

PLEASE DO NOT QUOTE OR DISTRIBUTE WITHOUT THE PERMISSION OF THE
AUTHOR

“AUDIT QUALITY, INFORMATION DYNAMICS AND THE PARTNER EFFECT”

J.P. van Buuren
PhD Student
Nyenrode University, School of Accountancy
Breukelen, the Netherlands

ABSTRACT

The main objective of this study is to assess the assumed homogeneity of audit quality *between* and *within* large audit firms. To measure the audit quality differences, the Auditor Conservatism Ratio (ACR) is developed, which draws on the value relevance of accounting data theory of Feltham and Ohlson (1995). The results are based on a sample of 378 Dutch municipalities with 1043 yearly observations over the period 1999-2005. Results show that significant differences exist in audit quality (i) *between* large audit firms, (ii) between audit partners *within* an audit firm and (iii) even between audit partners of the same local audit office.

Key words: audit quality, information dynamics, audit partner effect, municipalities

Data availability: data are available from sources identified in the paper
Version: 10 December 2007

Correspondence:

E-mail: j.buuren@nivra-nyenrode.nl
Straatweg 25
3621 BG BREUKELEN
The Netherlands
Tel.: +31 (0) 346 29 5838
Fax: +31 (0) 346 29 5850

1. Introduction

In the 1980's of the last century, attempts are made to distinguish groups with ex ante differences in audit quality. The distinction between high and low quality auditors is principally based on the dichotomy between large (high reputation) and small (low reputation) audit firms. It is assumed that smaller audit firms deliver lower audit quality than large audit firms. In my paper, I assess the appropriateness of this brand-name-based-dichotomy to estimate the *actual delivered* level of audit quality by auditors. In my opinion, the important caveat of the brand name approach is that it merely ignores¹ the significant effect of differences in professional judgment regarding materiality and audit risk perception among *individual* auditors. In other words, the 'brand name' approach assumes homogeneity of audit quality *between* and *within* the two groups of audit firms. I expect however that the differences between audit partners are important in such a way that the groups do not have the required level of reasonable homogeneity of audit quality. It follows that the use of groups that are not reasonable homogeneous may lead to inconsistent results and significant measurement errors.

An increasing body of auditing research literature suggests that within audit firms, quality differences in audit services exist, e.g. price premiums are paid for higher quality services (e.g. Francis, 2005; Ferguson et al. 2003). In this paper, theory is developed why audit quality is likely to be dependent on the individual auditor's financial reporting preferences. The applied theory is based on differences in materiality assessment and risk appetite by individual audit partners. Auditors are expected to develop audit strategies based on materiality and risk allocation. Auditing literature suggests the existence of these audit strategies e.g. risk adverse (conservative) auditors are expected to downsize risks in the financial statements, i.e. have lower discretionary accruals (Becker et al., 1998; Francis et al. 1999). On the other hand, auditors may develop specific risk allocation knowledge and are able to e.g. expect higher than average accrual

¹ Or assumes differences in professional judgments are sufficiently low and/or assumes that all large firms are able (to the same extent) to manage potential differences to an acceptable low level through monitoring and peer reviews.

positions. Liu and Simunic (2005) suggest that profit sharing rules may lead to specialization in specific industries or clients with certain risk profiles.

The audit quality definition in this paper draws on the value relevance of accounting data approach, which is based on the linear information model (LIM) as developed by Feltham and Ohlson (1995). It is reasoned that audits and information dynamics from LIM are closely related: the better the audit, the clearer the information dynamics and the better the predictability-property of accounting data becomes. The predictability property is essential for the relevance of financial statements according to the financial reporting framework of the IASB (Framework, par.15ff). Also IFAC auditing standards (ISA No. 200.44) consider the usefulness of accounting data as central principle. Auditors should always consider how the applied reporting options by the auditee influences [economic] decision making (IFAC Assurance Framework, par.47). The audit quality definition is therefore defined as “the performance of an auditor to (i) deliver appropriate professional opinions supported by necessary evidence and objective judgments and (ii) let audited (financial) accounting statements have high value relevance”. This definition is equal to the definition of European Federation of Accountants (FEE, 2006), but stresses the auditor’s tasks regarding consideration of value relevance of accounting data.

The research is based on a sample of 378 Dutch municipalities, with 1043 yearly observations over the period 1999-2005. This dataset is appropriate for this research as the municipalities are highly comparable, have adopted an accrual system and the international auditing standards (IFAC) are unimpaired applicable. Because municipalities’ annual reports are considered a “pure stock” model (fair value of assets equals book value of assets), the predictability-performance is tested with the differences between current year’s and next year’s municipalities’ total reserves per capita. This difference is expected to be – on average – nil, as municipalities have no profit motives and are not allowed to have systematic profit generating processes. Evidence is provided that significant audit quality differences exist *between* large audit firms. Moreover, audit partners *within* large audit firms deliver significant different levels of audit

quality, ranging from liberalism to conservatism. Even within a local audit office, audit quality differs significantly among partners.

This paper is, to my best knowledge, the first attempt that integrates the seminal theory by Feltham and Ohlson (1995) on information dynamics of accounting data with audit quality. The result is that audit quality research is positioned in the heart of the principle of auditing: increasing the usefulness of accounting data. The extent that users of financial statements benefit from the audit is therefore the central focus of this paper. This study shifts the focus from the auditor's business risks (high audit risks) to the business risks of the users.

The second contribution is that the theory on the partner effect allows audit quality to vary between auditors and recognizes the complex nature of auditing. Especially the accounting topics that are significantly affected by estimates are not univocally answered in practice. The recognition of significant differences between auditors, result in a more thorough understanding of the auditor's role and the seemingly limited potential of monitoring within audit firms and rules based regulatory. This may affect the view on how to monitor audit quality by the audit firm and by the supervisory boards on auditors.

This paper is structured as follows. In section 2, a literature review is provided of perspectives on audit quality: (i) perceived audit quality, (ii) added value to the management and (iii) *actual* audit quality. In section 3, an audit quality perspective is developed that is embedded in the value relevance literature of Feltham and Ohlson (1995). Furthermore, the auditor conservatism ratio (ACR) is developed in section 3. In section 4, evidence is provided of audit quality differences between and within large audit firms. The research is concluded in section 5.

2. Literature review

The purpose of this paper is to examine whether the quality of audit services provided by large audit firms are homogenous. To answer this question, one should realize the main reason for auditing research: the assumption that information asymmetry is not equal over all companies and therefore quality-differentiated audits are demanded by both the company management and

investors (Titman and Trueman, 1986; Datar et al., 1991; DeFond, 1992). Beattie and Fearnley (1995) recapitulate the differences in audit quality demands: (i) product differentiation hypotheses that exist of (a) differential agency costs across clients and over time (DeAngelo, 1981) and (b) signaling the credibility of financial statements through auditor choice and thus the honesty of the management (Dopuch and Simunic, 1982) and (ii) different levels of insurance (deep pockets) of audit firms.

Secondly, one should consider that different perspectives on audit quality should result in different definitions. In their report on audit quality, the Institute of Chartered Accountants in England and Wales (ICAEW, 2002) acknowledge the versatility of audit quality perceptions as they state that “each stakeholder will give a different meaning to audit quality”.

Agency theory settings (Jensen and Meckling, 1976; Watts and Zimmerman, 1983) are often used to motivate audit research. From the agency theory, three main research perspectives on audit quality can be distinguished:

- a) *Demand side - users of audited information*; This perspective on audit quality focuses on the *perception* of audit quality by users of audited information;
- b) *Demand side – providers of audited information*; Following the economic rationale of management, audit quality is considered the extent of marginal benefits the auditee has received from the audit². Simunic and Stein (1987) reason that the demand for product differentiation of audit services is based on three characteristics: (i) contribution of the audit to the organizational control, (ii) credibility of the audit as perceived by the shareholders and creditors and (iii) product line of assurances and non-assurance services;
- c) *Supply side – providers of assurance services*.

This perspective is examined in this paper. The supply side of audit quality is focused on the actual audit performance of the auditor, with auditing regulatory as a benchmark. In their report on audit quality, the ICAEW (2002, p. 8) mentions that audit quality is not defined by law,

but defines it as: “audit quality, at its heart is about delivering an appropriate professional opinion supported by necessary evidence and objective judgments”. The ICAEW perspective on audit quality is equal to the approach by the European Federation of Accountants (FEE, 2006, p. 10). Furthermore, the ICAEW states that “Compliance with the [auditing] standards, therefore, provides evidence that quality audit has been done”. Following this perspective, audit quality has two aspects: (i) ability to issue the correct opinion and (ii) compliance to auditing standards. These two aspects are consistent with IFAC audit standards section 220.7 that urges engagement partners to emphasize on audit quality: “(i) performing work that complies with professional standards and regulatory and legal requirements, (ii) complying with the firm’s quality control policies and procedures as applicable; and (iii) issuing auditor’s reports that are appropriate in the circumstances”. However, no formal definition of audit quality is provided in the IFAC audit standards (2005).

One could argue that audit quality (assurance supply side perspective) can be defined as the opposite of audit risk: “inverted audit risk = audit quality”. In the auditing standards (ISA No 200.15-16), audit risk is defined as “the risk that the auditor expresses an inappropriate audit opinion when the financial statements are materially misstated”. In fact, the “inverted audit risk=audit quality” definition has much in common with the DeAngelo’s (1981) definition: “the market assessed joint probability that a given auditor will both [a] discover a breach in the client’s accounting system and [b] report the breach”. However, the important difference between the two definitions is the basic point of departure: *perceived* quality (DeAngelo) versus *actual* quality (IFAC auditing standards). Palmrose (1988) reports that she has combined both perspectives and presented audit quality as “the probability financial statements contain no material omissions or misstatements”. However, these currently applied definitions seem to be principally focused on the auditor’s risks, not on the auditor’s responsibilities regarding the usefulness of audited

² Note that the marginal benefits of audit quality do not impair audit quality itself, as external audits are assumed a surrogate to internal audits/control (Simunic, 1980) and it is assumed to be a rational equalization of costs and benefits.

financial statements. The auditor's role concerning usefulness of audited statements is considered in this paper.

3. Research model

3.1 Usefulness of financial statements

The *objective* of the audit of financial statements is to “enable the auditor to express an opinion whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework” (ISA No. 200.2). An opinion is considered appropriate when the tenor of the auditor's opinion and the extent of “true and fair view³” of the financial statements align. In extreme cases, this may include a true and fair override (par. 2:362:4 Dutch Civil Code), if a specific requirement of the Civil Code does not result in a ‘true and fair view’. In the IASB Framework for financial statements, usefulness⁴ is presented as a central feature: “the objective of financial statements is to provide information about the financial position, performance and changes in financial position of an entity that is *useful* for a wide range of users in making economic decisions” (IASB Framework, par. 12). Information in financial statements is thus considered useful, if it supports economic decision-making. IASB Framework (par. 26) states: “To be useful, information must be to the decision-making needs of users. Information has the quality of relevance when it influences economic decisions of users by helping them evaluate past, current and future events or confirming or correcting their previous evaluations”. An assurance engagement is about formulating an opinion to enhance the degree of confidence of the users in the subject matter (financial reporting) against criteria (IFAC framework, par.7ff). As usefulness is the central feature of the applicable criteria, e.g. IFRS, assessing the usefulness for economic decision making by users of the financial statements can be considered the main task of the auditor. Improving the usefulness of the financial statements

³ “‘True’ is generally understood to mean that the information is not false and conforms to reality”. “‘Fair’ is understood to mean that the financial statements reflect the commercial substance of the company's underlying transactions and that the information is free from bias” (ICAEW, 2002, p7).

should then be the main goal of each auditor⁵. Note that usefulness includes relevance-, completeness- and reliability properties (ISA No. 200.44, IFAC Handbook, 2006).

One of the important attributes of usefulness is the predictability property of accounting data (IASB Framework, par.15ff). The IASB Framework considers predicting future developments, such as profitability and raising further finances essential for economic decision making. Thus, improving the predictability property of accounting data will improve the usefulness of financial statements. The usefulness, also called value relevance of accounting data, has been subject of a major academic debate in financial accounting research. The predictability property of accounting data has played a central role in this debate, e.g. the earnings response coefficient (Easton and Zmijewski, 1989). In auditing literature, Teoh and Wong recognize the ‘usefulness’ as central feature of financial reporting audits in their definition of auditor’s quality (1993, p. 348): “An auditor’s quality can then be defined as the characteristic leading to greater informativeness of reported earnings”. The association between the predictability property (through an earnings response coefficient-measure) and auditor reputation is observed by Teoh and Wong (1993) and Francis and Ke (2006): the better the reputation of the auditor (i.e. large audit firms), the higher the credibility of the accounting data, the higher the capital market response to reported earnings.

3.2 Value relevance of accounting data

Feltham and Ohlson (1995) have analyzed theoretically the relation between market valuations and current accounting numbers by introducing the ‘dynamic linear information model’ (LIM). LIM illustrates that accounting data captures relevant information, even under conservative accounting (FO’95). Easton (2001) reports two kinds of value creation that are potentially not

⁴ More generally, the IFAC-handbook (2006) states that acceptable financial reporting frameworks should consider the *usefulness* of the reported information for users, which exhibit normally the following five attributes (ISA No. 200.44, IFAC Handbook, 2006): relevance, completeness, reliability, neutrality and understandability.

⁵ Improving the usefulness is in line with one of the primary objectives of the IFAC: “to contribute to the efficiency of the global economy by *improving confidence* in the quality and reliability of financial reporting” (IFAC, Handbook, 2006).

mapped in the financial statements due to conservative financial reporting principles (realization and prudence principles):

- *Economic value added* is communicated through non-accounting information about future developments (e.g. directors report), but also through a true classification of transitory and permanent earnings. Regarding to non-accounting information, the auditor should consider reported developments and reality of current conditions as mapped in the financial statements. The true classification (and disclosure) of permanent and transitory earnings is a result of thorough understanding of the auditee's business and circumstances by the auditor;
- *Accounting added value* is created due to accounting principles e.g. non-valued profit margins in inventory. Feltham and Ohlson (1996) have analyzed that overdepreciation leads to a downward bias in earnings under the assumption of growth. This overdepreciation is not problematic if earnings reports remain predictable: i.e. capital markets should be able to estimate and value this bias. Easton and Pae (2004) report (limited) evidence on this matter.

The thorough understanding of both kinds of added value concerning the audited company is important for the auditor to make appropriate assessments of significant estimates and the overall presentation of the financial statements (ISA No. 700.14). These assessments require personal understanding, knowledge and experience of the auditor (ISA No. 315.23).

3.3 Audit quality, Information dynamics and the partner effect

3.3.1. Professional judgment and the concept of materiality

Relying on individual partners would not be problematic if no systematic differences in professional judgment existed. However, academic literature suggests systematic differences between auditors in applying the concept of materiality, which is the “oil” that makes financial reporting and auditing possible. “Information is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial statements” (ISA No.

320.3). At the audit firm level, Blokdijk et al. (2003) report that (Dutch) Big5 audit firms assess planning materiality at a lower level than NonBig5 audit firms, which should indicate higher quality of large audit firms. Messier et al. (2005) provide a review of empirical research on materiality assessment. The main findings of both archival and experimental research are that client size, perceived internal controls and auditor experience are determinants of materiality assessment. Other aspects, such as decision aids give mixed results (Messier et al., 2005).

The concept of materiality in financial reporting may be one of the important attributes of systematic differences in professional judgment between auditors. Materiality can depend on both quantitative and qualitative factors. Although financial reporting standards support determining the “true and fair view”, auditors should always consider how the applied reporting option (if there are more than one allowed in the reporting framework) influences decision making (IFAC Framework, par.47). Auditors have thus the responsibility⁶ to assess the interests of users and how reporting will support their decision-making in the best way possible. However, it is obvious to see that it is likely that *there is a large grey area between best audit practices that put effort in improving usefulness of audited information and ‘just’ delivering an appropriate opinion*. In this paper, it is reasoned that in this grey area, the value relevance of accounting data depends partly on the auditor. In Figure 1, the relation between the value relevance of accounting data and the auditor’s assessment of materiality is illustrated.

[Insert figure 1]

The curves in Figure 1 represent the assumed distribution functions of financial reports audited by three archetypes of auditors: high quality, conservative and liberal. High quality auditors have signed – on average – financial reports with high(er) value relevance of accounting data. Conservative (liberal) auditors have signed financial reports with a systematic bias towards undervaluing (overvaluing) the information dynamics of accounting data. A simple example of

⁶ Note that the auditor’s responsibility concerning usefulness of accounting data goes *beyond* the legal minimum (i.e. absence of (observable) material misstatements/errors) and cannot be enforced under the current jurisdiction. However, the lack of legal action possibilities against auditors concerning low usefulness of accounting data is considered *not* to reduce the concerning responsibilities of auditors.

systematic bias is the impairment of goodwill: a conservative (liberal) auditor will have the tendency to let goodwill bias downwards (upwards) in the grey area of acceptable values. In contrary, high quality auditors will have, on average, the best estimates of the ‘true’ value of goodwill.

Figure 1 suggests that the three types of auditors have different boundaries of materiality. It is assumed that all boundaries of assessed materiality are still acceptable for the auditing standards. Figure 1 illustrates that conservative auditors will not accept financial statements beyond point M^C (left tail), and will deliver an qualified opinion, but a liberal auditor will still accept financial statements up to point M^L (left tail)⁷. However, beyond M^L (left tail), all auditors will deliver a qualified opinion. Furthermore, Figure 1 illustrates that all kind of auditors sign financial statements that have substandard quality of value relevance: thus, auditors are not assumed to be all good or all bad; even high quality auditors are expected to make mistakes. However, biased auditors are assumed to sign –on average – more financial statements with substandard value relevance. Note that substandard quality of value relevance will not automatically result in a qualified opinion: it depends on the materiality assessment of the auditor.

Figure 1 further suggests that high quality auditors sign financial statements that have errors/omissions of lower materiality, as the slopes of the tails are steeper than the distribution of the ‘average’ auditor. Furthermore, the distribution is divided normally around errors/omissions of low materiality, which indicates the absence of biases towards liberalism or conservatism. Conservative (liberal) auditors, however, are assumed to have a skewed distribution to the right (left) as they approve conservative (liberal) reporting, but have to comply with auditing standards: the skewness of the distributions therefore illustrates the search and use of boundaries of the auditing- and financial reporting standards. Audit risk preference is considered the principal driver of the differences between the three archetypes of auditors:

⁷ One could suggest that a liberal auditor has a broader scope of possible auditing solutions, which includes also biases towards conservatism, as the auditor accepts biases anyway: why exclude cases with very low audit risks? Note, however, that figure 2 is about the *assessment* of materiality, based on the auditor’s personal views on what the range is of acceptable “true and views” and not the actual materiality or probability of litigation.

- Materiality and audit risk are related inversely: the higher the materiality, the lower the audit risk and vice versa (ISA No. 320.10). Therefore, also the auditor's audit risk appetite will affect the assessment of materiality. As materiality assessment is the evaluation of weighting quantitative and qualitative factors, which is assumed to vary over auditors, the audit risk varies accordingly;
- Auditors may invest in knowledge to improve the assessment of materiality and audit risk allocation by specializing in certain industries or certain company profiles. As a result, the auditors can develop effective and efficient audit strategies and offer more competing audit prices than non-specialized auditors (Liu and Simunic, 2005);
- Audit risk appetite may also be dependent on the commercial strategy in competing markets. As stated frequently by researchers (e.g. Becker et al., 1998), too high values of accruals are more risky for reasons of litigation, than too low values of accruals. An auditor may specialize in biasing accruals downwards, reducing audit risks and may be able to cut back audit effort. As a result such an auditor may be able to offer very competing audit prices, but is still able to make attractive profits.

The distribution of signed financial statements is considered dynamic. An auditor can change commercial strategies and choose a certain specialization. Thus, to a certain degree, a high quality auditor can choose to become a (more) liberal or conservative auditor over time, when it is considered more attractive. *However, the extent of auditor's (technical) capabilities to understand the true audit risks and the ability to communicate it effectively with management, are considered important constraints on choosing the auditor's business case.* Please note that Figure 1 is just for illustrating differences between three (extreme) auditor's archetypes. It is assumed that in the 'real world' auditors are in between the three extremes.

In Figure 1, the shaded parts are the objective of my research as they deviate from the "average auditor". Please note that there is a large overlap between the three archetypes in which the auditors deliver similar levels of audit quality. This overlap is explained by differences in (i)

the intrinsic preference of the auditee to depend on the auditor and (ii) the bargaining power of the auditor. The intrinsic preference of the company to depend on the auditor is considered an important attribute of the auditor effect: the more the client is inclined towards the auditor, the stronger the auditor effect will be. The extent that clients depend on the auditor is assumed to be randomly divided over the auditor client groups. On the other hand, the stronger the bargaining power by the auditor, the more pronounced the auditor effect will be. Note that the bargaining power is stronger if the auditor has better communicating skills. It is assumed that all auditors attempt to maximize their influence. Furthermore, the auditor effect is not likely to be attributed to a client selection bias, as it very hard for the client to estimate the auditor archetype in the short period of audit engagement bids. Also the auditor has limited tools to assess the client's archetype. Moreover, the auditor has to meet the internal revenue target and -under a competitive market- cannot be too selective in accepting clients.

3.3.2 Definition of audit quality

As described in the previous sections, the support of the economic decision-making by users of financial statements should be the central focus of auditors, which is assumed to include both minimizing material omissions and misstatements and maximizing usefulness of accounting data. However, the extent that auditors put effort in minimizing material errors and improving usefulness of accounting data is expected to differ across auditors, due to personal risk preferences and individual material risk assessments. Other personal aspects of auditors that are considered important are the technical and communicative capabilities of the auditor, to *comprehend* the true informational values and communication skills to *persuade* management to let the financial statement have the true informational values, in case of disagreement.

The definition of audit quality from the supply-side perspective is therefore defined as: “*audit quality is the performance of an auditor to (i) deliver the appropriate professional opinion supported by necessary evidence and objective judgments and (ii) let audited (financial) statements have high value relevance*”.

The first part of this definition is similar to the definition of the FEE (2006), the second part is added and examined in this paper. The consequence of this definition is that the audit quality threshold becomes higher than ‘just’ delivering the appropriate opinion and it makes audit quality more dependent on the performance of individual auditors and audit teams. In this research, it is assumed that each individual auditor has different levels of personal capabilities and firmness to *detect, persuade and let management act* to the aims of regulatory and make financial reporting more valuable for users.

Auditor independence. In the audit profession there is a continuing debate on the tension between the auditor’s advice and recommendations as result from the audit of financial statements and self-review threats. However, an auditor can be considered useful, if not only material risks are communicated, but also a direction is given how to address the risk or error appropriately: i.e. how management should address the risk or error in such a way that the auditor is able to express an unqualified opinion⁸.

3.4 Auditor Conservatism Ratio

This research project examines whether the level of audit quality of services provided by large audit firms is homogenous. As starting point for this research, the FO’95 framework is selected as it focuses directly on value relevance of accounting data. As described in the previous section, it is suggested that an auditor should affect the information dynamics of accounting data positively.

To measure the auditor’s effect, the following assumptions are made:

Assumption 1: High quality audits result in high quality information dynamics of accounting data;

Assumption 2: High quality information dynamics lead to, on average, a better predictability property of accounting data;

⁸ This is in line with the Code of Ethics (CoE, art. 290.168, IFAC Handbook, 2006) states that “the audit process involves an extensive dialogue between the [audit] firm and audit client. During this process, management requests and receives input regarding such matters as accounting principles and financial statement disclosures, . . . , and the methods used in determining the stated amounts of assets and liabilities. Technical assistance of this nature and advice on accounting principles for financial statement audit clients are an *appropriate means* to promote fair presentation of the financial statements. The provision of such advice does *not* generally threaten the firm’s independence”.

Assumption 3: High audit quality is significantly affected by the individual auditor's assessment of significant estimates and the evaluation of the overall presentation of the financial statements;

Assumption 4: All things equal, differences in individual auditor's financial reporting preferences affect the probability of profits and losses.

The first assumption follows directly from the definition of audit quality, as developed in the previous section. The second assumption relates to the relevance-attribute of accounting data to support economic decision making (IFRS Framework, par. 15ff). The true and fair view of the financial position and results are considered dynamic and should be adjusted to current conditions, but also to future developments. In fact, through e.g. significant estimates by the management concerning going concern, valuation of assets and provisions, a part of the future is 'mapped' in current accounting data. High quality audits will result in more reliable estimates and thus, on average, will result in better predictability of next period's equity (all things equal). This relates to assumption 3 that states that high audit quality is significantly dependent on the effort and ability of the auditor to perform these tasks. Remember that in the previous section, it was concluded that these tasks rely heavily on professional judgment. Of course, the predictability is also significantly affected by the more standardized audit aspects such as examining, on a test basis, evidence to support financial statement amounts and disclosures. However, because of its more standardized character, these tasks are expected to result in, on average, fewer and less significant differences between audit professionals.

Finally, assumption 4 states that under equal circumstances, differences in application of GAAP affect the probability of profits and losses. These differences are (partly) attributed to the auditor and follow from assumption 3. The difference in probability of profits is caused by differences in accounting added value and the more conservative or liberal application of accounting rules. In the next section, a numerical example is provided to illustrate this assumption. In the end, the differences in accounting added value will result in a continuum of

acceptable ‘true and fair views’, ranging from substandard to maximal value relevance quality. Because the maximized “true and fair view” is unobservable, in this research the practitioners’ ‘best practice’, approximated by ‘the average’, is used as substitute. All things equal, significant deviation from the practitioner’s average suggests different applications of GAAP.

To examine the auditor’s effect, the average information dynamics of financial statements of an auditor’s client group is determined based on assumption 4, resulting in the Auditor Conservatism Ratio (ACR):

$$ACR_a = (\text{number of profits}_{jt;a}) / \text{total observations}_{jt;a} \quad (1)$$

Where company (or municipal) j at moment $t \in \{1, \dots, n\}$ and company (or municipal) $j \in$ auditor client group $a \{1, \dots, l\}$ and ACR ranges from $[0,1]$. Note that in case of municipalities, profits are interpreted as an exploitation surplus. The auditor client groups can be pooled at the office level and at the firm level. ACR_a represents the extent an auditor signs financial statements that have a systematic bias towards conservatism or liberalism:

- If $ACR_a=0$, than the auditor is considered “extreme liberal”;
- If $ACR_a=1$, than the auditor is considered “extreme conservative”;
- If $ACR_a= (0.5 + \delta)$, the auditor has no systematic bias, i.e. considered a high quality auditor:
 - o $\delta=0$ in case of municipalities and non-profit organizations that attempt to maintain current wealth. If, in case of municipalities δ is significantly different from zero, i.e. ACR_a is significantly different from 0.5, than a systematic audit bias is assumed.
 - o In case of companies, δ is unknown, but being profit-driven organizations, δ will normally be higher than zero. Matched pair analyses should be applied to determine the average δ .

If all auditors were delivering homogenous audit quality, the distribution of the number of profits and losses should be equal over all auditor client groups⁹ and thus, ACR_a should be equal for all auditors¹⁰. To distinct ACR from client specific circumstances, ACR should include a reasonable amount of auditees per auditor group. The threshold of the number of auditees per auditor group is arbitrarily, but determined in this research on at least six yearly observations concerning at least three auditees. According to ISA No. 570.18, an auditor should evaluate the management's going concern assumption for at least 12 months. Analogue to this, the 'true and fair view' and information dynamics should be sufficiently robust to hold for at least 12 months in case of high quality audits.

The extent that ACR_a illustrates the auditor effect is assumed to be dependent on the "*client's group auditor dependency preferences*": although the auditee has reporting preferences, the auditee is to a certain extent inclined towards the auditor's opinion and advice. This aspect is in line Simunic's (1980) perspective that audit is a "subsystem of an auditee's overall financial reporting system". An auditee will make a rational decision to the extent of auditor dependency. In case of low auditor dependency, the auditee expects the auditor 'just to deliver the (unqualified) opinion'. The auditee is than convinced that the annual report complies with the reporting standards. The auditor's bargaining power is therefore expected to be lower and thus ACR_a is expected to be less pronounced: only if the auditor is intending to deliver an other than unqualified opinion, the management is willing to make adjustments. However, in case of high auditor dependency, the auditee is open for, and expects suggestions from the auditor: technical assistance and advice is considered common and the bargaining power of the auditor is higher: the auditee is likely to make adjustments if the auditor suggests it. In case of high auditor dependency, ACR_a is expected to capture the auditor's effect more clearly. The extent of auditor dependency is expected to be distributed randomly over the auditor client groups.

⁹ Under the assumption of comparable client groups.

¹⁰ The reason that the number of underestimates is used to determine ACR in stead of e.g. the average deviation per auditor group relates to avoid dominance of observations with large losses and profits.

The intrinsic level of bargaining power of auditors is also expected to differ between auditors, because auditors will differ in their communication skills. The better the communication skills, the stronger the bargaining power will be and the more pronounced the auditor effect.

An example of ACR

In this section, an example is described that illustrates the relation between differences in accounting choices and ACR. Imagine three auditors with different financial reporting preferences: liberal, conservative and high quality. Assume that these three auditors have exact equal client groups of sufficient size, that –on average- only differ in accounting method with regard to the recording of inventory. The differences in accounting choices concerning inventory are illustrated in table 1, based on IAS No. 2.

[Insert table 1]

At first glance, the determination of cost prices for inventory valuation seems rather straightforward. However, most parts of the cost price require a certain extent of estimation. For example, to determine the allocation of production overhead costs require estimates regarding depreciation periods and normal capacity of production assets. Under dynamic and volatile markets, it is likely that under- or overdepreciation of assets will occur, due to differences in actual use of assets and life-cycle of the product line. The extent of estimation is even higher for the allocation of non-production overhead, such as handling and storage costs. Finally, the extent of estimation is high to determine the provision of the costs of write-down to net realizable value. Note that the liberal client group is expected to use relatively higher cost prices and lower provision to net realizable values (or use higher net realizable values). In the example, the differences in estimations lead to differences in cost prices of the three auditor client groups: ranging from 85% (conservative) to 115% (liberal) of the cost price of the high quality auditor group. Assume that the inventory value of the high quality auditor group approaches the true value, but the values of the conservative and liberal groups are also acceptable for GAAP.

Assume that the client groups of the auditors are equal and have a mean turn-over of €10,000 and that the mean costs of production are € 9,500. Both turn-over and production costs are unchanged over a ten year period. Further assume that yearly changes in earnings are fully due to net changes in inventory. These changes in inventory can have various causes such as under- or overproduction and additional provisioning. Note that the underlying production processes are equal over the client groups: the differences concern only the valuation of inventory: cost prices and provisioning. Thus, in case of cash based financial reporting, the earnings of the client groups are equal: € 10,000 - € 9,500 = € 500. However, in case of an accrual system, the earnings will be different:

- conservative: +5% change * € 9,500 * 85% = 404 + 500 = € 904
- HQ: +5% change * € 9,500 * 100% = 475 + 500 = € 975
- Liberal: +5% change * € 9,500 * 115% = 546 + 500 = € 1,046

The difference in earnings between the client groups is € 146 (€ 1,046 - € 904) and is due to differences in cost prices and/or provisioning. If the cost prices are below (above) the true value, than positive (negative) accounting value is created. In case of the conservative client group, the positive accounting value is € 71 (€ 975 - € 904). Consistent with FO'95, the accounting added value develops solely under the condition of growth. The development of accounting added value is shown in Figure 2.

[Insert Figure 2]

In the example as illustrated in Figure 2, the inventory has increased with 1% over the ten-year period, resulting in a difference in the cumulative earnings of:

- conservative: € 5,085 and positive accounting added value of € 15
- HQ: € 5,100 and no accounting added value
- Liberal: € 5,115 and negative accounting added value of € 15

In case of no growth over this period, the cumulative earnings will be equal for all groups, i.e. € 5,100 and in case of a decrease of inventory of 1%, the cumulative earnings of the conservative (liberal) group will be € 5,115 (€ 5,085).

In Figure 2, the development of earnings and accounting added value is illustrated. The growth of inventory varies over the years, ranging from -7% (year 4) to + 7% (year 2). From figure 2, it is clear that the earnings of the liberal client group are more volatile than the other groups: in case of growth: higher profits and in case of decrease: larger losses. However, note that the development of positive, respectively negative accounting added value is equal over the conservative respectively liberal client group. The added value of the HQ-client group is nil, as it is assumed to approach the true value. Finally, observe that the distribution of profits and losses is different over the client groups:

- conservative: 9 profits, 1 loss → ACR = 0.9 (9/10)
- HQ: 8 profits, 2 losses → ACR = 0.8 (8/10)
- Liberal: 6 profits, 4 losses → ACR = 0.6 (6/10)

This simple example illustrates the consequence of different valuation choices concerning inventory and supports the previously mentioned theory that auditor conservatism¹¹ will result in different distributions of profits and losses (assumption 4).

Unit of analysis - partner level

The unit of analysis to measure the auditor effect is preferably the partner level, for the following reasons:

- The engagement partner is the ‘subject’ that has the overall responsibility for the quality of the audit. The engagement partner’s main tasks concern the assessment of materiality in the annual report and the assessment of audit risks. The partner should monitor that these risks are addressed appropriately and sufficiently in the audit approach. In the end, the engagement partner has to make the key-decisions regarding issues arising from the

audit. Moreover, the engagement partner is responsible for communicating audit findings with the auditees' top management. In addition to good technical performance, communication is a key element of the auditor's performance. It is the task of the engagement partner to persuade management to process adjustments in case of disagreement.

- The engagement partner is also responsible for the acquisition of new clients¹² and continuing audit engagements. The engagement partner conducts the preliminary risk assessment of the potential client. Analogue to the expected differences in materiality assessment in previous sections, also for this preliminary risk assessment, differences between auditors are expected, regardless of the audit firm's internal procedures as described in ISQC paragraph 28ff (IFAC, 2005).

Of course, the audit teams and especially audit managers will affect significantly the level of audit quality, as the actual audit work steps are conducted by them. However, the engagement partner effect is assumed to prevail against the audit team effect because of (i) that actual negotiations with top management is done by the engagement partner and (ii) individual engagement partner's risk assessment is essential for the direction of the audit and effective use of audit budgets. The same is true in case that more than one audit partner is involved in the engagement, e.g. in case of global clients. The local audit partners have received directives by the principal partner concerning key audit risks to be addressed and work steps to perform (ISA No. 600.7ff).

From the above arguments, it follows that the audit firms have a decentralized organizational structure. Also in academic literature, the decentralized structure is described (Francis et al., 1999; Reynolds and Francis, 2000; Craswell et al, 2002) and suggests that in

¹¹ Or more generally, at the individual client level: accounting conservatism, as auditor conservatism is considered a special case of accounting conservatism.

¹² This includes also the internal acquisition of new engagements, i.e. the ability of the local auditor to attract new engagements that are received at the headquarters of the audit firm.

assessing issues of auditor independence, the focus should be on the individual audit partner, local office or other unit that decides on the acceptance or continuance of engagements.

3.5 Research model

Why research on Dutch municipalities?

The research is done on the municipality market in the Netherlands. As of 1985, Dutch municipalities use the accrual system for financial reporting. The main advantage of this study is that Dutch municipalities are highly comparable and all have similar legal tasks and thus ACR's can be compared. Other advantages of this market are (i) sufficient large sample and public availability of data, (ii) data can be standardized transparently (amounts per capita), (iii) highly specialized audit market and auditors have sufficient (comparable) clients, (iv) dominated by Big4 accounting firms and both IFAC and internal audit firm quality standards are unimpaired applicable, (v) litigation risks are considered low, as I am not aware of any claim for compensation that has been granted¹³. Thus, the auditor's effect can be reasonably attributed to the auditor and is not expected to be biased through liability risks. Therefore, the Dutch municipal market is considered an appropriate and straightforward setting to test the "audit partner effect".

Financial reporting standards of Dutch municipalities

In 1985, Dutch municipalities have implemented an accrual based financial reporting system (CV'85) that has been updated in 1995 (CV'95) and modified in 2003 (BBV'03). Although these financial reporting standards are based on the principles of the Dutch Civil Code and the Dutch Council of Accounting Reporting (CAR), there are some essential differences. As of 1 January 2004, CV'95 is replaced by the BBV'03 standard¹⁴. The most important differences of CV'95 and BBV'03 with Dutch Civil Code and CAR-standards are (i) *Use of reserves to fund operations*: Municipalities use withdrawals from (earmarked) reserves to cover costs from operations. Also,

¹³ As from 1995, there are in total 16 verdicts of the disciplinary board related to municipalities of which 5 regarding to forensic auditors and 11 verdicts concerning the annual report, but all of the complaints and appeals were dismissed (Found on www.NIVRA.nl, 1 February 2007).

¹⁴ According to BZK (2003) the international standards on financial reporting by governments and municipalities (IPSAS) are not good enough (yet) to implement as this set of standards has not been completed in 2003.

income from operations is withdrawn and deposited into an (earmarked) reserve. Moreover, at the beginning of the year, municipalities make interest deposits to reserves by charging interest on the book value of fixed assets in addition to depreciation costs; (ii) *Result-dependent depreciation*. This accounting-option gives the municipal the opportunity for accelerated depreciation or write-down of assets without an economic basis. The result-dependent depreciation must be approved by the city-council; (iii) *Capitalization of deficits* is allowed under CV'95 and may be depreciated when funds are available. This option is not allowed under BBV'03.

FO'95 framework in a governmental setting

The research model developed in this paper is based on the theory of value relevance of accounting, allowing for accounting conservatism as described in FO'95. The FO'95 framework is developed for a capital market setting: to describe the relationship between book value of equity and market value of equity. However, the essence of their linear information dynamics is based on basic bookkeeping principles, valid for all accrual based financial reporting systems. It is considered that the FO'95 is sufficient general to be applicable for non-profit organizations and governmental settings, for the following reasons:

- the information dynamics are considered intrinsic characteristics of accrual systems regardless of applied settings: capital market, private companies or governmental settings;
 - FO'95 illustrates how current equity is related to future equity if $t \rightarrow \infty$. The benchmark for future book value of equity is today's capital market value. Thus, the relationship between book value and market value of equity is allowed to have a long time horizon, even to infinity. However, a long time horizon is *not required* in FO'95: extreme stock models have short time horizons to equal market values;
 - In order to examine information dynamics and value relevance of accounting data, the capital market benchmark is not necessary, if other appropriate benchmarks are available.
- In the previous sections, it is motivated that predictability is considered an appropriate

benchmark. Municipalities have no market value and can be characterized as a “pure stock model” for the following reasons:

- i. municipalities are spending organizations and are in general not expected to have projects with positive net present values: thus the book value of these projects represents the fair value;
- ii. National and local taxes are levied to fund operations. Other income has a more incidental character and is related to real estate, (ancient) buildings, non-developed (potential) building lands and valuable shares of utility companies (electricity, gas, water supply)¹⁵. In other words, municipalities will face exploitation deficits, unless sufficient taxes are raised. Therefore, the ‘result for the year’ is considered irrelevant for the determining the “fair value” of the municipality’s assets.

The prediction model is the equation of current year’s and next year’s total reserves (TR) per capita. This model is considered appropriate as municipalities have no profit motives, but have motives to maintain the current level of TR:

$$TR_{jt+1} = TR_{jt} \tag{2}$$

In terms of FO’95, model (2) can be considered a ‘pure stock’ model as all relevant valuation information is expected to be captured in the total reserves. It is expected that a well audited financial position has, on average, a better predictability property.

4. Research results

4.1 Data collection

The sample includes Dutch municipalities over the period 1998 – 2005. The financial statements data is processed manually from annual reports and were found in the ‘Company.info’ database.

¹⁵ In the past, these utility companies were part of municipal organizations, but in the last decade they have merged into large commercial enterprises. However, some municipalities still hold the shares. Although these municipalities receive dividends of these participations and use it to fund operations, it is a small amount relative to the total budget.

In addition to the annual reports, missing information is collected with a questionnaire¹⁶ sent to municipalities. Other information is found at the publicly available ‘Statline’ internet database of the Dutch Central Office for Statistics (CBS, 2007). In total, 378 municipalities are included in the sample with 1043 yearly observations as presented in table 2, Panel A.

[Insert table 2]

The municipalities’ market for audit services is dominated by the Big4 audit firms. Recently, also the small audit firm IPA-ACON has entered the municipality market, but has too few observations to analyze and is therefore deleted from the sample.

An overview of the yearly observations per firm and the representativeness of the sample for all Dutch municipalities is reported in table 2, Panel B. The market domination by the Big4 audit firms is quite high. The total sample includes about 30% of the total filed financial statements over the period 1999-2005. Depending on the year, up to 63% of the municipalities are represented in the sample. The sample and total municipalities seem to be distributed reasonable similarly with regard to size-classes. Further note the market domination of Deloitte of 74% in the sample. This market position by Deloitte can be explained by the acquisition of VB group in 1998, which was the former (quasi) state auditor of the Dutch municipalities. VB group has been privatized in 1985 and used to have a market share of almost 100% before 1985.

The number of municipalities and observations per audit partner are reported in table 5. Only audit firms and audit partners are included that meet the threshold are included in the analyses. The partner names are not given for reasons of privacy. From table 5, it is clear that the threshold of at least 6 yearly observations concerning at least 3 municipalities is met

¹⁶ The objectives of the questionnaire were twofold: (1) adding missing financial statement data and (2) collect information that was not included in the annual reports such as: number of official board-members, labour costs, auditors’ reports and audit fees. Only raw and objective data has been asked, no subjective elements were included. In autumn 2006, all 459 municipalities were invited telephonically to participate: 372 partly filled in questionnaires were sent. At the end, a total of 150 usable questionnaires were received, which is a 40% response rate. The reasons for withdrawal were principally due to unexpected pressure of work, illness and dismissal of officers. The questionnaires resulted in a total of 335 additional yearly observations and 6 municipalities were added to the sample.

convincingly. The 44 audit partners included in the sample have on average 19 (837/44) yearly observations concerning 8 (348/44) municipalities.

4.2 Descriptive statistics

In the table 3 the descriptive statistics of prediction model 3 and variables used in the analyses are presented.

[Insert table 3]

The mean total reserves per capita (TR/citizen) over the period 1999-2005 are € 1,198. The average change over the auditor tenure period is an increase of € 5 per citizen. The mean TR/TA is 0.44. The average TR per capita and TR/TA are stable over the years. The dependency on state funding is expressed by the variable real estate tax deflated by general state funding. On average, the local taxes concern about one third (0.286) of the general funding by State Government (Algemene Uitkering).

The average $ACR_{PARTNER}$ is 0.45 and is significantly different from 0.5 ($p < 0.01$). This indicates that over the period 1999-2005, municipalities have suffered more decreases than increases of TR/citizen. However, consistent with the example in section 3.4, a higher *number* of decreases does not automatically result in a decrease of TR over the whole period. In fact, the average TR/citizen has remained stable over the period and the means of TR/citizen over the years 1999-2005 are not significantly different (results not tabulated). Also the change of TR/citizen is not significantly different over the years. Furthermore, the mean values of change of TR/citizen¹⁷ are examined with auditors pooled as conservative, high quality (HQ) and liberal. The differences in means are tested with one-way ANOVA test, Kruskal-Wallis test and Median-test (results not tabulated). It is reasoned in section 3 that liberal auditors have a higher risk appetite than conservative auditors. The results indicate that liberal auditors (and liberal

¹⁷ As robustness test, the mean value of variable yearly change of TR/TA_{jt} is examined. The results are similar to the yearly change of $TR/citizen_{jt}$. The correspondence of changes in TR/TA and changes in TR/citizen is important as it indicates that potential erroneous recording of accrued state subsidies as TR instead as liability, is not likely to bias the results.

municipalities) have indeed significantly ($p < 0.01$) higher mean values of the yearly change of $TR/citizen_{jt}$. This result indicates that in the period 1999-2005, liberal auditors have signed financial reports with increasing $TR/citizen$. In contrary, conservative auditors have signed financial statements with decreasing $TR/citizen$.

CCR_j is the conservativeness ratio of municipalities (client conservatism or client financial reporting preferences) and is computed similarly as ACR_a , but per municipal with at least four yearly observations. CCR_j (0.408) is significantly ($p < 0.01$) lower than ACR_a (0.448).

4.3 Audit quality differences *between* and *within* audit firms

4.3.1 Audit quality differences *between* audit firms

The first test concerns the assessment of the assumed homogeneity of audit quality *between* large audit firms. In table 4, the results of the binominal tests of equal distributions of increases and decreases of auditee's $TR/citizen$ per auditor client portfolio are reported. The test probability of 0.5 is chosen as municipalities are –on average - not assumed to make profits.

[Insert table 4]

In panel A of table 4, the results show that EY and KPMG have delivered the highest audit quality, i.e. close to 0.5 and not significantly different from 0.5. Both Deloitte (DEL) and PWC have ACR's that are significantly lower than 0.5, suggesting that these firms are liberal. Furthermore, ACR_{EY} is significantly higher than ACR_{DEL} ($p < 0.01$) and ACR_{PWC} ($p < 0.02$). ACR_{DEL} is not significantly higher than ACR_{PWC} ($p < 0.159$). *The assumption of homogeneity of audit quality between audit firms is rejected: significant differences in ACR_{DEL} , ACR_{EY} and ACR_{PWC} are observed.*

Robustness tests

The mean of the total sample (0.452) is significantly lower than 0.5 ($p < 0.01$), which is attributed to the dominant number of DEL observations in the sample. To examine whether the market domination of DEL biases the results, two matched pair analyses are performed: one based on the client group of EY and one based on the client group of PWC. The client observations are

matched on three criteria¹⁸: (1) municipalities size: number of citizens, (2) wealth: TR/citizens and (3) the extent that the municipality is dependent on state-funding: taxes/state funding (Taxes/AU). The size-criterion is included as size is generally considered to affect results. Wealth is included as wealth is a proxy of the financial health of the municipality. The higher the TR/citizen, the more buffers a municipality has to counterbalance losses. It is expected that institutions with worse financial positions are more likely to practice low quality reporting (Francis et al., 1999). The last criterion, dependency on state funding is expected to capture the ‘characteristics’ of the municipalities. The state funding is namely based on a set of criteria, such as the number of citizens, the number of households with social benefits, the number of minorities, demography of the population, extent of urbanization, size of municipality’s territory, etc. The potential revenue of local property taxes is deducted from the state funding.

In panel B of table 4, the mean ACR_a of the matched pairs sample based on EY clients is 0.47 and is not significantly lower than 0.5 ($p < 0.167$). Consistent with the total sample, the ACR_{DEL} is significant lower than 0.5 ($p < 0.073$). Also consistent with the total sample analysis, ACR_{DEL} is significantly lower ($p < 0.063$) than ACR_{EY} and is therefore Deloitte is considered a more liberal audit firm than EY.

In panel C of table 4, the matched pairs analysis based on the PWC clients is presented. The mean ACR_a is 0.44 and is in line with the total sample, significantly lower than 0.5 ($p < 0.06$). As expected, ACR_{PWC} is significantly lower than 0.5 ($p < 0.03$). Deloitte’s ACR is not significantly different from 0.5. Again, both ARC_{DEL} and ARC_{PWC} are significantly lower than ARC_{EY} at respectively $p < 0.08$ and $p < 0.01$ level and Deloitte and PWC are thus considered more liberal audit firms than EY. ACR_{PWC} is also (weakly) significantly lower than ACR_{DEL} ($p < 0.13$) and thus PWC is considered a more liberal audit firm than Deloitte.

¹⁸ For the matched pairs analyses, the size is based on 5 classes: <10k, 10-20k, 20-50k, 50-100k and 100k+. TR/citizens and Taxes/AU are categorized into three classes based on (about) one standard deviation: TR/citizens: 1=<€600, 2=€600-€1800 and 3=>€1800 and Taxes/AU: 1=<0.2 (strong dependence), 2= 0.2-0.34 and 3=>0.34 (low dependence).

The overall finding is that the results are not likely to be driven by the large number of Deloitte clients in the sample: the results are robust over all three (sub)samples.

4.3.2 Homogeneity of audit quality at the partner level within audit firms

The assumed homogeneity of audit quality among audit partners within audit firms is assessed in this section. In the table 5, the results per audit partner are reported¹⁹.

[Insert table 5]

The results from table 5 show that within audit firms²⁰, significant differences in audit quality exist between audit partners. The classification of partners is: liberal ($ACR_{PARTNER} < 0.4$), high quality ($ACR_{PARTNER}: 0.4-0.6$) or conservative ($ACR_{PARTNER} > 0.6$), which is based on the deviation from ACR_a (about 0.1) that is significant in the sample. The extent of biased (ACR is significantly different from 0.5) partners is 34% (DEL), 13% (EY) and 66% (PWC). The bias concerns principally liberalism: 66% (DEL), 100% (EY) and 33% (PWC).

The assessment of the assumed homogeneity of audit quality within audit firms is done by comparing $ACR_{PARTNER}$ with ACR_{FIRM} . Significant deviations from ACR_{FIRM} are observed in all three audit firms: 25% of DEL, 13% of EY and 33% of PWC audit partners have ACR's that are significantly different from the audit firm's ACR. *The assumption of homogeneity of audit quality at the partner level is thus rejected: significant differences are observed between audit partners within audit firms.*

Robustness tests

To test whether ACR is sensitive to client specific elements, $ACR_{PARTNER}$ is regressed on size²¹, financial leverage (total reserves/total assets), growth (yearly change in inventory²² deflated by total assets) specific circumstances (Taxes/state funding) and client conservatism (CCR_j). The

¹⁹ Similar results are found at the local audit firm office-level (ACR_{OFFICE}).

²⁰ Note that only 25 observations of KPMG are included in the sample and 17 observations concern one audit partner. The conclusion of audit homogeneity within KPMG cannot be drawn from this small sample.

²¹ Size-measure is based on principle components analysis and included number of citizens, domestic houses per squared KM, addresses per squared K, number of social benefits per 1000 households and percentage of non-western citizens. It is thus a combination of size en urbanization.

results (not tabulated) suggest that only size and CCR_j are significant ($p < 0.05$ respectively $p < 0.01$) and positively associated with $ACR_{PARTNER}$. CCR_j explains about 15% of $ACR_{PARTNER}$. In an additional analysis with multilevel regression (SPSS mixed models procedure) with CCR_j as higher level variable, the intra-class correlation based on the estimates of the covariance parameters is 0.307 (0.004/0.013) and is significant ($p < 0.017$). In the mixed models procedure, the size variable becomes insignificant and is considered part of the client reporting preferences (CCR_j). These results suggest that the reporting preferences of the client are an important determinant of the final audit quality, but also that $ACR_{PARTNER}$ captures unique information beyond client conservatism. *The results in table 5 are supported.*

4.3.3 Homogeneity of audit quality at the partner level within local audit offices

The following analysis examines whether partners located at the same local audit office deliver homogenous audit quality. In table 6, the results are reported.

[Insert table 6]

The results show that 13 audit offices in the sample have more than 1 audit partner. In this analysis $ACR_{PARTNER}$ is computed with solely observations of local audit office o . The percentage of local audit offices with one or more audit partners that have significantly higher or lower $ACR_{PARTNER}$'s than ACR_{OFFICE} is 40% (DEL), respectively 0% (EY).

In the last column of table 6 the difference between the highest $ACR_{PARTNER}$ and lowest $ACR_{PARTNER}$ at the same local audit office o is reported. The results suggest that 50% of the DEL offices and 33% of the EY offices have audit partners that have significantly different ACR 's. This result suggests that audit partners have significant influence on final audit quality delivered, *on top of* the performance of the audit team located at the concerning office.

²² Inventory includes the development of building lands to be sold to the market. The yearly change is expected to indicate growth in citizens and also in potential positive exploitation results.

The finding of differences in $ACR_{PARTNER}$, given the same audit teams at local audit office o , suggests that (i) non-standardized²³ audit decisions by the partner are important to the overall audit quality and (ii) the audit partner's personal preferences that are actually mapped in the signed financial statements, differ significantly among audit partners. *The assumption of audit quality homogeneity within local audit offices is rejected: significant differences in audit quality are observed between audit partners within local audit offices.*

Robustness tests

To examine whether partner effect holds, $ACR_{PARTNER}$ is regressed on size, financial leverage (total reserves/total assets), growth (yearly change in inventory deflated by total assets), specific circumstances (Taxes/state funding) and client conservatism (CCR_j), using the mixed models procedure with the local audit office as higher level. The results (not tabulated) suggest that the local office (read: audit teams) affects the quality of the audit partner. The intra-class correlation based on the estimates of the covariance parameters is 0.435 (0.004/0.0115) and is highly significant ($p < 0.01$). In the regression, only the client conservatism ratio (CCR) is positive and significantly associated with $ACR_{PARTNER}$, the other variables are insignificant. These results suggest that local audit teams do matter and that, to a certain extent, knowledge and expertise is transferred to local audit teams. *The results in table 6 are supported.*

Finally, the mixed model procedure is also applied with audit firm as higher level variable, but the covariance parameter estimates are observed insignificant. This supports the reasoning in section 3 that the individual auditor affects the final level of audit quality, not the audit firm.

5. Conclusions

This paper examines the assumption of homogeneity of audit quality *between* and *within* large audit firms. The hypotheses of assumed homogeneity are rejected: evidence is provided that significant audit quality differences exist *between* large audit firms and *within* large audit firms. Audit partners *within* large audit firms deliver systematically, significantly different audit quality

²³ Under the assumption that the more standardized audit procedures are performed properly by the audit teams and that the task

levels, ranging from liberalism to conservatism. Moreover, it is observed that *within* a local audit office, audit quality significantly differs among audit partners. These results support the theory on the auditor effect. Moreover, the auditor effect holds after controlling for audit team effects and client conservatism, through multilevel regression analyses. However, the significance of the audit team effects stresses the importance for more understanding of the relationship between the partner and audit teams. Also more research is needed to understand the client-auditor relationship, especially concerning auditor dependency preferences and the bargaining power of the auditor.

The observed differences between auditors lead to various research opportunities, e.g. accounting research with publicly listed firms. Furthermore, what are the determinants of high quality auditors and can the auditor business case be observed?

There are various limitations and potential caveats in my paper. First of all, my paper focuses only on the audit quality level that is actually delivered and ignores the perceived audit quality aspect. Both aspects are important for the audit profession and to some extent interdependent. However, the determinants of both kinds of audit quality may be different as the construct of brand name is consumer based and the actual quality level is product driven.

The second limitation is that two important attributes of auditor quality are not observable in study: (i) the bargaining power of the auditor and (ii) the extent of dependency on the auditor by the client. To my best knowledge, no theory exists that describes how to observe and disentangle these important aspects in archival empirical research. This limitation is also a potential caveat, because it is assumed that the extent of auditor dependency is randomly distributed over the auditor client groups. It might be, however, that certain auditor's are much better in acquiring clients that have a higher auditor dependency and the assumption of random distribution does not hold. Maybe those kinds of auditors deliver a high level of audit quality

from a management's perspective. This may be a very interesting topic for future research, as understanding the client-auditor relationship is in my opinion a key issue in auditing research.

The third limitation is the ignorance of disclosure effects in the annual report. In my paper, only the predictability property of accounting data is used as audit quality benchmark. Users of annual reports, however, may also use disclosure paragraphs to interpret the results. It might be that biased auditors have let their clients disclose the value relevant information in stead of require adjustment in the accounting data. Future research may consider this aspect as practitioners seem to find it important: in the revised ISA No. 700.13, the "overall presentation" is replaced by "sufficient disclosures".

Fourth, $ACR_{PARTNER}$ requires sufficient observations. It is not unlikely that some partners with one or two municipalities have various other clients, but are -due a lack of observations- excluded in my research. This may result in an overrepresentation of some partners in the ACR_{FIRM} . Moreover, ACR_{FIRM} is the aggregation of all observations in the sample of the audit firm, but some audit partner with a very large client group will put a heavy weight on ACR_{FIRM} . On the other hand, these audit partners are representatives of the audit firm.

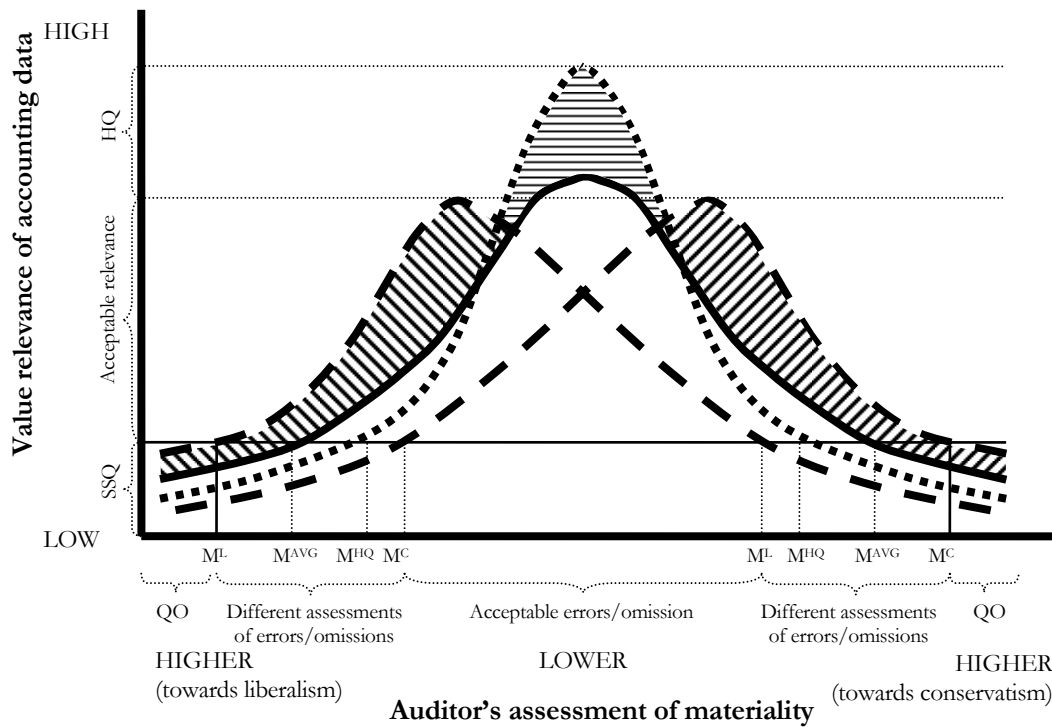
Furthermore, a limitation is that the best audit quality benchmark is not observed: the benchmark used is 'the average', which is expected to reflect the auditors' best practice.

Literature

- Beattie, V. and S. Fearnly. (1995). "The importance of audit firm characteristics and the drivers of auditor change in UK listed companies." Accounting and Business Research **25**: 227-239.
- Becker, C. M., J. Jambalvo and K.R. Subramanyam (1998). "The Effect of Audit Quality and Earnings Management." Contemporary Accounting Research **15**(no 1, Spring): 1-24.
- Blokdijk, H., F. Driehuisen, D.A. Simunic and M.T. Stein (2003). "Factors affecting auditors' assessments of planning materiality". Auditing: A Journal of Practice and Theory **22**(2):297-307
- BZK (2003-27). "Besluit begroting en verantwoording provincies en gemeenten." Staatsblad.
- Centraal Bureau voor de Statistiek, CBS, (2007). Statline, found on www.statline.cbs.nl/statweb/, Voorburg/Heerlen.
- Craswell, A., D.J.Stokes, J.Laughton (2002). "Auditor independence and fee dependence." Journal of Accounting and Economics **33**: 253-275.
- Datar, S. M., G.A. Feltham and J.S. Hughes (1991). "The role of audits and audit quality in valuing new issues." Journal of Accounting and Economics **14**: 3-49.
- DeAngelo, L. (1981). "Auditor Size and Audit Quality." Journal of Accounting and Economics: 183-199.

- DeFond, M. L. (1992). "The association between changes in client firms agency costs and auditor switching." Auditing: a Journal of Practice and Theory **11**: 16-31.
- Dopuch, N. and D.A. Simunic (1982). "Competition in auditing: an assessment." Fourth symposium on auditing research.
- Easton, P. (2001). "Discussion of: "When capital follows profitability: non-linear residual income dynamics". Review of Accounting Studies **6** (2-3):267-274.
- Easton, P., J. Pae (2004). "Accounting Conservatism and the Relation Between Returns and Accounting Data." Review of Accounting Studies **9**(4): 495-521.
- Easton, P., M. Zmijewski, (1989). "Cross-sectional variation in the stock market response to accounting earnings announcements" Journal of Accounting and Economics, 117-141
- FEE, Fédération des Experts Comptables Européens (2006). Quality assurance arrangements across Europe. Brussels: 220.
- Feltham, G. A., James A. Ohlson (1995). "Valuation and Clean Surplus Accounting for Operating and Financial Activities." Contemporary Accounting Research **11**(2): 689-731.
- Feltham, G. A. and, James A. Ohlson (1996). "Uncertainty resolution and the theory of depreciation measurement." Journal of Accounting Research **34**(2): 209-234.
- Ferguson, A., R. Francis and D.J. Stokes (2003). "The effects of firm-wide and office level industry expertise on audit pricing." The Accounting Review **78**(no. 2): 429-448.
- Francis, J., K. Reichelt and D. Wang (2005). "The pricing of national and city-specific reputations for industry expertise in the US audit market." The Accounting Review **80**(1): 113-136.
- Francis, J. E. and B. Ke (2006). "Disclosure of fees paid to auditors and the market valuation of earnings surprises." Review of Accounting Studies(December): 495-523.
- Francis, J. R., L.E. Maydew and H.C. Sparks (1999). "The role of Big6 auditors in the credible Reporting of Accruals." Auditing: a Journal of Practice and Theory: 17-34.
- IASB (2004). International financial reporting standards. London.
- ICAEW (2002). Audit Quality, Institute of Chartered Accountants in England & Wales, London
- IFAC (2005). International Standards on Auditing. New York.
- Liu, X., D.A. Simunic (2005). "Profit sharing in an Auditing Oligopoly". The Accounting Review **80**(2): 677-702
- Messier jr., W.F, N. Martinov-Bennie, A. Eilifsen (2005). "A review and integration of empirical research on materiality: Two decades later". Auditing: a Journal of Practice and Theory **24**(2): 153-187
- O'Keefe Wm.T, W.T. Sterling and J.H. Engstrom (1990). "An examination of the relations between audit scope and procedures in audits of municipalities". Accounting Horizons **4** (4):68-77
- Palmrose, Z. (1988). "An analysis of auditor litigation and audit service quality." The Accounting Review(January): 53-73.
- Reynolds, J.K. and J.R. Francis (2000). "Does size matter? The influence of large clients on office-level auditor reporting decisions." Journal of Accounting and Economics(December): 375-400.
- Simunic, D. (1980). "The Pricing of Audit Services: Theory and Evidence." Journal of Accounting Research **18**(no 1, Spring): 161-190.
- Simunic, D. and M. T. Stein. (1987). "Product differentiation in auditing: auditor choice in the market for unseasoned new issues". Vancouver, Canadian Certified General Accountants' Research Foundation: 71.
- Teoh, S. H., T.J. Wong (1993). "Perceived auditor quality and the earnings response coefficient." The Accounting Review **68**(no 2): 346-366.
- Titman, S. and B. Trueman. (1986). "Information quality and thevaluation of new issues." Journal of Accounting and Economics **8**.
- Watts, R. L. and J. L. Zimmerman (1983). "Agency problems, auditing and the theory of the firm: some empirical evidence." The Journal of Law & Economics(October): 613-633.

Figure 1 Relation between value relevance of accounting data and auditor's assessment of materiality



HQ: high quality SSQ: substandard quality QO: other than an unqualified opinion Materiality boundaries of: M^L =liberal auditors; M^{AVG} = average auditor; M^{HQ} =high quality auditor and M^C =conservative auditor	
- Assumed financial report distribution of an:	
	= Average auditor
	= Biased auditor
	= High quality auditor
- Deviation from financial report distribution of the 'average' auditor:	
	= due to auditor's liberal reporting preferences
	= due to auditor's conservative reporting preferences
	= due to auditor's high quality reporting preferences

Figure 2 The relation of accounting added value and earnings

Net Change inventory: +5% +7% +2% -7% -4.5% +2% -5% +2.5% +4.5% +5.5%

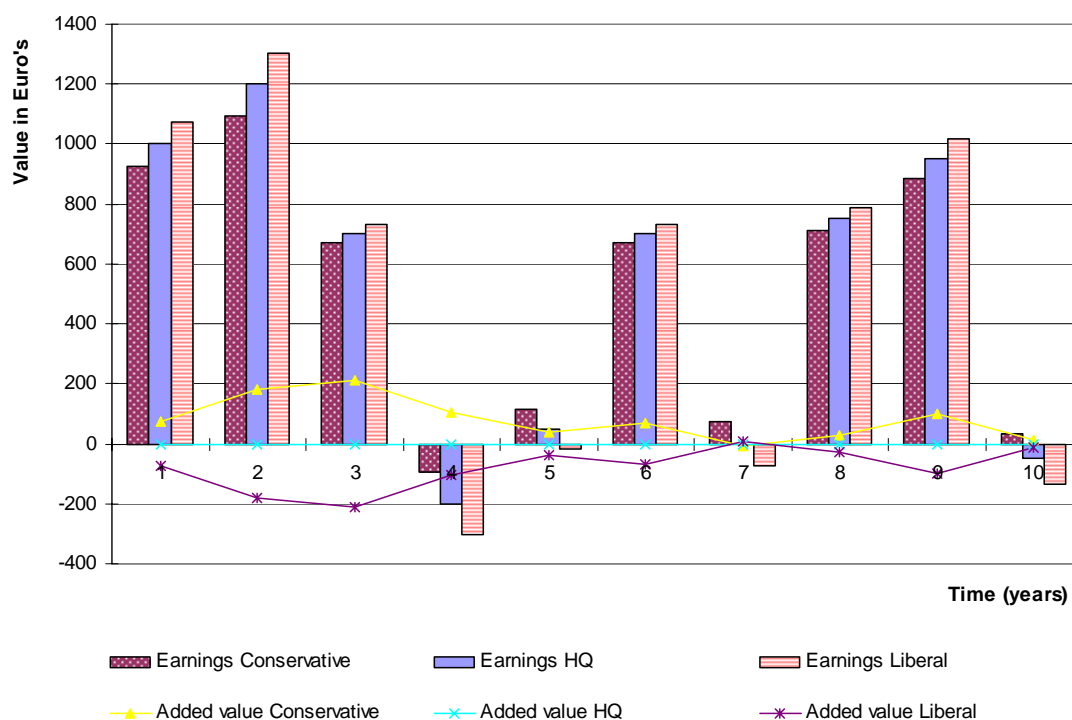


Table 1 Determination of cost prices

<i>Cost components</i>	<i>IAS No. 2 Paragraph:</i>	<i>Extent of estimation</i>	<i>Conservative Auditor group</i>	<i>HQ Auditor group</i>	<i>Liberal Auditor group</i>
Costs of purchase	11	No	Yes	Yes	Yes
Direct conversion costs	12	Significant	Yes	Yes	Yes
Indirect production costs (overhead)	13	Significant	No	Depends	Yes
Non-production overhead	15	Highly significant	No	Depends	Yes
Provision (write-down)	34	Highly significant	Yes	Yes	Yes
Cost price per unit	21		85% of HQ	100%	115% of HQ

Table 2 Sample and sample distribution

<i>PANEL A</i>		<i>Total in sample Firm level</i>	
Total Dutch municipalities (2005) ^c		458	
- missing data		-80	
<i>Included number of municipalities^a</i>		378	
<i>Total municipality-year observations^b</i>		1059	
Less:			
- missing data		-12	
- IPO ACON: too few observations		-4	
<i>Data in binominal analyses</i>		1043	

PANEL B Sample distribution over audit firms and per city-size																
Year	Municipal-year observations per audit firm					Municipal-year observations per city-size ^c					Total municipalities in the Netherlands, per city-size ^{c,d}					Total sample/ total mun. ^e (a)/(b)
	DEL	EY	KPMG	PWC	Total	<20	20-50	50-100	100+	Total (a)	<20	20-50	50-100	100+	Total (b)	
1999	29	2	-	3	34	15	11	5	3	34	310	168	34	25	537	6%
2000	29	3	-	5	37	17	10	5	5	37	269	174	36	25	504	7%
2001	43	8	-	6	57	19	26	6	6	57	260	175	36	25	496	11%
2002	121	26	3	13	163	50	73	22	18	163	250	177	37	25	489	33%
2003	240	41	7	18	306	120	130	31	25	306	246	173	39	25	483	63%
2004	212	48	10	24	294	111	124	34	25	294	223	180	39	25	467	63%
2005	99	29	5	19	152	69	53	20	10	152	212	181	40	25	458	33%
<i>Total</i>	773	157	25	88	1043	401	427	123	92	1043	1770	1228	261	175	3434	30%
<i>% of total</i>	74%	15%	2%	9%	100%	38%	41%	12%	9%	100%	51%	36%	8%	5%	100%	

^a the four largest cities in the Netherlands: Amsterdam, Rotterdam, The Hague and Utrecht are excluded because they do not need an external audit of the financial statements: an opinion of the internal auditor is sufficient; ^b information is collected Company.info database with annual reports and from questionnaires; ^c city size is based number of citizens, in thousands, classification based on CBS-classification. ^d source: Dutch Central Office of Statistics (CBS, 2007). ^e mun.=municipalities; DEL=Deloitte, EY=Ernst & Young, PWC=PricewaterhouseCoopers

Table 3 Descriptive statistics of the total sample, period 1999-2005

<i>Variables</i>	<i>Min.</i>	<i>Percentiles</i>					<i>Max.</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Valid N</i>
		<i>05</i>	<i>25</i>	<i>Median</i>	<i>75</i>	<i>95</i>				
$TR/citizen_{jt}$	-0.132	0.401	0.756	1.068	1.498	2.380	4.728	1.198	0.671	N=981
TR/TA_{jt}	-0.047	0.143	0.286	0.426	0.588	0.790	0.941	0.440	0.199	N=895
$\Delta TR/citizen_{jt-tenure=t^a}$	-1.400	-0.510	-0.110	0.000	0.110	0.570	1.590	0.005	0.334	N=789
$Taxes/AU_{jt}$	0.071	0.154	0.211	0.256	0.320	0.468	6.824	0.286	0.240	N=1037
DEV_{jt}^6	0	0	0	0	1	1	1	0.460	0.500	N=1059
$ACR_{PARTNER_{\theta}}$	0.000	0.270	0.360	0.470	0.510	0.670	0.770	0.448	0.122	N=690
CCR_j	0.000	0.000	0.250	0.430	0.570	0.860	1.000	0.408	0.247	N=492

All amounts are in thousands of euros; ^a concerns both first auditor and second auditors, if not mentioned explicitly otherwise, only the data of the first auditor is used in the analyses;

$TR/citizen_{jt}$ is total reserves per capita; $\Delta TR/citizen_{jt-tenure=t}$ is change of TR/citizen over the auditor tenure period;

TR/TA_{jt} is the total reserves deflated by total assets. The total assets (TA) are adjusted for loans granted to social housing corporations;

$Taxes/AU$ is the total real estate tax deflated by general state funding;

Firm change dummy =1 if audit firm change, else: 0;

DEV_{jt}^6 is a dummy variable on the yearly change of TR/citizen and equals 1 in case of an increase, else 0;

$ACR_{PARTNER}$ (ACR_{OFFICE}) is the number of underestimations deflated by the total observations of partner *a* (office *o*) in the sample and is computed if it exists of at least 6 observations concerning 3 municipalities;

CCR_j is the number of underestimations of TR/citizen deflated by total observations of municipal *j* in the sample and is computed if the number of observations is at least 4;

Table 4 Firm level: Binominal test of equal distribution of Audit firm client group of Dummy DEV_{jt} (probability<0.5) and ACR_{FIRM} , period 1999-2005

Panel A: Total sample					
		DEV_{jt}^a	N	$Observed ACR_{FIRM}$	p -value (1-tailed-test)
DEL	Group 1	0	429	0.555	0.001
	Group 2	1	<u>344</u>	0.445*** (ACR_{DEL})	
	Total		773	1.000	
EY	Group 1	1	80	0.510 (ACR_{EY})	0.446
	Group 2	0	<u>77</u>	0.490	
	Total		157	1.000	
KPMG	Group 1	1	13	0.520 (ACR_{KPMG})	0.500
	Group 2	0	<u>12</u>	0.480	
	Total		25	1.000	
PWC	Group 1	0	54	0.614	0.021
	Group 2	1	<u>34</u>	0.386** (ACR_{PWC})	
	Total		88	1.000	
Total	Group 1	0	572	0.548	0.001
	Group 2	1	471	0.452***	
	Total		1043	1.000	

Panel B: Matched pairs sample based on EY-client group					
		DEV_{jt}^a	N	$Observed ACR_{FIRM}$	p -value (1-tailed-test)
DEL	Group 1	0	87	0.561	0.073
	Group 2	1	<u>68</u>	<u>0.439*</u> (ACR_{DEL})	
	Total		155	1.000	
EY	Group 1	0	77	0.497	0.500
	Group 2	1	<u>78</u>	<u>0.503</u> (= ACR_{EY})	
	Total		155	1.000	
Total	Group 1	0	164	0.530	0.167
	Group 2	1	<u>146</u>	<u>0.470</u>	
	Total		310	1.000	

Panel C: Matched pairs sample based on PWC-client group					
		DEV_{jt}^a	N	$Observed ACR_{FIRM}$	p -value (1-tailed-test)
DEL	Group 1	1	27	0.435 (ACR_{DEL})	0.187
	Group 2	0	<u>35</u>	<u>0.565</u>	
	Total		62	1.000	
EY	Group 1	1	33	0.532 (= ACR_{EY})	0.352
	Group 2	0	<u>29</u>	<u>0.468</u>	
	Total		62	1.000	
PWC	Group 1	0	40	0.645	0.015
	Group 2	1	<u>22</u>	<u>0.355***</u> (= ACR_{PWC})	
	Total		62	1.000	
Total	Group 1	1	82	0.441	0.062
	Group 2	0	<u>104</u>	<u>0.559*</u>	
	Total		186	1.000	

* ** *** = significant at $p < 0.15$, $p < 0.05$ and $p < 0.01$. ^a 1-tailed test: null-hypothesis is $Dummy-DEV_{jt} < 0.5$; Dummy DEV_{jt+1}^5 is the realized TR_{jt+1} minus predicted TR_{jt+1} with prediction model 3: if $DEV_{jt+1} > 0$, then dummy=1, else 0; Matched pairs are determined on (i) size category (*1000): <10, 10-20, 20-50, 50-100 and 100+; (2) TR/citizen category: 1=<0.6, 2=0.6-1.34, 3>1.34; and (3) Taxes/State Funding category: 1=<0.2, 2=0.2-0.34 and 3=>0.34; ACR_{FIRM} is the number of underestimations deflated by the total observations of firm a in the sample and is computed if it exists of at least 6 observations concerning at least 3 municipalities.

Table 5 Partner level: Binominal test of equal distribution per audit partner client group of Dummy-DEV_{it} (probability=0.5) and ACR_{FIRM}, period 1999-2005

Partners-#	ACR _{PARTNER} ^b	Deviation 0.5	Probability:0.50 p-value ^a	Deviation ACR _{FIRM}	Prob.: ACR _{FIRM} p-value ^a	Yearly Observations.	# Municipalities
DEL		11/32=34%		8/32=25%	ACR _{DEL} =0.44	636	268
1	0.50		0.50		0.47	10	5
3	0.42		0.28		0.51	26	10
4	0.50		0.50		0.44	12	6
5	0.37 ^l		0.18		0.35	19	6
6	0.48		0.50		0.36	33	14
8	0.38 ^l		0.33		0.36	26	7
12	0.43		0.30		0.55	30	9
13	0.33 ^l	<*	0.08		0.20	24	9
14	0.55		0.40		0.34	14	8
15	0.50		0.50		0.55	14	5
16	0.50		0.50		0.42	8	4
17	0.51		0.50		0.50	35	14
18	0.67 ^c	>*	0.12	>**	0.04	17	10
20	0.50		0.50		0.47	10	3
21	0.57		0.22	>*	0.06	42	20
23	0.00 ^l	<***	0.00	<***	0.00	9	6
24	0.50		0.5		0.44	12	7
25	0.33 ^l		0.19		0.33	12	6
26	0.89 ^c	>**	0.02	>***	0.01	9	4
27	0.47		0.38		0.43	43	19
30	0.30 ^l	<*	0.06	<*	0.15	20	7
31	0.77 ^c	>***	0.01	>***	0.00	22	10
32	0.36 ^l	<*	0.12		0.28	25	7
33	0.30 ^l	<*	0.06	<*	0.15	20	9
34	0.50		0.50		0.50	8	4
35	0.50		0.50		0.42	14	7
36	0.22 ^l	<**	0.02	<**	0.05	18	5
38	0.33 ^l	<*	0.12		0.25	18	6
40	0.50		0.50		0.41	18	8
41	0.35 ^l	<*	0.10		0.25	23	12
42	0.56		0.41		0.23	18	10
44	0.52		0.50		0.26	27	11
EY		1/8=13%		1/8=13%	ACR _{EY} =0.51	135	56
2	0.50		0.50		0.59	12	6
7	0.50		0.50		0.58	14	6
9	0.41		0.45		0.20	29	11
10	0.27 ^l	<*	0.06	<*	0.07	15	5
22	0.54		0.50		0.53	13	4
28	0.56		0.40		0.43	16	9
39	0.46		0.42		0.38	26	10
43	0.50		0.50		0.60	10	5
KPMG					ACR _{KPMG} =0.52	14	6
11	0.50		0.50		0.55	14	6
PWC		2/3=66%		1/3=33%	ACR _{PWC} =0.39	52	18
19	0.35 ^l	<*	0.11		0.43	23	7
29	0.43		0.33		0.44	21	8
37	0.75 ^c	>*	0.14	>**	0.04	8	3

*. **. *** = significant at p<0.15. p<0.05 and p<0.01. ^a 1-tailed test: null-hypothesis is ACR< (conservative) or > (liberal) than 0.5 respectively ACR_{FIRM}; ^b ACR_{PARTNER} is the number of underestimations deflated by the total observations of partner *a* in the sample and is computed if it exists of at least 6 observations concerning at least 3 municipalities. ^c classified as conservative auditor; ACR_{PARTNER} is considered liberal if < 0.4, HQ: 0.4-0.6 and conservative if >0.6. ^lclassified as liberal auditor

Table 6 Differences in $ACR_{PARTNER}$ within a local audit office, period 1999-2005

<i>Audit firm offices:</i>	ACR_{OFFICE}	<i>Number of Partners at office o</i>	<i>Number of observations^a</i>	$ACR_{PARTNER} < ACR_{OFFICE}$ ^b	$ACR_{PARTNER} > ACR_{OFFICE}$ ^b	<i>Difference between highest and lowest $ACR_{PARTNER}$ at office o^c</i>
DEL:						
Alkmaar	0.64	4	68	<*	>*	0.37**
Amersfoort	0.29	2	23	<	>	0.15
Arnhem	0.55	3	31	<	>	0.14
Bergen op Zoom	0.44	3	37	<	>	0.24
Dordrecht	0.39	6	82	<*	>**	0.52**
Eindhoven	0.31	4	69	<***	>*	0.67***
Groningen	0.56	3	51	<	>	0.06
Leeuwarden	0.41	3	62	<	>	0.31***
Roermond	0.45	3	77	<*	>	0.20***
Zoetermeer	0.49	3	54	<	>	0.03
% DEL offices with partners that have significant different ACR's:				4/10=40%		5/10=50%
EY:						
Amsterdam	0.65	2	32	<	>	0.00
Eindhoven	0.30	2	27	<	>	0.45*
Groningen	0.50	2	23	<	>	0.11
% EY offices with partners that have significant different ACR's:				0/3=0%		1/3=33%

*, **, *** = significant at $p < 0.15$, $p < 0.05$ and $p < 0.01$. All one-tailed tests. ^a includes all observations at the office level.

^b test hypothesis: $ACR_{PARTNER}$ of one the audit partners is $< ACR_{OFFICE}$ respectively $ACR_{PARTNER}$ of one the audit partners is $> ACR_{OFFICE}$;

^c test-hypothesis: null-hypothesis: highest $ACR_{PARTNER} < \text{lowest } ACR_{PARTNER}$ at office o ; ^c ACR_{OFFICE} is computed if it exists of at least 6 observations, concerning 3 municipalities.

In this analysis, $ACR_{PARTNER}$ is computed with observations of each separate local audit office o .