

# “AUDIT QUALITY AND THE PARTNER EFFECT: EVIDENCE FROM EUROPEAN LISTED COMPANIES”

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## ABSTRACT

The main objective of this study is to provide evidence on the differences in audit quality amongst audit partners. I attribute these dissimilarities to (i) differences in the audit risk perception and the risk appetite of individual audit partners and (ii) to differences in the personal business case of audit partners. As a result, three audit partner archetypes have been identified: liberal, high quality and conservative. This paper will provide evidence that 50% of the audit partners (53% of the local offices) deliver, on average, an audit quality that is biased towards conservatism or liberalism. Moreover, the results indicate that 51% of the audit partners (49% of the local offices) deliver a level of audit quality that differs significantly from the audit firm's average level of audit quality. This partner effect is observed in all large audit firms included in the sample. In addition, the results suggest that the local office of the audit firm has a significant effect on the level of audit quality delivered by the local audit partners. Nevertheless, even at the local office level, 30% of the local audit partners deliver a significantly different level of audit quality.

**Key words:** audit quality, information dynamics, audit partner effect, European capital markets

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## 1. Introduction

The fundamental questions raised in this paper are *why* and *to which extent* systematic biases in financial reporting preferences and hence audit quality exist amongst audit partners. The influence of the local audit partners on the end level audit quality has so far received little attention in auditing research. However, an increasing body of academic literature recognizes the influence of the local circumstances on audit quality. For example, auditees are willing to pay local price premiums for the audit services delivered by city industry leaders (Ferguson et al. 2003; Francis et al., 2005). Additionally, negotiation studies stress the importance of the negotiation abilities and the professional ethics level of individual audit partners in relation to the end level of audit quality (Beattie, 2000, 2004; Gibbins, 2001).

To measure the audit partner effect, I develop in this paper the Auditor Conservatism Ratio (ACR), which is based on the quality of the accounting information dynamics of financial statements. I assume that the higher the quality of the accounting information dynamics is, the higher the usefulness of financial statements is for economic decision making, the higher the level of audit quality that is delivered<sup>1</sup>. The improvement of the financial statements user's economic decision making is considered an important characteristic of audit quality by both practitioners (IASB Financial Reporting Framework, par. 15ff; ISA No. 200.44; IFAC Assurance Framework par. 47; Center for Audit Quality, 2008; Public Oversight Board, 2000, section 1.34), and by academics (Titman and Trueman, 1986; Teoh and Wong, 1993). ACR is based on the principle that accounting conservatism leads to a lower volatility of accounting earnings (Feltham and Ohlson, 1996; Rajan et al, 2007). Subsequently, I describe in this paper that under the condition of

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<sup>1</sup> I define audit quality as “the performance of an audit partner to (i) deliver appropriate professional opinions supported by the necessary evidence and objective judgments and to (ii) ensure audited (financial) accounting statements to have high value relevance”. This definition is in essence similar to the definition of European Federation of Accountants (FEE), but emphasizes the audit partners' task to consider the value relevance of accounting data. The FEE states: “at its heart, audit quality is primarily about delivering an appropriate professional opinion on the financial statements of a company. This is supported by the necessary evidence and objective judgments. Audit quality normally includes: (i) Leadership, including tone at the top and audit firm strategy; (ii) People of competence, quality, objectivity and integrity; (iii) Working practices and quality control procedures; (iv) Internal monitoring by audit firms of leadership, people, client relationships and working practices and (v) External monitoring under public oversight to encourage and assist audit firms to improve audit quality.” (FEE, 2006, p. 10)

growth, the number of profits is higher (lower) in the case of accounting conservatism (liberalism). In addition, I show in this paper with a numerical example that the distribution of profits and losses<sup>2</sup> is an appropriate means to measure accounting conservatism. ACR includes the number of profits relative to the total number of financial statements signed by an audit partner and ranges from zero (extremely liberal) to one (extremely conservative). All things being equal, ACR should be the same for all audit partners (local offices). However, I reason that the distribution of profit and losses will be different due to audit biases towards liberalism (i.e. higher accounting volatility with a higher number of losses, which lowers ACR), or towards conservatism (income smoothing, a higher number of profits, resulting in a higher ACR). When ACR differs significantly from the audit profession's accounting solution ( $ACR_{COUNTRY}$ ), an audit bias is assumed.  $ACR_{COUNTRY}$  is a uniquely compiled benchmark group that matches the audit partner client group on five factors<sup>3</sup>, namely country, 15 industries, three financial leverage classes, three size classes and years as matching conditions. In the same way, audit quality differences *within* audit firms are determined by using  $ACR_{FIRM}$ , which is based on observations from the audit firm's client portfolio.

In this paper, partner level (local office level) research is based on a sample of 296 (810) European listed companies, with 1,387 (4,083) yearly observations over the period 1997-2005. Evidence is provided that in total 50% of the audit partners (53% of the local offices) have an audit bias towards either conservatism or liberalism. Moreover, 51% of the audit partners (49% of the local offices) deliver a level of audit quality that is significantly different from the audit firm's average audit quality level. This result does not support the frequently made assumption of a reasonably homogenous level of audit quality *within* large audit firms (DeAngelo 1981; Simunic and Stein, 1987). Finally, my observation is that *within* a local audit office, 30% of

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<sup>2</sup> Note that the distribution of profits and losses represents the *count* of profits and losses and *not* the monetary amounts in Euro's.

<sup>3</sup> Note that in case of governmental organizations, e.g. municipalities, the high audit quality benchmark is straightforward, namely 0.5. These organizations are generally not allowed to make profits (systematically) and must have balanced budgets. The distribution of surpluses and deficits is on average 50/50. See Van Buuren and Langendijk (2008) for more details.

the audit partners deliver a significantly different level of audit quality. These results support the concept of the audit partner effect. Furthermore, multilevel regression is applied to test for random effects at the local office level, audit firm level and the client conservatism level. The results suggest that the level of audit quality delivered by the audit partner is nestled within the local office. In other words, local offices, i.e. audit teams, seem to affect the audit partner's level of audit quality and thus, to a certain extent, knowledge seems to be transferred from the audit partners to the local audit teams and vice versa (Ferguson et al, 2003; Francis and Yu, 2007). When the local office is included as higher-level variable in the applied regression model, the  $R^2$  improves by 41%. No evidence is found of random effects at the audit firm level. This result indicates that (large) audit firms do not differentiate systematically by affecting the level of audit quality delivered by the local audit partners. Additionally, no evidence is found for audit quality *nestling* within client conservatism and this lack of evidence supports the assumption that an auditor selection bias (e.g. liberal clients select liberal auditors) is not the driving force behind the results. However, client conservatism does explain about 15% (12%) of the variance in  $ACR_{PARTNER}$  ( $ACR_{OFFICE}$ ).

This paper is, to the best of my knowledge, the first attempt to provide evidence on the audit partner effect, based on the concept of materiality and from the perspective of the usefulness of financial statements of (European) listed companies. Secondly, the audit partner effect allows audit quality to vary amongst individual audit partners (local offices), and recognizes the complex nature of auditing, in particular regarding the accounting topics which are significantly affected by estimates. The recognition of the significant differences amongst individual audit partners results in a more thorough understanding of the audit partner's role. This may affect the viewpoint on how to monitor audit quality by the audit firm and by the public oversight boards.

This remainder of this paper is organized as following: in section 2 the concept of the audit partner effect is described, the auditor conservatism ratio (ACR) is formulated, and the

research model is provided. Section 3 states the empirical results of the audit partner effect. Section 4 contains the summary and conclusions.

## **2. Accounting information dynamics and the audit partner effect**

### ***2.1 Accounting information dynamics***

Feltham and Ohlson (1995) analyzed theoretically the relation between market valuations and the current accounting numbers by introducing the ‘dynamic linear information model’ (LIM). LIM illustrates that accounting data captures relevant information, even in conservative accounting (FO’95). Easton (2001) reports two kinds of value creation which are potentially not mapped in the financial statements due to the conservative realization principle and the prudence principle of financial reporting.

*Economic value added* is created when the decision is made to invest in a project with an expected positive Net Present Value (NPV), but this expected profit is not included in the profit and loss statement until the profit is realized. 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 non-accounting information, the audit partner should consider how the reported developments and the reality of current conditions are mapped in the financial statements.

*Accounting value added* is created by the application of accounting principles to (i) cash receipts/disbursements during the current period and to (ii) changes in the value of assets used to generate these cash receipts/disbursements. Accounting value added is thus created due to specific applications of accounting principles, e.g. the valuation of assets, such as inventories. Differences in accounting value added may exist due to differences in the extent of accounting conservatism, e.g. one company estimates the economic lifecycle of an asset to be 10 years, while another company may estimate the economic lifecycle under similar circumstances as 15 years. Only with hindsight the true economic lifecycle can be determined, but in the meantime, the profit and loss statement has been affected by either too conservative or too liberal accounting

estimates. Such estimates will never be perfect, but should represent the true value ‘fairly’, i.e. should be ‘reasonable’ considering the circumstances known at that time. Such an estimation error is allowed under the concept of materiality. However, such imperfections can result in the systematic differences in estimation. Feltham and Ohlson (1996) analyzed that a systematic overdepreciation of assets leads to a downward bias in earnings under the assumption of growth, creating positive accounting value added. Rajan et al. (2007) support Feltham and Ohlson (1996) with additional theory and evidence on how the return on investment metric (ROI) is affected by the extent of accounting conservatism and by the extent of growth. Rajan et al. (2007) report that under the condition of high (low) growth and a high (low) degree of accounting conservatism<sup>4</sup>, ROI is biased downwards (upwards). This overdepreciation is not problematic as long as the reported earnings remain predictable, i.e. the users of financial statements are able to estimate and value this bias. Easton and Pae (2004) report strong evidence that capital markets recognize *economic value added* in accounting numbers. However, Easton and Pae (2004) observe only weak support with respect to the recognition of *accounting value added* by the capital markets. The thorough understanding of both kinds of value added regarding the audited company is considered to be of importance to the audit partner in making the appropriate assessments of significant estimates and the overall presentation of the financial statements (ISA No. 700.14). These assessments require personal understanding of the client’s business and the needs of financial statements users, knowledge and experience of the audit partner (ISA No. 315.23).

## ***2.2 Professional judgment and the concept of materiality***

The fundamental questions raised in this paper are *why* and *to which extent* systematic biases in financial reporting preferences amongst audit partners are likely to exist. I reason that is likely that the concept of materiality is driving audit quality differences amongst audit partners and hence differences in the assessment of audit risks. Academic literature suggests that significant

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<sup>4</sup> Conservatism in this study is similar to ‘unconditional conservatism’, which generates an understatement of net assets. ‘Conditional conservatism’ concerns the asymmetry in timeliness in capturing bad news respectively good news (Rajan et al,

differences exist amongst the large audit firms (Morris and Nichols, 1988; Wheeler et al, 1993) and that it is likely that significant differences in materiality assessment amongst audit partners within audit firms exist (Carpenter et al, 1994, p. 374; Martinov and Roebuck, 1998). Materiality and the audit risk have a negative relationship: the higher the level of materiality, the lower the level of audit risk and vice versa (ISA No. 320.10). Moreover, materiality assessments are the outcome of weighing quantitative and qualitative factors, which is also assumed to vary amongst auditors (Ng and Tan, 2007) and the audit risk will vary accordingly as well. Therefore, differences in the audit partner's risk appetite are likely to result in different assessments of what "acceptable materiality solutions" are. The concept of the audit partner effect (Van Buuren and Langendijk, 2008) ascribes systematic differences in audit quality amongst audit partners due to differences in technical and communication capabilities and skills. Such differences in the individual capabilities amongst audit partners are assumed to affect the quality of risk assessment and the probability to obtain an attractive auditor business case. In addition to the technical skills of an audit partner, the communication capabilities, including negotiation skills are considered essential (Beattie et al, 2000; Gibbins et al, 2001). While observing risks and errors is *important*, convincing management to adjust the financial statements in case of disagreements is *vital* to achieve the required level of audit quality. Therefore, the audit partner's communication skills are considered essential to turning technical excellence into actual audit success. Furthermore, although constrained by personal capabilities, audit partners are assumed to develop an auditor business case. Such a business case is considered vital to survive the competitive audit markets and may be encouraged by audit firms with the use of profit-sharing rules (Liu and Simunic, 2005). It is reasoned that audit partners can specialize in high accrual/riskful clients, with high audit efforts to reduce the audit risk to an acceptable level, resulting in a high audit fee. Furthermore, audit partners may specialize in high quality audits and charge a more than average audit fee. Finally, audit partners may specialize in low risk audits, eliminating the audit risks in

the financial statements as much as possible, enabling lower audit effort and charge low audit fees, but still satisfy the audit firm's internal revenues and profit targets (Van Buuren and Langendijk, 2008). These business strategies will result in certain audit partner archetypes, which are labeled as liberal, high quality or conservative audit partners<sup>5</sup>. Note that all the auditor business cases satisfy the requirements of the applicable GAAS and GAAP. Auditor specialization in certain industries is expected to enhance the auditor business case (Ferguson et al, 2003; Francis et al, 2005). A constraint on the effectuation of the auditor's business case is caused by differences in the intrinsic preference of auditees to depend on the audit partner for support and advice (McCracken et al., 2008). The intrinsic preference of the auditee to depend on the audit partner is an important attribute to the audit partner effect: the more the auditee seeks the support and advice of the audit partner, the stronger the audit partner effect will be. The degree of the auditees' dependence on the audit partner is assumed to be distributed randomly over the audit partner client groups<sup>6</sup>. Furthermore, the audit partner effect is not likely to be attributed to an auditor selection bias, as it hard for the client to estimate the true audit partner's archetype in the short period of an audit engagement bid<sup>7</sup>.

### ***2.3 Auditor Conservatism Ratio***

In this study, the audit partner effect is measured based on the property of accounting conservatism (liberalism) to decrease (increase) the volatility in earnings (Feltham and Ohlson, 1996; Rajan et al, 2007). Hence, I assume that the distribution of profits and losses is also

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<sup>5</sup> In fact, the high quality auditor corresponds to the "crusader" seller type of Beattie et al. (2004) and the conservative and liberal auditors correspond to the "accommodators" seller type. We assume auditors make well-thought through decisions and have a sufficiently skeptical mindset. Therefore, the other seller types (trusters, incompetents and rogues) as defined by Beattie et al (2000, 2004) are not part of this study.

<sup>6</sup> In addition, I assume that the potential influence on the audit partner effect arising from corporate governance choices by the individual company boards (Cohen et al., 2007) are also distributed evenly over the audit partner clients. Cohen et al. (2007) provide evidence, based on an experiment with 65 experienced auditors, that the board's choice for stronger (weaker) internal monitoring and higher (less) involvement in the company's strategies (resource dependence) are likely to result in lower (higher) estimated control risks, and therefore potentially less (more) audit effort is necessary for such companies.

<sup>7</sup> In addition, the audit partner has limited tools to assess the true auditees' financial reporting preferences within this short period. Moreover, the audit partners have to meet the audit firm's internal revenue targets and cannot be, under competitive market conditions, too selective in accepting clients.

effected by accounting conservatism, resulting in a relative higher number of profits<sup>8</sup> in case of accounting conservatism, for two reasons. First, companies will apply accounting conservatism in such a way that they benefit from it, e.g. earnings management to avoid (small) losses (Burgstahler and Dichev, 1997). Second, differences in the accumulation of accounting value added under the condition of growth (Feltham and Ohlson, 1996; Rajan et al, 2007) affect the distribution of profits and losses. The accumulation of positive (negative) accounting value added<sup>9</sup>, in case of accounting conservatism (liberalism) is because of overdepreciation (underdepreciation) of e.g. production assets or too low (high) cost prices of inventories. Under the circumstance of decline this positive (negative) accounting value added is released, resulting in a positive (negative) contribution to the result for the year in case of conservative (liberal) accounting. As a result, the release of positive (negative) accounting value added may turn losses (profits) into profits (losses), affecting the distribution of profits and losses. To examine the audit partner effect, the average information dynamics of the financial statements of an audit partner's client group is determined based on systematic differences in the distribution of profits and losses due to differences in financial reporting preferences amongst audit partners, resulting in the Auditor Conservatism Ratio (ACR):

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

Where is company  $j$  at moment  $t \in \{1, \dots, n\}$  and company  $j \in$  audit partner client group  $a \{1, \dots, l\}$  and ACR ranges from  $[0,1]$ . The audit partner client groups can also be aggregated at the local office level, and at the audit firm level. *ACR<sub>a</sub> represents the extent to which an audit partner signs financial statements that have a systematic bias towards conservatism or liberalism:*

- If  $ACR_a=0$ , than the audit partner is considered “extremely liberal”;
- If  $ACR_a=1$ , than the audit partner is considered “extremely conservative”;

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<sup>8</sup> Note that the distribution of profits and losses represents the *count* of profits and losses and *not* the monetary amounts in Euros.

<sup>9</sup> Or put in other words, accounting value added can be read as ‘hided reserves’

- If  $ACR_a$  equals the high quality benchmark ( $ACR_{BENCHMARK} = 0.5 + \delta$ ), the audit partner has no systematic bias and is considered a high quality audit partner.

In the case of companies,  $\delta$  is unknown, but for profit-driven organizations  $\delta$  will normally be higher than zero. To determine  $\delta$ , a unique high audit quality ACR benchmark has been computed for each individual audit partner, based on the audit partner's unique group of clients. A significant deviation from this high quality benchmark is attributed to a lower level of audit quality. I assume that, under the conditions of (i) no auditor bias and (ii) comparable companies, the distribution of profits and losses should be similar when comparing the audit partner's client groups and the benchmark groups. The probability that the results are seriously affected by the chance of an audit firm having a significant higher proportion of bad performing companies is considered low if the sample is sufficiently large. To distinct the audit partner effect from client specific circumstances, ACR should include a reasonable number of auditees per audit partner client group. The threshold of the number of auditees per audit partner client group is arbitrarily chosen in this research and is set on at least six yearly observations concerning a minimum of three auditees. According to ISA No. 570.18, an audit partner should evaluate the management's going concern assumption for at least a 12-month period. Analogue to this, the 'true and fair view' and information dynamics should be sufficiently robust to be valid for at least 12 months in the case of high quality audits.

#### ***2.4 Audit quality benchmarks***

For companies, no straightforward general high audit quality benchmark is available. The probability of profits and losses differs amongst companies and therefore the determination of audit quality differences is done with the use of a matched pair analysis. By respecting the threshold of at least six observations, regarding at least three companies, the distribution of profits and losses of the audit partner client group is compared to the distribution of profits and losses of a benchmark group of companies. Two benchmark groups are created:

- *The high audit quality benchmark* ( $ACR_{COUNTRY}$ ). Benchmark companies are selected randomly from the portfolio of companies *per country*, independent of the audit firm. This benchmark group serves as high audit quality benchmark because it is considered to represent the best audit practice<sup>10</sup> of that particular country for that particular group of companies. A significant deviation from this high quality benchmark is attributed to a lower level of audit quality:
  - If  $ACR_{PARTNER} > ACR_{COUNTRY}$  than the audit partner is considered a *conservative* auditor;
  - If  $ACR_{PARTNER} < ACR_{COUNTRY}$  than the audit partner is considered a *liberal* auditor.
- *The audit firm's average audit quality benchmark* ( $ACR_{FIRM}$ ). This benchmark is created by selecting random observations from the client portfolio of that particular audit firm per country. Significant deviations from the  $ACR_{FIRM}$ -benchmark suggest audit quality differences *within* the audit firm.

To create a reasonable reliable benchmark client group, five matching criteria have been applied. First, company-year observations are matched on *country* as differences per country may exist due to local economic circumstances. Moreover, some differences exist in accounting (GAAP) and auditing regulations (GAAS) between countries (Burgstahler et al, 2006; Maijor and Vanstraelen, 2006; Leuz et al., 2003). Second, only matched pairs are selected from the same *year*<sup>11</sup>, as economic circumstances will differ from year to year. Third, differences are expected in economic circumstances between *industries*, affecting the distribution of profits and losses. In addition, the degree of accounting value added may differ between industries. Therefore, only observations are selected that are from the same industry. In total 15 industries are categorized

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<sup>10</sup> Or in other words, it should represent the consensus on how the audit profession in that country has applied and interpreted the local accounting and auditing standards for that particular group of companies.

<sup>11</sup> In case of non-calendar book years, companies with financial closings up to June are considered part of previous year and after June as part of the current year.

based on a 2-digit SIC-classification<sup>12</sup>; Fourth, the *financial leverage* of companies is expected to affect the distribution of profit and losses as financially troubled companies may have relative higher accrual positions and may be involved in earnings management (Becker et al., 1998). Additionally, highly leveraged companies are considered to have a higher risk profile and are expected to have higher costs of debt, which may affect the distribution of profit and losses<sup>13</sup>. Fifth, *size* is expected to have a mitigating effect on the distribution of profits and losses (Klein and Marquardt, 2006). The larger the company, the higher the probability of a broader range of activities, and thus a higher probability of balancing losses with profits between divisions<sup>14, 15, 16</sup>.

### **2.5 A numerical example of ACR**

In this section I describe an example to show the relation between the audit partner's financial reporting preferences and ACR. Imagine three audit partners with different financial reporting preferences: liberal, conservative and high quality. Assume that these three audit partners have exactly similar client groups of sufficient size, which -on average- only differ in the accounting method with regard to the valuation of inventories<sup>17</sup>. In this example, the differences in estimations lead to differences in cost prices of the three audit partner client groups: ranging from

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<sup>12</sup> The Industry variable includes 15 industries, based on 2-digit SIC-code and the applied classification is similar to Easton and Pae (2004), but excludes financial services (code #6500-6999). 2=Mining and construction #1000-1099, #1200-1499, #4500-4599; 3=Food #1500-1699; 4=Textiles and printing #1700-2299; 5=Chemicals #2300-2499, except #2440-2449; 6=Pharmaceuticals #2440-2449; 7=Extractive industries #1100-1199; 8=Durable manufacturers #2500-3799, except #3000-3099; 9 Computers #3000-3099, #7200-7299; 10=Utilities services #4000-4199; 11=Transportation #6000-6499; 12=Retail #5000-5499; 13=Real estate #7000-7099; 14=Services #7100-8999, #5500-5999, except #7200-7299 and 15=Others #9000-9999.

<sup>13</sup> Therefore, the pairs are matched based on three financial leverage categories: "equity deflated by total assets"= high leverage <0.33; medium leverage: 0.33-0.66 and low leveraged companies: >0.66.

<sup>14</sup> These classes are based on the distribution of the number of companies within the sample and the relative intra-class distance between smallest and largest companies, which is about ten times in the aforementioned categorization.

<sup>15</sup> Therefore, cases are selected from the same size class, based on total revenues: small: <70 million, medium sized: 70 million to 1 billion and large companies: > 1 billion.

<sup>16</sup> Increasing the number of financial leverage and size classes drastically reduces the number of matched pairs and is not expected to improve significantly the probability of equal distributions of profits and losses. For this research project the five criteria result in 6,075 possible categories: five countries (Switzerland, Finland, France, United Kingdom and the Netherlands) \* nine years (1997-2005) \* 15 industries \* three financial leverage categories \* three size classes.

<sup>17</sup> Initially, determining the cost prices for inventory valuation seems rather straightforward. However, most parts of the cost price require a certain degree of estimation. For example, determining the allocation of production overhead costs requires estimates regarding depreciation periods and the normal capacity of production assets (IAS No. 2.12). When markets are dynamic and volatile, under- or overdepreciation of assets is likely to occur due to differences in the actual use of assets and the actual life cycle of products. The extent to which estimation is required, is considered even greater for the allocation of non-production overhead, such as handling and storage costs. Finally, the degree of estimation is great when determining the amount of write-downs to net realizable value of inventories.

85% (conservative) to 115% (liberal) relative to the cost price of the high quality audit partner group (100%). I assume the cost price of the high quality audit partner group to be as close to the true economic value as possible, but the values of the conservative and liberal groups are also acceptable under the applicable GAAP<sup>18</sup>. In table 1, the results of the numerical example are provided and should be interpreted as follows.

[insert table 1]

In year 1 of the example in table 1, 5%<sup>19</sup> of the purchased goods are unsold and added to the inventories. As a result, because of the dissimilarities in cost prices of inventories, differences in earnings between de audit partner client groups will occur. The average profit of the high audit quality partner client group of € 975 in year 1 is assumed to be as close to the average actual economic profit as possible, and will thus be used as high quality benchmark. If the cost prices are below (above) the true value (i.e. high quality audit partner group), positive (negative) accounting value is created. The profit of the conservative (liberal) audit partner client group is € 904 (€ 1046) in year 1 with an amount of positive (negative) accounting value added of € 975-€ 904 = € 71 (€975-€1046= - €71). Subsequently, the value of the inventories increases in the first year from € 100 to € 504 (€ 646) for the conservative (liberal) audit partner client group. Observe in table 1 that the earnings of the liberal client group are more volatile than of the other groups: in the case of increasing inventories higher profits, and in case of decreasing inventories larger losses. Consistent with FO'95, the accounting value added develops solely under the condition of growth, which is in this example the growth of inventories. The overall growth of inventories is 1% over the ten-year period results in a difference in the cumulative accounting earnings of (see table 1):

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<sup>18</sup> Assume that the audit partners' client groups consist solely of trading companies. Furthermore, assume for the sake of simplicity that the audit partner client groups have a yearly mean turnover of € 10,000, and the yearly mean total costs amount to € 9,500. The total costs include the cost of purchase of trade products, direct conversion costs and overhead costs (both indirect production and non-production overhead). The total costs are allowed to be fully included in the cost prices of inventories. The turnover, total costs, production and cost prices of inventory remain unchanged over a ten-year period. Furthermore, assume that yearly changes in the cost of goods sold can be solely attributed to changes in inventories. Subsequently, only the earnings per product sold will fluctuate per year.

- Conservative: € 5,081 and positive accounting value added of € 14
- High Quality: € 5,095 and no accounting value added of € 0
- Liberal: € 5,109 and negative accounting value added of € 14

Subsequently, the return on sales (ROS) over the ten-year period is the highest for the liberal client group (5.11%), and the lowest for the conservative client group (5.08%). However, when no growth of inventories occurs in this period, the cumulative earnings will be equal for all groups, i.e. € 5,095<sup>20</sup>. The accounting value added of the high quality (HQ) client group is nil, as it is assumed to be as close to the true economic value as possible under the conditions of the GAAP principles. Finally, observe that the distribution of profits and losses is different for the audit partner client groups, resulting in different ACRs:

- Conservative audit partner client group: 9 profits, 1 loss → ACR = 0.9 (9/10)
- HQ audit partner client group: 8 profits, 2 losses → ACR = 0.8 (8/10)
- Liberal audit partner client group: 7 profits, 3 losses → ACR = 0.7 (7/10)

This simple example illustrates the consequence of different valuation choices regarding inventories in relation to auditor conservatism. Also a sensitivity test in which the model in table 1 is re-run 3,342 times with different inventory change rates, support these results<sup>21</sup>.

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<sup>19</sup> The yearly changes in inventories are chosen randomly.

<sup>20</sup> In the case of an *overall decrease* of inventories of 1%, the cumulative earnings of the conservative (liberal) group will be € 5,109 (€ 5,081).

<sup>21</sup> To examine whether the described numerical example is a ‘lucky’ coincidence, a sensitivity test is conducted. The test is structured as follows: first, the yearly inventory change rates fluctuate from -7% to 7%, with steps of 1%. Second, the inventory change rates are mixed randomly over the years to create unique strings of yearly inventory change rates. Finally, a sample of 3,342 unique strings of inventory change rates over a 10-year period is created. The numerical example of table 1 is re-run 3,342 times for each of the audit partner client groups. The untabulated results show that ACR is significantly different ( $p < 0.01$ ) for the three audit partner client groups. The conservative audit partner client group has a mean ACR of 0.935, the high quality auditor group has a mean ACR of 0.871, whereas the liberal audit partner client group has a mean ACR of 0.807. The return on sales (ROS) are all fairly equal, ranging from 4.91% (liberal audit partner client group) to 4.94% (high quality audit partner client group) to 4.97% (conservative audit partner client group), although the differences amongst the audit partner client groups are significant ( $p < 0.01$ ). Note that in the numerical example, ROS was highest for liberal audit partner client groups, which is seemingly a case-specific finding. Nevertheless, the fairly equal ROSs and the quite different ACRs when comparing audit partner client groups, emphasizes that within the distribution of profits and losses unique information of auditor conservatism is captured.

### **3. Research results**

#### ***3.1 Data collection***

The sample includes data from listed companies in Europe for the period 1997-2005. The accounting data is collected from the Amadeus database (version 2006). In total 17,127 yearly observations are obtained from Amadeus concerning listed companies in Switzerland, Finland, France, United Kingdom (UK) and the Netherlands. Financial institutions are excluded from the sample, as their financial statements characteristics are too divergent from other industries, deleting 3,949 company-year observations. Auditor information such as partner names, office locations, auditors' opinion and audit fees are not available in Amadeus, and are collected manually from financial statements available at Company.info-database, resulting in 9,353 (11,978) company-year observations at the local office level (audit partner level) that have missing auditor data and which are deleted from the sample. Finally, because of joint audits, principally in France, 258 (187) company-year observations are used twice at the office (partner level), resulting in a total of 4,083 (1,387) yearly observations used in the analyses.

#### ***3.2 Sample distribution***

Table 2 shows the distribution of observations per year, industry, country and audit firm. It reflects the sample distribution for the matched pair analysis at the *office* level. In total 4,083 observations are included. Moreover, the distributions per audit firm and per country are reasonably equally distributed over the years, about 10%-16% of the total sample. Only 1997 and 1998 are underrepresented (Panel A of table 2, second to last column). As of 2003 no observations from Arthur Andersen (AA) are obtained as it dissolved in 2002, and its activities were merged with other large audit firms. In Switzerland and France AA merged with Ernst & Young (EY). In the UK and the Netherlands AA merged with Deloitte.

[Insert table 2]

In panel B of table 2, the yearly observations per audit firm and per country are stated per industry. The “services” industry dominates the sample with 35% of total observations, followed

by “durable manufactures” industry (19%) (panel B of table 2, second to last column). In particular France and Switzerland have the most observations in the ‘services’ industry. The UK and the Netherlands have a sample more equally distributed amongst the industries, but with a mild dominance of the “durable manufacturers” in the UK with 23% (450/1,982). Also the Finnish sample is dominated by “durable manufacturers”: 71% (97/136). The NonBig5 sample seems to correspond to the French and Swiss samples, and principally reflects observations from the ‘services’ industry. The industry distribution in the sample represent fairly the overall audit market<sup>22</sup> and the results are reported in the last column of table 2, panel B.

### ***3.3 Homogeneity of audit quality at the local office level***

In this section I assess the generally assumed homogeneity of audit quality *within* large audit firms (DeAngelo, 1981; Simunic and Stein, 1987) at the local office level. In this study, the average level of audit quality delivered by a local office (audit firm) is considered a bottom-up aggregation of the levels of audit quality delivered by individual audit partners, and not the result of the top-down monitoring and controlling of audit quality by the large audit firms (local offices). Therefore, the results at the local office level are considered the average audit quality level delivered by the local audit partners. Consequently, especially in the case of audit partners with different financial reporting preferences, the local office results may be less pronounced than results measured at the audit partner level.

For test purposes a matched pair analysis is conducted, based on the five criteria: country, year, industry, equity and total revenues. The matched pair analysis is performed twice: (i) matching observations found *within the client group of the audit firm* ( $ACR_{FIRM}$ ) and (ii) matching companies found *within the group of companies within a country* ( $ACR_{COUNTRY}$ ). The results are reported in table 3.

[insert table 3]

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<sup>22</sup> Based on the Amadeus datasets of 2000-2005 and manually collected data from financials statements available at Company.info-database, the market shares per audit firm are computed. In total 13,436 observations are included, including 1,175 double company-

Table 3 shows that the ACR threshold of at least six observations, regarding three companies, is met convincingly. The  $ACR_{OFFICE}$  is based on *within audit firm* data with on average 22.75 yearly observations per office, concerning 7.85 companies.  $ACR_{OFFICE}$  based on *country matches* has on average 43.65 observations per local office, concerning 11.15 companies. Their counterparts,  $ACR_{FIRM}$  and the high audit quality benchmark  $ACR_{COUNTRY}$  have a higher ratio of companies per local office (respectively 11.07 and 25.61). These higher ratios of companies per local office make these ACRs sufficiently robust and reliable, as they lower the probability that certain companies dominate  $ACR_{FIRM}$  and  $ACR_{COUNTRY}$ .

Table 3 signals substantial differences *within* audit firms: 49% of the offices have significant biases of 52% (15/29) towards liberalism, and of 48% (14/29) towards conservatism. The percentage of *within audit firm* audit quality differences is observed for each audit firm: 25% (AA), 38% (DEL), 69% (EY), 50% (KPMG) and 45% (PWC). These *within audit firm* audit quality differences are consistent for all countries (untabulated). This result challenges the generally assumed reasonable homogeneous level of audit quality within (large) audit firms (DeAngelo, 1981; Simunic and Stein, 1987).

The second analysis of  $ACR_{OFFICE}$  and the high quality benchmark,  $ACR_{COUNTRY}$  renders similar results: 53% of the local audit firm offices are classified as biased: 49% (19/39) towards liberalism and 51% (20/39) towards conservatism. Again, these results are reasonably consistent amongst the audit firms: 29% (AA), 45% (DEL), 64% (EY), 53% (KPMG) and 56% (PWC) of the audit offices have significantly different audit quality levels than the country-benchmark ( $ACR_{COUNTRY}$ ). For 77% (46/59) of the local offices<sup>23</sup>, the classification of  $ACR_{OFFICE}$  relative to the *within audit firm* benchmark ( $ACR_{FIRM}$ ) respectively the audit quality benchmark

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year observations because of the joint audits.

<sup>23</sup> Note that only in the case of EY Amsterdam, the classification is quite different (results not tabulated). For this local office, the *within* audit firm difference classification is 'conservative', but the audit quality classification is 'liberal'. In all other cases, the classification difference between  $ACR_{FIRM}$  and  $ACR_{COUNTRY}$  is only one category, namely between high audit quality and conservatism respectively liberalism.

( $ACR_{COUNTRY}$ ) is similar, which suggests that the determining process of  $ACR_{OFFICE}$  is quite robust.

### ***Robustness tests***

The first robustness test is a multilevel regression (SPSS mixed models procedure) with the audit firm used as higher-level variable. If the audit firm has explanatory power as a higher-level variable, the data suggest that differences between the firm's audit procedures and internal governance systems of certain audit firms create more effectiveness in influencing the audit quality delivered by local audit partners. Furthermore, variables which may reasonably explain ACR, are included as covariates in the first level of the multi-level regression. The results are presented in table 4, column 1.

[insert table 4]

The intra-class correlation of 0.145 ( $0.0012/(0.0012+0.0071)$ ) is based on the covariance parameters estimates, and is insignificant at conventional levels. The insignificance of the audit firm variable suggests that no systematic inter-audit firm differences in audit quality governance exist, and that the (large) audit firms do not differentiate systematically in affecting the level of audit quality delivered by local audit partners<sup>24</sup>.

To test whether ACR is sensitive to an auditor selection bias (e.g. liberal companies select liberal auditors), a second analysis with multilevel regression is carried out, with client conservatism (Category  $CCR_j$ ) as higher-level variable<sup>25</sup>. If the company's CCR is significantly lower (higher) than  $CCR_{COUNTRY}$ , the company is considered a liberal (conservative) company or else a high quality reporting company. Category CCR and *not* CCR is used as a higher-level

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<sup>24</sup> The client conservatism ratio (CCR) is 0.149 ( $p < 0.01$ , table 4, column 1). CCR is the company's counterpart of ACR, and reflects the number of profits deflated by the total observations of company  $j$  in the sample. These results suggest that the client's financial reporting preferences are an important determinant in the final audit quality delivered. In a (untabulated) OLS regression (with similar variables) CCR explains about 12% of the variance in  $ACR_{OFFICE}$ .

<sup>25</sup> Category CCR is determined as follows: for each company with at least four observations (for fair test results), a unique high quality benchmark ( $CCR_{COUNTRY}$ ) is computed, matched on country, 15 industries, three financial leverage classes, three size classes and year (this procedure is similar to determination of  $ACR_{COUNTRY}$ ).

variable, because Category CCR suggests a *nestling* at the audit partner's level of audit quality within the classes of client's financial reporting preferences (liberal, high quality or conservative). Such nestling would suggest an auditor selection bias. CCR itself does not, however, represent a higher level and is meaningless if not compared to a high quality reporting benchmark, such as  $CCR_{COUNTRY}$ . The results are presented in table 4, column 2.

The intra-class correlation based on the estimates of the covariance parameters is for the full model 0.155 ( $0.0015/(0.0015+0.082)$ ) and is insignificant. This result suggests that auditor conservatism is *not nestled* in client conservatism and thus that  $ACR_{OFFICE}$  captures unique information beyond client conservatism. This result supports the assumption that an auditor selection bias is not likely to impact the results in table 3.

### ***3.4 Homogeneity of audit quality at the partner level***

In this section the *within audit firm* difference and the level of audit quality is measured at the partner level. For this test, ACR is computed for each partner satisfying the threshold of at least six observations concerning at least three companies. The aggregated results are presented in table 5. Similar to the office-level analysis of previous section, the audit partner-level analysis is performed twice: with *within audit firm* observations ( $ACR_{FIRM}$ ) and with *countrywide* observations ( $ACR_{COUNTRY}$ ). Results are reported in table 5.

[insert table 5]

The number of observations per audit partner is a smaller than for the office-level analysis, which may increase the probability of a false negative and indicate a biased audit partner erroneously as high quality audit partner. Nevertheless, for 71% (29 of 41) of the audit partners<sup>26</sup>, the classification of  $ACR_{PARTNER}$  relative to the *within audit firm* benchmark ( $ACR_{FIRM}$ ) respectively the audit quality benchmark ( $ACR_{COUNTRY}$ ) is identical, which suggests a quite robust  $ACR_{PARTNER}$

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<sup>26</sup> Only in the case of audit partner #25 (DEL), the classification is quite different (results are not tabulated). For this audit partner, the *within audit firm* difference classification is 'conservative', but the audit quality classification is 'liberal'. In all other cases, the classification difference between  $ACR_{FIRM}$  and  $ACR_{COUNTRY}$  is only one category.

determination process. Note that only sufficient partner-level data is available from Swiss, French and Finnish financial statements.

The results in table 5 suggest that significant differences in financial reporting preferences exist *within* audit firms: 51% of the audit partners have audit biases, of which 52% (11 of 21) is biased towards liberalism and 48% (10 of 21) towards conservatism. The *within firm* audit quality differences are observed in almost all audit firms, NonBig5: 75% (3 of 4), DEL: 50% (3 of 6), EY: 69% (11 of 16) and PWC: 36% (4 of 11), except for KPMG (0 of 4). These *within audit firm* audit quality differences are observed consistently in all included countries (results not tabulated). These results are similar to the  $ACR_{OFFICE}$  analysis and challenge the frequently assumed homogeneity of audit quality delivered by (large) audit firms.

Significant different financial reporting preferences are also observed between audit partners and the high quality benchmark  $ACR_{COUNTRY}$ . In total 50% of the included audit partners have reporting biases of which 66% (20 of 30) towards liberalism and 34% (10 of 30) towards conservatism (table 5). The significant differences between partners occur in almost all audit firms: NonBig5: 37% (3 of 8), DEL: 89% (8 of 9), EY: 47% (9 of 19), KPMG: 30% (3 of 10), and PWC: 54% (7 of 13)<sup>27</sup>.

### ***Robustness tests***

A multi-level regression procedure is conducted to examine whether the partner effect is influenced by the audit firm, the client's financial reporting preferences (Category CCR) and the local office. First, the audit firm is used as higher-level variable. The results are shown in table 4, column 3. The intra-class correlation of 0.010 ( $0.0001/(0.0001+0.0099)$ ) is based on the covariance parameters estimates, and is insignificant<sup>28</sup>. The insignificance of the audit firm

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<sup>27</sup> However, note that some caution is needed when interpreting these results at the audit firm level. For example, DEL's high bias rate is due to three audit partners from one liberal office: Neuilly sur Seine (untabulated results). In other words, the liberal financial reporting preference of this local office is possibly "overrepresented" at the audit firm level.

<sup>28</sup> The client conservatism ratio ( $CCR_i$ ) variable (0.339,  $p < 0.01$ ) is positively and significantly associated with  $ACR_{PARTNER}$ . In a (untabulated) OLS regression including similar variables, CCR explains about 15% of  $ACR_{PARTNER}$ . These results suggest that the client's financial reporting preferences ( $CCR_i$ ) are an important determinant in the final audit quality delivered.

variable suggests that systematic inter-audit firm differences in audit quality governance do not exist, and that the large audit firms do not differentiate systematically in affecting audit quality delivered by local audit partners.

To test whether ACR is sensitive to auditor selection bias, a second analysis with multi-level regression is conducted, with client conservatism (Category CCR) as higher-level variable. The results are provided in table 4, column 4. The intra-class correlation based on the covariance parameters estimates is for the model 0.205 ( $0.0025/(0.0025+0.0097)$ ) and is not significant. This is consistent with the  $ACR_{OFFICE}$  analysis (table 4, column 2). This result suggests that the audit partner's audit quality does not differ systematically in the categories of client conservatism, and supports the assumption that the results in table 5 are not under influence of an auditor selection bias.

Finally, the effect is examined of the local office (i.e. audit teams) on the quality of the audit partner. The intra-class correlation based on the covariance parameters estimates is for the full model (table 4, column 5) 0.293 ( $0.0034/(0.0034+0.0082)$ ) and is significant ( $p<0.05$ ). Audit teams do affect audit quality and the  $R^2$  increases by about 41% ( $0.0034/0.0082$ ) when the office-level is included. Thus, to a certain extent, knowledge and expertise is transferred from the audit partner to the local audit teams and vice versa. However, the audit partner effect extends beyond the local office effect, because the intra-class correlation is sufficiently low (0.293). In regression, the client conservatism ratio (CCR) is positive and significantly associated (0.254,  $p<0.01$ ) with  $ACR_{PARTNER}$ , which is expected.

### ***3.5 Audit quality differences between partners at the same local office***

In this section I examine differences in audit quality amongst audit partners *within local offices*. For this purpose,  $ACR_{PARTNER}$  is solely based on observations of the concerning local office. Based on the matched pair analysis procedure as described in previous sections,  $ACR_{PARTNER}$  and  $ACR_{OFFICE}$  are determined. The results are reported in table 6.

[Insert table 6]

In total 20 audit partners of eight offices in Switzerland and France have client portfolios respecting the threshold criteria of at least six observations, regarding at least three auditees. The results in table 6 show that within a local office, different financial reporting preferences of partners occur: 30% of the included audit partners (6/20) have financial reporting preferences that deviate from the local office's average ( $ACR_{OFFICE}$ ): deviation toward liberalism (66%) respectively toward conservatism (34%). Audit partners seem thus to affect significantly the final 'true and fair view' of the signed financial statements on top of the local audit teams' reporting preferences. These results of *within local office* differences suggest that (i) non-standardized<sup>29</sup> audit decisions made by the audit partner are important to the overall audit quality and (ii) the audit partner's personal financial reporting preferences which are actually mapped in the signed financial statements, differ significantly amongst audit partners. The assumption of audit quality homogeneity *within* local offices is challenged: significant differences in audit quality are observed amongst audit partners within local offices.

#### **4. Conclusions**

This paper examines the audit partner effect. First, evidence is provided on differences in audit quality amongst audit partners and amongst local offices within (large) audit firms. Second, it is observed that *within* a local office, significant differences in the level of audit quality amongst audit partners exist. These results support the concept of the audit partner effect. In addition, the results suggest that the audit partner's level of audit quality is *nestled* within the local office. This indicates that the local office (the audit teams) affect the level of audit quality of the audit partner and, to a certain extent, knowledge is shared within the local office. No random audit firm effects are observed, suggesting that (large) audit firms do not differentiate themselves in the extent they affect the level of audit quality delivered by audit partners. An auditor selection bias is not

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<sup>29</sup> Under the assumption that the more standardized audit procedures are performed properly by the audit teams and that the quality of execution of these tasks is reasonably equal over all offices.

detected as no evidence is found for audit quality nestling within client conservatism, which suggests that is not likely that the results are affected by an auditor selection bias.

The observed differences between audit partners lead to various research questions such as what are the determinants of high quality audit partners and can the auditor's business case be qualified and/or quantified? Additionally, it would be interesting to examine the ACR dynamics in a longitudinal study.

There are various limitations and caveats to my paper. First of all, the paper focuses only on the audit quality level that is actually delivered and ignores the perceived audit quality aspect. Both aspects are important to the audit profession and are, to some extent, expected to be interdependent. The second limitation is the unobserved extent to which the client depends on the audit partner. The level of audit partner dependency is assumingly distributed at random amongst the audit partner client groups. It may, however, be that certain audit partners are much better at acquiring clients who have a higher audit partner dependency, and therefore the assumption of random distribution cannot be maintained. The audit partner dependency may be an interesting topic for future research, as understanding the client-auditor relationship is a key issue in auditing research.

The third limitation is the fact that disclosure effects in the financial statement are not taken into consideration. In this paper only the predictability of accounting data is used as an audit quality benchmark. It might be that biased audit partners let their clients disclose value relevant information, instead of requiring adjustments to the accounting data.

Finally, a limiting aspect of this study is that the true high audit quality benchmark is not known. The high quality benchmark used is 'the average' distribution of profits and losses of a certain client group, which is expected to reflect the audit profession's best practice. Moreover, the use of the distribution of profits and losses is a rather rigid method, as the 'subtle grey area' of what should (not) have been a profit is not observable and therefore a potential caveat. On the other hand, a company's management will try hard to turn a small loss into a small profit

(Burgstahler and Dichev, 1997). In other words, when losses are reported, there were no other (acceptable) accounting solutions available to avoid doing so. In addition, the applied method of determining audit quality is quite conservative, because only audit partners with an ACR who differ significantly from the high quality benchmark are considered to be biased. Therefore,  $ACR_{PARTNER}$  ( $ACR_{OFFICE}$ ) and the audit quality benchmark groups ( $ACR_{FIRM}$  and  $ACR_{COUNTRY}$ ) may contain some degree of 'noise' due to the limited number of observations per audit partner (or local office), which increases the risk of false negatives (i.e. not recognizing a biased audit partner). These false negatives are then erroneously classified as high quality audit partners.

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**Table 1 Relation between auditor conservatism, value of inventories and earnings**

year	Yearly change of inventories <sup>a</sup>	Earnings			Inventories			ROS		
		Conser- vative Audit partner client group <sup>b</sup>	High Quality Audit partner client group <sup>b</sup>	Liberal Audit partner client group <sup>b</sup>	Conser- vative Audit partner client group <sup>b</sup>	High Quality Audit partner client group <sup>b</sup>	Liberal Audit partner client group <sup>b</sup>	Conser- vative Audit partner client group <sup>b</sup>	High Quality Audit partner client group <sup>b</sup>	Liberal Audit partner client group <sup>b</sup>
0					100	100	100			
1	5.0%	904	975	1046	504	575	646	9.04%	9.75%	10.46%
2	7.0%	1065	1165	1265	1069	1240	1411	10.65%	11.65%	12.65%
3	2.0%	662	690	719	1231	1430	1630	6.62%	6.90%	7.19%
4	-7.0%	-65	-165	-265	665	765	865	-0.65%	-1.65%	-2.65%
5	-4.5%	137	73	8	302	338	373	1.37%	0.73%	0.08%
6	2.0%	662	690	719	463	528	592	6.62%	6.90%	7.19%
7	-5.0%	96	25	-46	60	52	45	0.96%	0.25%	-0.46%
8	2.5%	702	738	773	262	290	319	7.02%	7.38%	7.73%
9	4.5%	863	928	992	625	718	810	8.63%	9.28%	9.92%
10	-5.5%	56	-23	-101	181	195	209	0.56%	-0.23%	-1.01%
Total accounting profit		5081	5095	5109				5.08%	5.10%	5.11%
Accounting value added		+14	0	-14						
Total economic profit		5095	5095	5095						
$ACR_{PARTNER}^c$ (# profits/# observ)		<b>0.9</b> (9/10)	<b>0.8</b> (8/10)	<b>0.7</b> (7/10)						

<sup>a</sup> The yearly change of inventories (equals change of turnover) is chosen randomly. The cumulative growth of inventories over the ten-year period is 1%.

<sup>b</sup> The only difference between the audit partner client groups is the difference in the cost price of inventories. The high quality audit partner client group applies cost prices which are as close to true economic value as possible, and are set as quality benchmark (100%). The cost prices of the conservative and liberal audit partner client groups are set on 85% respectively 115% of the high quality audit partner client group's cost price.

<sup>c</sup>  $ACR_{PARTNER}$  is the number of profits deflated by the total observations of partner *a* in the sample and is computed if it contains at least six observations regarding at least three companies.

**Table 4 Yearly observations in office-level sample**

	Sample observations per audit firm size									Total	Sample observations per country <sup>c</sup>					Total	Total %	Overall % <sup>d</sup>
	NonBig5 audit firms			Big5audit firms <sup>b</sup>						(a)+(b)	CH	FI	FR	UK	NL			
	Local	Int.. <sup>a</sup>	Total (a)	AA	DEL	EY	KPMG	PWC	Total (b)									
<b>PANEL A: year</b>																		
1997	0	0	0	0	0	0	1	1	2	2	2	0	0	0	0	2	0%	n.a.
1998	8	5	13	22	31	42	56	61	212	225	33	11	51	82	48	225	6%	9%
1999	23	9	32	43	52	80	84	106	365	397	46	8	117	179	47	397	10%	12%
2000	25	6	31	60	70	106	118	151	505	536	55	13	149	258	61	536	13%	13%
2001	27	8	35	51	79	117	129	170	546	581	62	16	163	279	61	581	14%	14%
2002	39	12	51	14	115	131	133	183	576	627	63	18	174	308	64	627	15%	14%
2003	38	13	51	-	129	148	134	192	603	654	61	21	180	321	71	654	16%	14%
2004	38	14	52	-	138	131	147	202	618	670	58	24	183	335	70	670	16%	15%
2005	10	6	16	-	79	70	100	126	375	391	32	25	53	220	61	391	10%	9%
<b>Total</b>	<b>208</b>	<b>73</b>	<b>281</b>	<b>190</b>	<b>693</b>	<b>825</b>	<b>902</b>	<b>1,192</b>	<b>3,802</b>	<b>4,083</b>	<b>412</b>	<b>136</b>	<b>1,070</b>	<b>1,982</b>	<b>483</b>	<b>4,083</b>	<b>100%</b>	<b>100%</b>
<b>PANEL B: industry</b>																		
Mining and Construction	1	6	7	7	41	5	88	85	226	233	0	0	12	188	33	233	6%	4%
Food	0	0	0	7	10	22	30	57	126	126	0	0	0	83	43	126	3%	3%
Textiles and Printing	6	0	6	4	43	51	50	64	212	218	0	13	12	148	45	218	5%	6%
Chemicals	0	1	1	2	5	21	20	35	83	84	0	0	14	68	2	84	2%	2%
Pharmaceuticals	6	0	6	2	5	29	36	24	96	102	0	0	32	62	8	102	2%	2%
Extractive Industries	1	0	1	5	13	19	1	21	59	60	0	0	0	60	0	60	1%	1%
Durable Manufactures	22	5	27	48	177	91	195	225	736	763	0	97	92	450	124	763	19%	16%
Computers	25	5	30	19	65	83	78	74	319	349	4	18	79	167	81	349	9%	10%
Utilities Services	0	0	0	0	3	6	16	2	27	27	0	0	0	27	0	27	1%	2%
Transportations	2	0	2	9	21	46	31	40	147	149	0	4	14	111	20	149	4%	4%
Retail	6	0	6	23	97	37	83	121	361	367	0	0	14	256	97	367	9%	10%
Real Estate	7	1	8	1	39	42	22	38	142	150	0	0	37	113	0	150	4%	4%
Service	132	52	184	63	173	372	249	405	1262	1446	408	4	757	247	30	1,446	35%	32%
Others	0	3	3	0	1	1	3	1	6	9	0	0	7	2	0	9	0%	2%
<b>Total</b>	<b>208</b>	<b>73</b>	<b>281</b>	<b>190</b>	<b>693</b>	<b>825</b>	<b>902</b>	<b>1,192</b>	<b>3,802</b>	<b>4,083</b>	<b>412</b>	<b>136</b>	<b>1,070</b>	<b>1,982</b>	<b>483</b>	<b>4,083</b>	<b>100%</b>	<b>100%</b>
<i>% total</i>	5%	2%	7%	5%	17%	20%	22%	29%	93%	100%	10%	3%	26%	49%	12%	100%		

<sup>a</sup> Int.= includes international operating medium sized audit firms: BDO, Grant Thornton, Mazars and RSM;

<sup>b</sup> AA=Arthur Andersen; DEL=Deloitte; EY= Ernst&Young; PWC=PricewaterhouseCoopers;

<sup>c</sup> CH=Switzerland; FI=Finland; FR=France; UK=United Kingdom; NL=The Netherlands

<sup>d</sup> this overall percentage is based on Amadeus datasets of 2000-2005, and manually collected data from financial statements available at Company.info-database. The percentage includes all company-year observations (n=13,436), and including double observations of companies because of joint audits (n=1,175 of double firm year observations).

**Table 3 Differences in audit quality at the office level *within* audit firms and *within* countries, period 1997-2005<sup>a</sup>**

	AA		DEL		EY		KPMG		PWC		Total	
	<i>Within audit firm</i>	<i>Country</i>	<i>Within audit firm</i>	<i>Country</i>	<i>Within audit firm</i>	<i>Country</i>	<i>Within audit firm</i>	<i>Country</i>	<i>Within Audit firm</i>	<i>Country</i>	<i>Audit Quality differences within audit firms<sup>b</sup></i>	<i>Audit Quality bench-mark per Country<sup>c</sup></i>
Offices with significant audit bias towards liberalism	- (0%)	- (0%)	1(13%)	3 (27%)	5 (38%)	7 (50%)	5 (36%)	2 (11%)	4 (20%)	7 (30%)	15 (25%)	19 (26%)
Offices with significant audit bias towards conservatism	1 (25%)	2 (29%)	2 (25%)	2 (18%)	4 (31%)	2 (14%)	2 (14%)	8 (42%)	5 (25%)	6 (26%)	14 (24%)	20 (27%)
Offices <i>with</i> auditing bias <sup>b</sup>	1 (25%)	2 (29%)	3 (38%)	5 (45%)	9 (69%)	9 (64%)	7 (50%)	10 (53%)	9 (45%)	13 (56%)	29(49%)	39 (53%)
Offices <i>without</i> auditing bias	3 (75%)	5 (71%)	5 (62%)	6 (55%)	4 (31%)	5 (36%)	7 (50%)	9 (47%)	11 (55%)	10 (44%)	30 (51%)	35 (47%)
<b>(a) Total local offices</b>	<b>4</b>	<b>7</b>	<b>8</b>	<b>11</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>19</b>	<b>20</b>	<b>23</b>	<b>59</b>	<b>74</b>
	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>
<b>(b) Total # company-year observations</b>	42	141	186	616	333	678	276	768	505	1,027	1,342	3,230
<b>(c) Total # companies included in ACR<sub>OFFICE</sub></b>	23	53	77	168	114	179	104	190	145	235	463	825
<b>(d) Total # companies in ACR<sub>BENCHMARK</sub> based on the audit firm client group respectively the country company group</b>	26	103	116	380	133	394	143	474	235	544	653	1,895
<b>(b)/(a) #observations/# local offices</b>	10.50	20.14	23.25	56.00	25.62	48.43	19.71	40.42	25.25	44.65	22.75	43.65
<b>(c)/(a) #companies in ACR<sub>OFFICE</sub> /# local offices</b>	5.75	7.57	9.63	15.27	8.77	12.79	7.42	10.00	7.25	10.22	7.85	11.15
<b>(d)/(a) #companies in ACR<sub>BENCHMARK</sub> /# local offices</b>	6.50	14.71	14.50	34.55	10.23	28.14	10.21	24.95	11.75	23.65	11.07	25.61

<sup>a</sup> for each local office a unique ACR<sub>FIRM</sub> and a unique ACR<sub>COUNTRY</sub> is created based on an at random selection of observations from respectively the audit firm's portfolio of clients, and the pool of country-wide observations. Five criteria are applied to create ACR<sub>FIRM</sub> and ACR<sub>COUNTRY</sub>:

(i) *country*: United Kingdom, Finland, France, Switzerland and the Netherlands; (ii) *year*: 1998-2005;

(iii) *Industry* which includes 15 industries, based on 2-digit SIC-code and the applied classification is similar to Easton and Pae (2004), but excludes financial services (code #6500-6999). 2=Mining and construction #1000-1099, #1200-1499, #4500-4599; 3=Food #1500-1699; 4=Textiles and printing #1700-2299; 5=Chemicals #2300-2499, except #2440-2449; 6=Pharmaceuticals #2440-2449; 7=Extractive industries #1100-1199; 8=Durable manufacturers #2500-3799, except #3000-3099; 9 Computers #3000-3099, #7200-7299; 10=Utilities services #4000-4199; 11=Transportation #6000-6499; 12=Retail #5000-5499; 13=Real estate #7000-7099; 14=Services #7100-8999, #5500-5999, except #7200-7299 and 15=Others #9000-9999; (iv) *EQ/TA* is equity deflated by total assets and is categorized into 3 classes: low <0.33; medium-sized 0.33-0.66 and high >0.67; and (v) *Revenues*: which are total revenues and are categorized into three classes: small < 70mio; medium sized 70mio-1billion and large> 1billion.

<sup>b</sup> A *within audit firm* difference of audit quality is assumed if ACR<sub>OFFICE</sub> is significantly different from ACR<sub>FIRM</sub>.

<sup>c</sup> An audit bias is assumed if ACR<sub>OFFICE</sub> is significantly different from ACR<sub>COUNTRY</sub>. A local office is considered *liberal* if ACR<sub>OFFICE</sub> < ACR<sub>COUNTRY</sub>, and is considered *conservative* if ACR<sub>OFFICE</sub> > ACR<sub>COUNTRY</sub>.

ACR<sub>OFFICE</sub> is the number of profits deflated by the total observations of office *o* in the sample, and is computed if it contains at least six observations regarding a minimum of three companies.

**Table 4 Multi-level cross-sectional regression of  $ACR_{PARTNER}$  on: client's accounting conservatism, financial leverage, profitability, high accruals, size, growth, and industry-, country- and year effects, period 2000-2005:**

Level 1:	$ACR = \beta_0 + \beta_1 CCR_{jkt} + \beta_2 \text{Category EQ/TA}_{jkt} + \beta_3 ROS_{jkt} + \beta_4 NOAS_{jkt} + \beta_5 \text{Category Revenues}_{jk} + \beta_6 \text{Change Revenues}_{jk} + \beta_7 \text{industry} + \beta_8 \text{Country}_{jk} + \beta_9 \text{Year}_{jk} + \varepsilon_{jkt}$
Level 2:	$\beta_0 = \gamma_{00} + u_{0kt}$
Combined:	$ACR = \gamma_{00} + \beta_1 CCR_{jkt} + \beta_2 \text{Category EQ/TA}_{jkt} + \beta_3 ROS_{jkt} + \beta_4 NOAS_{jkt} + \beta_5 \text{Category Revenues}_{jk} + \beta_6 \text{Change Revenues}_{jk} + \beta_7 \text{industry} + \beta_8 \text{Country}_{jk} + \beta_9 \text{Year}_{jk} + u_{0kt} + \varepsilon_{jkt}$

Maximum likelihood estimates, mixed models procedure SPSS

Level 2 =	$ACR_{OFFICE}$		$ACR_{PARTNER}$		
	Audit firm (1)	Category CCR (2)	Audit firm (3)	Category CCR (4)	Local office (5)
<i>Estimates of fixed effects:</i> (t-statistic between parentheses)					
Intercept	0.760*** (27.389)	0.767*** (17.751)	0.426*** (7.562)	0.631*** (11.754)	0.533*** (8.651)
Client's accounting conservatism (CCR)(+)	0.149*** (13.198)		0.339*** (10.278)		0.254*** (7.439)
Financial leverage (Category EQ/TA) (?)	-0.002 (-0.695)	0.006 (1.555)	0.007 (0.759)	0.023** (2.089)	0.000 (0.042)
Profitability (ROS) (?)	-0.046** (-2.111)	0.031 (1.327)	0.312*** (4.115)	0.356*** (4.419)	0.263*** (3.373)
High accruals (NOAS) (?)	0.001 (0.859)	0.000 (0.225)	-0.015 (-0.876)	-0.017 (-0.954)	-0.004 (-0.226)
Size (Category Revenues) (?)	0.003 (0.840)	0.019*** (4.648)	0.045*** (3.807)	0.051*** (3.882)	0.054*** (4.236)
Growth (Change revenues) (?)	0.006 (0.841)	0.003 (0.390)	0.062** (2.039)	0.096** (3.086)	0.079** (2.259)
Industry effects	(?) yes	Yes	yes	yes	yes
Country effects	(?) yes	Yes	not included	not included	not included
Year effects	(?) no	yes	no	no	no
<i>Estimates of covariance estimators:</i> (Wald Z-statistic between parentheses)					
(a) Residual	0.0071*** (30.908)	0.0082*** (28.853)	0.0099*** (13.396)	0.0097*** (12.487)	0.0082*** (11.917)
(b) Intercept (subject level 2 variance)	0.0012 (1.730)	0.0015 (1.189)	0.0001 (0.503)	0.0025 (1.140)	0.0034** (2.038)
<b>Intra-class correlation coeff.: <math>b/(a+b)</math></b>	<b>0.145</b>	<b>0.155</b>	<b>0.010</b>	<b>0.205</b>	<b>0.293</b>
Akaike's Information Criterion (AIC) <sup>a</sup>	-3947.89***	-3204.61***	-586.67***	-520.26***	-511.65***
-2 Log Likelihood	-4007.89***	-3262.61***	-590.67***	-556.26***	-511.65***
Year – company observations	1,918	1,668	387	315	387

\*\*\* = significant at p<0.05 respectively p<0.01, n.s. = not significant. All two-tailed tests, where is company j, level 2 unit k and year t;

<sup>a</sup>The AIC statistics are displayed in smaller-is-better form;

Category  $CCR_j$  represents the client's accounting conservatism. The company is classified as '1' (liberal) or '3' (conservative) if  $CCR_j$  is significantly lower respectively higher than  $CCR_{COUNTRY}$ , else coded '2' (high quality).  $CCR_j$  is the number of profits deflated by the total number of observations of company j in the sample, respecting a minimum of four observations. The high quality benchmark  $CCR_{COUNTRY}$  is determined based on country, year, 15 industries, three categories of EQ and three categories of total revenues;

Category  $EQ/TA$  is equity deflated by total assets and is categorized into 3 classes: low <0.33; medium-sized 0.33-0.66 and high >0.67;

ROS (return on sales) is earnings deflated by total sales;

NOAS is operational assets deflated by total sales; NOA is the sum of intangible and tangible fixed assets, inventory, debtors and other accounts receivable and transitory assets minus provisions, accounts payable and other transitory liabilities. Financial assets and liabilities are not included in NOA.

Category Revenues are total revenues and are categorized into three classes: small < 70mio; medium sized 70mio-1billion and large > 1billion;

Change revenues represents the yearly growth and concerns the yearly change of revenue;

Industry includes 15 industries. See below table 5 for more details; Country variable: 1=Switzerland, 2=Finland, 3=France, 4=United Kingdom and 5=The Netherlands; Year concerns year dummies.

**Table 5 Differences in audit quality at the partner level *within* audit firms and *within* countries, period 1997-2005<sup>a</sup>**

<i>Partners are biased towards:</i> <sup>a</sup>	<i>Non Big5</i>		<i>DEL</i>		<i>EY</i>		<i>KPMG</i>		<i>PWC</i>		<i>Total</i>	
	<i>Within audit firm<sup>b</sup></i>	<i>Country<sup>c</sup></i>	<i>Within audit firm<sup>b</sup></i>	<i>Country<sup>c</sup></i>	<i>Within audit firm<sup>b</sup></i>	<i>Country<sup>c</sup></i>	<i>Within Audit firm<sup>b</sup></i>	<i>Country<sup>c</sup></i>	<i>Within audit firm<sup>b</sup></i>	<i>Country<sup>c</sup></i>	<i>Audit Quality differences within audit firms<sup>b</sup></i>	<i>Audit Quality benchmark per Country<sup>c</sup></i>
Partners with significant audit bias towards liberalism	2 (50%)	1 (12%)	1 (14%)	7 (77%)	7 (44%)	7 (37%)	- (0%)	1 (10%)	1 (9%)	4 (31%)	11 (27%)	20 (33%)
Partners with significant audit bias towards conservatism	1 (25%)	2 (25%)	2 (28%)	1 (11%)	4 (25%)	2 (10%)	- (0%)	2 (20%)	3(27%)	3 (15%)	10 (24%)	10 (17%)
Partners <i>with</i> auditing bias	3 (75%)	3 (37%)	3 (50%)	8 (89%)	11 (69%)	9 (47%)	0 (0%)	3 (30%)	4 (36%)	7 (54%)	21 (51%)	30 (50%)
Partners <i>without</i> auditing bias	1 (25%)	5 (63%)	3 (50%)	1 (11%)	5 (31%)	10 (53%)	4 (100%)	7 (70%)	7 (64%)	6 (46%)	20 (49%)	30 (50%)
<b>(a) Total local partners</b>	<b>4</b>	<b>8</b>	<b>6</b>	<b>9</b>	<b>16</b>	<b>19</b>	<b>4</b>	<b>10</b>	<b>11</b>	<b>13</b>	<b>41</b>	<b>60</b>
	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>	<b>(100%)</b>
<i>(b) Total # company-year observations</i>	41	104	98	163	184	241	50	138	107	133	480	779
<i>(c) Total # companies included in ACR<sub>PARTNER</sub></i>	13	29	29	53	55	72	15	39	39	46	151	239
<i>(d) Total # companies in ACR<sub>BENCHMARK</sub> based on the audit firm client group respectively the country company group</i>	20	70	55	121	120	179	30	103	74	103	299	576
<i>(b)/(a) #observations/# offices</i>	10.25	13.00	14.00	18.11	11.50	12.68	12.50	13.80	9.73	10.23	11.71	12.98
<i>(c)/(a) #companies in ACR<sub>PARTNER</sub> /# partners</i>	3.25	3.63	4.14	5.88	3.44	3.79	3.75	3.90	3.55	3.54	3.68	3.98
<i>(d)/(a) #companies in ACR<sub>BENCHMARK</sub> /# partners</i>	5.00	8.75	7.86	13.44	7.50	9.42	7.50	10.30	6.73	7.92	7.29	9.60

<sup>a</sup> for each local audit partner, a unique ACR<sub>FIRM</sub> and a unique ACR<sub>COUNTRY</sub> is created based on an at random selection of observations from respectively the audit firm's portfolio of clients, and the pool of country-wide observations. Five criteria are applied to create ACR<sub>FIRM</sub> and ACR<sub>COUNTRY</sub>:

(i) *Country*: Finland, France and Switzerland;

(ii) *Year*: 1998-2005;

(iii) *Industry* which includes 15 industries, based on 2-digit SIC-code and the applied classification is similar to Easton and Pae (2004), but excludes financial services (code #6500-6999). 2=Mining and construction #1000-1099, #1200-1499, #4500-4599; 3=Food #1500-1699; 4=Textiles and printing #1700-2299; 5=Chemicals #2300-2499, except #2440-2449; 6=Pharmaceuticals #2440-2449; 7=Extractive industries #1100-1199; 8=Durable manufacturers #2500-3799, except #3000-3099; 9 Computers #3000-3099, #7200-7299; 10=Utilities services #4000-4199; 11=Transportation #6000-6499; 12=Retail #5000-5499; 13=Real estate #7000-7099; 14=Services #7100-8999, #5500-5999, except #7200-7299 and 15=Others #9000-9999;

(iv) *EQ/TA* is equity deflated by total assets, and is categorized into 3 classes: low <0.33; medium-sized 0.33-0.66 and high >0.67 ; and

(v) *Revenues* are total revenues and are categorized into three classes: small < 70mio; medium sized 70mio-1billion and large> 1billion.

<sup>b</sup> A *within* audit firm difference of audit quality is assumed if ACR<sub>PARTNER</sub> is significantly different from ACR<sub>FIRM</sub> ;

<sup>c</sup> An audit bias is assumed if ACR<sub>PARTNER</sub> is significantly different from ACR<sub>COUNTRY</sub>. A local partner is considered *liberal* if ACR<sub>PARTNER</sub>< ACR<sub>COUNTRY</sub> , and considered *conservative* if ACR<sub>PARTNER</sub>> ACR<sub>COUNTRY</sub> ;

ACR<sub>PARTNER</sub> is the number of profits deflated by the total observations of partner *a* in the sample, and is computed if it contains at least six observations regarding three companies.

**Table 6 Differences in audit quality between partners within a local office, period 1997-2005**

<i>Totals</i>	<i>Audit Quality differences within eight local offices<sup>a,b</sup></i>	
Partners are considered more liberal than the local office	4 (20%)	66%
Partners are considered more conservative than the local office	2 (10%)	34%
Partner's audit quality level differs from the local office	6 (30%)	100%
Partner's audit quality level is similar to the local office	14 (70%)	
<b>(a) Total local partners</b>	<b>20 (100%)</b>	
(b) Total # company-year observations	244	
(c) Total # companies included in $ACR_{PARTNER}$ based on local office client group	69	
(d) Total # companies in $ACR_{OFFICE}$ based on local office client group	116	
(b)/(a) #observations/# offices	12.2	
(c)/(a) #companies in $ACR_{PARTNER}$ /# partners	3.5	
(d)/(a) #companies in $ACR_{OFFICE}$ /# partners	5.8	

<sup>a</sup> for each local audit partner a unique  $ACR_{OFFICE}$  is created based on an at random selection of observations from the portfolio of local office clients. Five criteria are applied to create  $ACR_{OFFICE}$ :

(i) *Country*: France and Switzerland;

(ii) *Year*: 1998-2005;

(iii) *Industry* which includes 15 industries, based on 2-digit SIC-code and the applied classification is similar to Easton and Pae (2004), but excludes financial services (code #6500-6999). 2=Mining and construction #1000-1099, #1200-1499, #4500-4599; 3=Food #1500-1699; 4=Textiles and printing #1700-2299; 5=Chemicals #2300-2499, except #2440-2449; 6=Pharmaceuticals #2440-2449; 7=Extractive industries #1100-1199; 8=Durable manufacturers #2500-3799, except #3000-3099; 9 Computers #3000-3099, #7200-7299; 10=Utilities services #4000-4199; 11=Transportation #6000-6499; 12=Retail #5000-5499; 13=Real estate #7000-7099; 14=Services #7100-8999, #5500-5999, except #7200-7299 and 15=Others #9000-9999;

(iv) *EQ/TA* is equity deflated by total assets, and is categorized into 3 classes: low <0.33; medium-sized 0.33-0.66 and high >0.67 ; and

(v) *Revenues* are total revenues and are categorized into three classes: small < 70mio; medium sized 70mio-1billion and large > 1billion.

<sup>b</sup> A within local office difference of audit quality is assumed if  $ACR_{PARTNER}$  is significantly different from  $ACR_{OFFICE}$  ; and  $ACR_{office}$  ( $ACR_{PARTNER}$  ) is the number of profits deflated by the total observations of office *o* (partner *a*) in the sample, and is computed if it contains at least six observations regarding a minimum of three companies.