.01941 | -0.0013 | 0.1908 | -1.2808 | 0.6674 | -0.0148 | -0.0045 | 0.2385 | -3.6939 | 0.7737 |
| depreciation ^{c,d} | 0.0763 | 0.0641 | 0.0612 | 0 | 0.3305 | 0.0906 | 0.0792 | 0.0662 | 0 | 0.3972 |
| paid-in capital stock ^{c,d} | 0.27546 | 0.2053 | 0.2684 | 0.0104 | 1.3781 | 0.1900 | 0.1191 | 0.2814 | 0.0007 | 2.9381 |
| total liabilities ^{c,d} | 0.58445 | 0.5761 | 0.25 | 0.0726 | 1.1837 | 0.5976 | 0.5881 | 0.3405 | 0.0596 | 3.8280 |
| leverage ^c | 0.13974 | 0.0699 | 0.1644 | 0 | 0.6471 | 0.1527 | 0.0982 | 0.2581 | 0 | 2.8352 |
| change in long term bank loans ^{c,d} | 0.01946 | 0 | 0.0760 | -0.1001 | 0.5620 | 0.0333 | 0 | 0.1341 | 0.0 | 2.1833 |
| difference between this year's premanaged earnings and prior year's reported earnings ^{c,d} | 0.04982 | 0.0211 | 0.2580 | -0.8697 | 2.0764 | 0.0288 | 0.0084 | 0.2403 | -0.7682 | 2.5626 |
| difference between this year's reported earnings and prior year's reported earnings ^{c,d} | 0.02134 | 0.00491 | 0.123213 | -0.342 | 0.7355 | 0.00285 | -0.00071 | 0.171289 | -1.2901 | 2.6822 |

^a for the sample selection procedure, see page 15

^b for some variables : 1 to 8 observations less, due to missing values

^c Variable definitions: (numbers refer to numbers of accounts as defined in de "minimumindeling van het algemeen rekeningstelsel" (i.e. the Belgian chart of accounts)

natural logarithm of assets = natural logarithm of total assets (20/58)

natural logarithm of sales = natural logarithm of sales (70)

income before extra-ordinary items = (|70/65| - |65/70|)

income after extra-ordinary items = (|70/66| - |66/70|)

operating cash flow (after financial costs and taxes) = $\frac{70}{67} - \frac{67}{70} + \text{noncash expenses} - (+) \text{increase (decrease) in working capital (year } t \text{ minus year } t-1)$, where noncash expenses is computed as $(\frac{630}{760} - \frac{761}{660} + \frac{661}{635/7} - \frac{762}{662} + \frac{680}{780} + \frac{663}{9125})$ and
 working capital = $\frac{29}{3} + \frac{40}{41} + \frac{490}{1} - \frac{175}{176} - \frac{44}{46} - \frac{45}{492/3}$
 total accruals = change in working capital minus depreciation
 change in working capital = $(\text{working capital})_t - (\text{working capital})_{t-1}$
 depreciation = $(\frac{630}{760})$
 paid-in capital stock = (10)
 total liabilities = $(17) + (\frac{42}{48})$
 leverage = $(17) / (20/58)$
 change in bank loans = $(8842 + 8843 + 8841)_{t+1} - (8842 + 8843)_t$
 premanaged earnings = $(\text{income before extra-ordinary items})_t - (\text{discretionary accruals})_t$
 this or prior year's reported earnings = income before extra-ordinary items
^d the variables were scaled by total assets
^e change in working capital minus depreciation

Table II Total discretionary accruals, absolute value of total discretionary accruals and signed total discretionary accruals for the pooled sample^a

| | discretionary accruals | absolute value of discretionary accruals | signed accruals | |
|--|-----------------------------------|--|--|--|
| | | | positive | negative |
| mean B6 (n=128) | -0.02393 (0.1365) ^c | 0.114137 (0.0001) ^c | 0.097848 (n=59) ^b (0.0001) ^c | -0.12806(n=69) ^b (0.0001) ^c |
| mean non-B6 (n=353) | -0.00983 (0.2018) ^c | 0.093617 (0.0001) ^c | 0.09794 (n=151) ^b (0.0001) ^c | -0.09039 (n=202) ^b (0.0001) ^c |
| p-value of t-test for differences in means | | | | |
| (two-tailed) ^d | 0.4271 | 0.1398 | 0.9963 | 0.0687 |
| (one-tailed) ^d | 0.78645 | 0.9301 | 0.4982 | 0.9657 |
| median B6 (n=128) | -0.01098 (0.2994) ^c | 0.072901 (0.0001) ^c | 0.070337 (n=59) ^b (0.0001) ^c | -0.07546 (n=69) ^b (0.0001) ^c |
| median non-B6 (n=353) | -0.01141 (0.0127) ^c | 0.066215 (0.0001) ^c | 0.063326 (n=151) ^b (0.0001) ^c | -0.06856 (n=202) ^b (0.0001) ^c |
| p-value of Wilcoxon rank sum test for differences in medians | | | | |
| (two-tailed) ^d | 0.8548 | 0.1938 | 0.5940 | 0.2043 |
| (one-tailed) ^d | 0.4274 | 0.9031 | 0.703 | 0.8979 |

^a total accruals were computed as change in working capital minus depreciation;
total discretionary accruals were computed as the difference between total accruals and predicted values from the following regression equation:

$$TA_{ijt}/A_{ijt-1} = \alpha_{jt} (1/A_{ijt-1}) + \beta_{1jt} (\Delta REV_{ijt}/A_{ijt-1}) + \beta_{2jt} (ITFA_{ijt}/A_{ijt-1}) + \epsilon_{jt}$$

TA_{ijt} = Total accruals for firm i in industry j for year t

A_{ijt-1} = Total assets for firm i in industry j for year t-1

Δ REV_{ijt} = change in revenue from prior period for firm i in industry j for year t

ITFA_{ijt} = sum of accrued set up costs, intangible and tangible assets for firm i in industry j for year t

^b number between parentheses is the number of observations

^c p-value (two-tailed) of t-test for means and signed rank test for medians

^d two-tailed p-value for hypothesis on discretionary accruals; one-tailed p-value for hypotheses on absolute value of discretionary accruals and signed accruals;

one-tailed p-values correspond to the following hypotheses:

absolute value of discretionary accruals: H_0 : value for B6 auditors \geq value for non-B6 auditors
 H_A : value for B6 auditors $<$ value for non-B6 auditors

positive discretionary accruals: H_0 : value for B6 auditors \geq value for non-B6 auditors
 H_A : value for B6 auditors $<$ value for non-B6 auditors

negative discretionary accruals: H_0 : value for B6 auditors \leq value for non-B6 auditors
 H_A : value for B6 auditors $>$ value for non-B6 auditors

Table III Result of multivariate regression of discretionary accruals on test and control variables^a
(pooled sample of paper and textile industries - N=478)^b

| variables | predicted sign | estimated coefficient (t-statistic) |
|-------------------------------|----------------|--|
| intercept | | 0.008483 (0.119) |
| AUDITOR_{it} | - | -0.003296 (-0.354) |
| A_{it} | ? | 0.003387 (1.030) |
| CF_{it} | - | -0.538281 (-21.291) [†] |
| LEV_{it} | ? | 0.012836 (0.736) |
| ΔE_{it} | - | -0.039950 (-8.647) [†] |
| R² | | 0.6522 |
| adjusted R² | | 0.6485 |
| F-statistic | | 177.016 |
| Prob>F | | 0.0001 |

^a The following multiple regression model was estimated for the pooled sample using ordinary least squares for:

$$DA_{it} = \alpha + \beta_1 \text{AUDITOR}_{it} + \beta_2 A_{it} + \beta_3 \text{CF}_{it} + \beta_4 \text{LEV}_{it} + \beta_5 \Delta E_{it} + \varepsilon_{it}$$

DA_{it} = discretionary accruals for firm i in year t

AUDITOR_{it} = dummy variable, 1 if non-big6 auditor, 0 if big6 auditor

A_{it} = natural logarithm of total assets for firm i in year t

CF_{it} = cash flow from operations for firm i in year t scaled by prior year total assets

LEV_{it} = leverage for firm i in year t

ΔE_{it} = dummy variable, 1 if for firm i in year t earnings from “normal” operations before discretionary accruals increased as compared to it’s year t-1 reported (i.e. after discretionary accruals) earnings from “normal” operations, -1 if for firm i in year t earnings from “normal” operations before discretionary accruals decreased as compared to it’s year t-1 reported (i.e. after discretionary accruals) earnings from “normal” operations

For variable definitions, see table I

^b n=255 for paper industry, n=223 for textile industry (smaller than total samples due to missing values for some of the variables)

[†] significant at 5% level

