# *New evidence on the demand for voluntary audit in small companies in the UK*

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**Abstract**

The purpose of this paper is to extend previous research into the factors that have a significant influence on the demand for voluntary audit in small companies in the UK. The study is a regression analysis of data from a random sample of 790 companies with a turnover up to £4.8m that was collected via a postal questionnaire in 2003.

Despite the finding that 57% of companies supported the government's proposal in 2003 to raise the turnover threshold to the EU level of £4.8m, 42% predicted that they would have a voluntary audit if they were exempt. The study demonstrates that the quantitative criteria used in company law are not sufficient surrogates for the costs versus benefits of an independent audit and suggests a theoretical model that includes additional qualitative factors. Turnover (but not balance sheet total) is influential, but the likelihood of the directors choosing a voluntary audit also increases if certain management and agency factors are present. The management factors relate to the directors' perceptions that the audit provides a check on accounting records and systems, improves the quality of the financial information and has a positive effect on the company's credit rating score. The agency factors are the presence of non-family shareholders, external shareholders and lenders.

These findings add to our knowledge by testing the results of previous research with a new and larger sample of companies and identifying new predictors of the demand for a voluntary audit (the view that the audit has a positive effect on the credit rating score and agency relationships with external shareholders). Since lenders and creditors have the economic power to ensure that their needs are met, it is important that future regulation protects the needs of shareholders requiring the additional assurance of an independent audit.

## 1. Introduction

For many years in the UK, all companies, apart from dormant companies, were required to have an independent audit. This external examination or, and expression of opinion on the statutory accounts demonstrates 'the completeness, accuracy and validity of transactions which, when aggregated, make up the financial statements' (Power, 1997, p. 24). However, in 1994 the Fourth Directive introduced changes that allowed EU member states to exempt small companies from the statutory audit. In the UK, the government set the qualifying thresholds below the EU maxima, but revised them upwards several times until in 2003 they matched the EU ceilings. Throughout the nine-year period, there was considerable controversy over the appropriateness of the thresholds and this question is a key part of the wider 'big GAAP/little GAAP' debate on the need for different sets of generally accepted accounting principles for large and small entities. Until recently, these debates have been dominated by anecdotal evidence from policy-makers and the accountancy profession, and the views of company directors have been largely ignored. This is an important omission as the directors are the main users of the statutory accounts (Page, 1984; Carsberg, Page, Sindall and Waring, 1985; Barker and Noonan, 1996), which are used for a range of internal and external purposes (Collis and Jarvis, 2000 and 2002; Collis 2003a). Their views are vital as they must weigh up the costs and benefits of an independent audit.

The present study contributes to our knowledge of directors' views and the decisions they make regarding the audit. It analyses data from a survey of small companies (Collis, 2003b) that was commissioned by the DTI during consultations over proposals to raise the exemption level to the EU maxima.[1] The paper focuses on the factors that have a significant influence on whether companies will have a voluntary audit and extends the model developed by Collis, Jarvis and Skerratt (2004), which suffered from two limitations. First, sampling frame used was not fully representative of companies with a turnover of less than £0.5m; and second, there have been significant increases in the exemption level since the survey was conducted in 1999, which mean the tranche of companies now classified as small must be extended. In addition to these sample-related factors, a further motivation for the present study is to extend the model by including additional explanatory variables.

Section 2 of this paper reviews the development of differential audit requirements and the literature that provides the theoretical framework for the study. Section 3 describes the methodology, which paves the way for an examination and discussion of the results in Section 4. The final section draws conclusions about the implications of the findings.

## 2. Background to the study

### 2.1 Development of differential audit requirements

Differential financial reporting in terms of size developed in the UK in the early 1980s, when the burgeoning number of smaller entities in the economy led to small companies[2] being offered a regulatory framework with some simplifications and concessions (little

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[1] Therefore, the commissioning of the study supported the government's stance on evidence-based policymaking (Cabinet Office, 1999).
[2] Most of the requirements of company law also apply to limited liability partnerships, a new form of business vehicle permitted since April 2001.

GAAP). In 1994 the EC Fourth Company Law Directive permitted national governments to dispense with the requirement for smaller entities to undergo an audit. In the UK, this led to an amendment of section 249A of the Companies Act 1985 (SI 1994/1935) to exempt a company that had a turnover up to £90,000 (lower than the EU maximum), balance sheet total up to £1.4m and up to 50 employees, unless a full audit was required by shareholders holding at least 10% of share capital. A company with a turnover of between £90,000 and £350,000 had to have an accountant's report. This was dropped in 1997 when the turnover threshold was raised to £350,000 (SI 1997/936) and companies were also required to qualify as 'small' for the purpose of filing abbreviated accounts.[3] Under sections 247 and 247A of the Companies Act 1985, apart from certain companies that are excluded for reasons of public interest, a company qualifies as 'small' if it meets any two of three basic size tests shown in Table 1. Apart from a newly incorporated company, the conditions must have been satisfied in two of the last three years (similar conditions apply to small groups).

In 2000 the turnover threshold was increased to £1m (SI 2000/1430) with proposals to raise levels for all financial reporting purposes to the substantially higher EU maxima (DTI, 2000). At the time of the study in March 2003 these were: turnover £4.8m; balance sheet total £2.4m; employees 50. However, in May the EU thresholds were adjusted for indexation purposes to turnover £5.6m and balance sheet total £2.8m and these thresholds were adopted in UK law with effect from January 2004 (SI 2004/16). This process of step change towards European harmonisation is summarised in Table 1.

**Table 1 Audit exemption thresholds in the UK 1994 - 2004**

| Criteria | 1994 | 1997 | 2000 | 2003 proposal | 2004 |
|---|---|---|---|---|---|
| Turnover | £0.09m | £0.35m | £1m | £4.8m | £5.6m |
| Balance sheet total | £1.4m | £1.4m | £1.4m | £2.4m | £2.8m |
| Average employees | 50 | 50 | 50 | 50 | 50 |

*2.2 Size as a surrogate for costs versus benefits*

The government's rationale for audit exemption is that it relieves unnecessary cost burdens that fall disproportionately on small companies (DTI, 1995; DTI, 1999). Implicit in this argument is the notion that below a certain size, the costs outweigh the benefits and vice versa. The profession's views on the most appropriate level for audit exemption are diverse. A survey conducted by the Small Practitioners Association found that '92% of accountants … supported exemption for all private, owner-managed, small limited companies' (Mitchell, 1999, p. 21). The ICAEW was reported as describing the news that the thresholds could be raised to the EU maxima as 'a positive step to ease the burdens on business' (Accountancy, 2003, p. 9), but others in the ICAEW argued that would reduce the quality of the information put on public record (Jones, 2003). The ACCA was against lifting the limits, arguing that it would 'take away the value-added aspect which comes with the audit' (Beckerlegge, 1999, p.21) and raise the risk of fraud (Rose, 2003).

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[3] The options set out in Section 246 of the Companies Act (as revised by SI 1997/220) allow small and medium-sized companies to prepare and file either full or abbreviated financial statements with the Registrar, but they must provide full financial statements for their shareholders. Abbreviated accounts must be accompanied by a special auditors' report, unless the company is exempt from the requirement for an audit by virtue of sections 249A(1) or (2) or 250 of the Companies Act 1985.

The number of companies taking up exemption in the early years has not been published, but statistics for 2002/3 show that 676,300 companies (representing 57% of companies on the register) had filed either full or abbreviated accounts that were audit exempt (DTI, 2003, p. 58). The government anticipates that raising thresholds from the 2000 levels to the 2004 levels would add a further 69,000 companies to the existing 822,000 companies classified as small (Eaglesham, 2003), although the proportion of small companies meeting the conditions for audit exemption is not known.

Until recently, the lack of reliable and up-to-date information on the costs and the benefits of the audit has limited the debate to anecdotal evidence and a number of small studies and opinion polls. Since the regulatory framework for financial reporting by small companies is currently country-specific and highly dynamic, it can be argued that the results of overseas studies and some of the older studies have little relevance. Moreover, many of the UK studies have been based on too small a sample to permit generalisation (for example, Page, 1984; Freedman and Goodwin, 1993; Pratten, 1998; Lin-Seouw, 2001).

A MORI survey of 176 companies (ACCA, 1998) forecast that approximately 40% of companies with a turnover between £350,000 and £1.5m were likely to opt for audit exemption if the threshold were raised to a speculative level of £1.5m. However, in 1999, a survey of the directors of 385 companies with a turnover up to £4.2m[4] (the EU threshold at that time) found that 29% would forgo the audit if they had a choice, whilst 63% would have a voluntary audit (Collis and Jarvis, 2000, Collis, 2003a). This suggests that for the majority of companies of this size, the benefits of having the accounts audited outweigh the costs.

*2.3 Management and agency factors*

Further analysis of the 1999 survey data by Collis *et al.* (2004) provided empirical evidence of several factors that influence the demand for a voluntary audit: 'It was found that turnover alone could represent size, but that size was less important than the directors' perceptions of the value of the audit in terms of improving the quality of information and providing a check on internal records. Agency relationships with owners and lenders were also found to be significant influences on the demand for the audit' (Collis *et al.*, 2004, p. 87). It was also found that the director's educational profile was also influential.

Previous research shows that the main recipients of the statutory accounts of small companies are lenders, the Inland Revenue, managers, creditors and customers (Collis and Jarvis, 2000). This suggests that management may want the accounts audited to provide assurance to these internal and external users. An independent check on internal controls reduces the chance of material error. In small companies inherent risk (the likelihood of a material misstatement arising) and control risk (the likelihood of the accounting control detecting any material misstatement) may be high. Agency theory (Jensen and Meckling, 1976) suggests that the directors will be willing to bear the cost of the audit to support agency relationships with principals where there is information asymmetry. In small companies, a principal is anyone who is distant from the actions of

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[4] The study achieved a 17% response rate from 2,287 companies.

management and is unable to verify them, such as external shareholders, lenders and creditors; information asymmetry may also be present amongst internal shareholders if they lack the necessary skills to interpret financial information (Power, 1997).

*2.4 Purpose of the study*

The present study extends the model developed by Collis *et al.* (2004) by including additional predictors and testing the revised model with a new sample of 790 companies with a turnover up to £4.8m (the EU threshold at the time of the survey in March 2003). The purpose of the study is to address the following research question:

> What are the factors that have a significant influence on the demand for the audit among companies meeting the EU size criteria for a small entity?

This is divided into nine hypotheses, which are presented below in the alternate form. The first is based on size in the Companies Act 1985 as a surrogate for the costs versus benefits of the audit:

> H1 *Ceteris paribus*, the likelihood of the directors choosing a voluntary audit increases with size, as measured by turnover, balance sheet total and/or number of employees.

The next five hypotheses relate to management factors:

> H2 *Ceteris paribus*, the likelihood of the directors choosing a voluntary audit increases with perceptions that the audit provides a check on accounting records and systems.
> H3 *Ceteris paribus*, the likelihood of the directors choosing a voluntary audit increases with perceptions that the audit improves the quality of the financial information.
> H4 *Ceteris paribus*, the likelihood of the directors choosing a voluntary audit increases with perceptions that the audit improves the credibility of the financial information.
> H5 *Ceteris paribus*, the likelihood of the directors choosing a voluntary audit increases with perceptions that the audit has a positive effect on the company's credit rating score.
> H6 *Ceteris paribus*, the likelihood of the directors choosing a voluntary audit increases if they have a degree, a professional/vocational qualification or have studied/trained in business or management subjects.

The last three hypotheses relate to agency factors:

> H7 *Ceteris paribus*, the likelihood of the directors choosing a voluntary audit increases if they are <u>not</u> wholly family owned.
> H8 *Ceteris paribus*, the likelihood of the directors choosing a voluntary audit increases if they have external shareholders without access to internal financial information.

H9 *Ceteris paribus*, the likelihood of the directors choosing a voluntary audit increases if they give a copy of their statutory accounts to the bank and other providers of finance.

These theoretical propositions are tested using logistic regression. The general model is:

Voluntary audit decision = f (size, management factors, agency factors)

## 3. Methodology

*3.1 Sample selection and data collection*

The study was designed as a postal questionnaire survey of the directors of unlisted, private limited companies across all industries and regions in the UK. In March 2003, a list of private limited companies that had filed full accounts for 2002 was drawn from FAME[5] across all industries and regions of Great Britain. As a proxy for qualifying as small under the EU maxima at the time of the study, the sample was selected on the basis of the company meeting all three of the following criteria in the 2002 accounts:

- turnover not exceeding £4.8m;
- balance sheet total not exceeding £2.4m;
- up to 50 employees.

This resulted in a list of 3,202 companies that represented the population of companies of this size filing full accounts last year.[6] Dormant companies, subsidiaries, groups and holding companies were removed in order to retain only active independent companies where financial reporting decisions would not be influenced by group policy. In addition, companies that had not disclosed a director's name were eliminated to improve the response rate.

The questionnaire (see extract in appendix) was developed and piloted by conducting three interviews with auditors with small company clients and five with directors of small companies. The questionnaire was then reviewed by a number of experienced researchers before being posted to a named director, together with an accompanying letter and prepaid envelope in April 2003. In order to increase the response rate, a reminder was sent in May enclosing another copy of the questionnaire and prepaid envelope, as suggested by Kervin (1992). A further group of companies was eliminated at this stage as they had ceased trading, moved away or the owner was absent/unable to participate. This reduced the list to 2,633 companies. By the cut-off date of 28th May 2003, 790 usable replies had been received, giving a response rate of 30%.

*3.2 Response rate*

It has already been mentioned that the exact number of companies that qualify as small is not known, as there is no sampling frame that defines companies according to the Companies Act criteria. However, using the category 0 – 49 employees as a proxy,

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[5] A database that contains up to 10 years' information on British companies registered at Companies House (one month after the accounts are filed), including more than 2.3m private companies of all sizes.
[6] Companies filing abbreviated accounts do not disclose all three figures and, therefore, were not represented in the sample.

government statistics show that the population of small companies totals 873,320 (SBS, 2003, Table 2). The size of the sample (790) is sufficient to represent the population, as it greatly exceeds the minimum acceptable sample size of 384 for a population of this size (Krejcie and Morgan, 1970, p. 608).

Tests for non-response bias found that non-respondents were likely to have been smaller in terms of number of employees. This indicates that the sample contained fewer companies with no employees or very few employees compared with the population. However, in terms of turnover and balance sheet total, the results showed that the sample was representative of the body of companies from which it was drawn.

### 3.3 Respondents

The intention of the study was to capture the views of the directors and in 94% of cases the questionnaire was answered by the principal director, finance director or company secretary. The position and the educational profiles of the respondents suggested they would have both tacit and formal knowledge with which to answer the questions and weigh up the costs and benefits of the audit when making the audit decision.

As in the wider population, the majority of the sample companies were at the smaller end of scale in terms of ownership and size. The vast majority (90%) had between one and four shareholders. In terms of size, 80% had a maximum turnover of £1m in their 2002 accounts, 89% had a maximum balance sheet total of £1.4m, and 78% had between 0 and 10 employees.

### 3.4 Variables in the analysis

Table 2 summarises the variables in the analysis and Table 3 provides descriptive statistics where appropriate.[7] Data relating to the size variables was obtained from the companies' 2002 accounts. All other data was collected via the questionnaire survey in 2003 (non-responses were excluded from the analysis).

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[7] Strictly speaking, the mean cannot be calculated for ordinal data, since the numeric scale represents ranked nominal categories. It is given here as an indication of central tendency. The multivariate statistics were based on ranked data.

## Table 2 Description of variables

| Label | Description | Expected Sign | Hypothesis tested |
|---|---|---|---|
| VOLAUDIT | Whether the company would have a voluntary audit (1 = yes, 0 = no) | Dependent variable | |
| TOVER | Size of company as measured by turnover (£m) | Positive | H1 |
| ASSETS | Size of company as measured by balance sheet total (£m) | Positive | H1 |
| EMPLS | Size of company as measured by number of employees | Positive | H1 |
| CHECK | Extent of agreement that the audit provides a check on accounting records and systems (1 = disagree, 5 = agree) | Positive | H2 |
| QUALITY | Extent of agreement that the audit improves the quality of the financial information (1 = disagree, 5 = agree) | Positive | H3 |
| CREDIBLY | Extent of agreement that the audit improves the credibility of the financial information (1 = disagree, 5 = agree) | Positive | H4 |
| CREDITSC* | Extent of agreement that the audit has a positive effect on the company's credit rating score | Positive | H5 |
| EDUCATN | Whether the respondent has a degree, professional/vocational qualification or has studied or trained in business/ management subjects (1 = yes, 0 = no) | Positive | H6 |
| FAMILY | Whether the company is wholly family-owned (1 = yes, 0 = no) | Negative | H7 |
| EXOWNERS* | Whether the company has shareholders without access to internal financial information (1 = yes, 0 = no) | Positive | H8 |
| BANK | Whether the statutory accounts are given to the bank and other providers of finance (1 = yes, 0 = no) | Positive | H9 |

 * These variables extend the model by Collis *et al*. (2004).

## Table 3 Descriptive statistics

| Label | Data | Coding | N | Min | Max | Mean | SD |
|---|---|---|---|---|---|---|---|
| VOLAUDIT | Nominal | 1, 0 | 772 | 0 | 1 | N/A | N/A |
| TOVER | Ratio | N/A | 790 | .054 | 4738.27 | 691.07 | 1119.45 |
| ASSETS | Ratio | N/A | 790 | .004 | 2391.79 | 386.22 | 584.18 |
| EMPLS | Ratio | N/A | 790 | 1 | 50 | 8.13 | 10.479 |
| CHECK | Ordinal | 1 – 5 | 697 | 1 | 5 | 4.05 | 1.19 |
| QUALITY | Ordinal | 1 – 5 | 687 | 1 | 5 | 3.35 | 1.38 |
| CREDIBLY | Ordinal | 1 – 5 | 688 | 1 | 5 | 3.95 | 1.18 |
| CREDITSC | Ordinal | 1 – 5 | 681 | 1 | 5 | 3.55 | 1.29 |
| EDUCATN | Nominal | 1, 0 | 790 | 0 | 1 | N/A | N/A |
| FAMILY | Nominal | 1, 0 | 785 | 0 | 1 | N/A | N/A |
| EXOWNERS | Nominal | 1, 0 | 722 | 0 | 1 | N/A | N/A |
| BANK | Nominal | 1, 0 | 790 | 0 | 1 | N/A | N/A |

- VOLAUDIT (question 14 in the questionnaire) is the dependent variable.  It consists of two groups: companies that would have a voluntary audit (coded 1) and companies that would not have the accounts audited if exempt (coded 0).
- TOVER measures turnover, ASSETS measures balance sheet total and EMPLS measures the average number of employees disclosed in the 2002 statutory accounts. Data for TOVER and ASSETS were converted from £k to £m to aid the interpretation of the results.  These size variables are used to test H1 and are expected to be positively associated with the demand for the audit.
- CHECK, QUALITY, CREDIBLY and CREDITSC represent management factors and capture whether the directors perceive the audit as providing a check on accounting records and systems, improving the quality or the credibility of the financial

information or having a positive effect on the company's credit rating score (questions 15a, 15c, 15d and 15h respectively).  They are coded on a scale of 1 to 5, where 1 = disagree and 5 = agree with the statement.  CREDITSC is an additional factor that was identified during the preliminary interviews.  These variables are expected to be positively associated with the demand for the audit and are used to test H2 – H5.

- EDUCATN is a proxy for management's knowledge of the costs and benefits of the audit (question 23).  It is a dummy variable that is coded 1 if the respondent has a degree, professional/vocational qualification or has studied or trained in business/management subjects, and 0 if not.  It is expected to be positively associated with the demand for the audit and is used to test H6.

- FAMILY is an agency factor and captures family ownership (question 1).  It is a dummy variable that is coded 1 if the company is wholly family-owned and 0 if not.  It is expected to be negatively associated with the demand for the audit and is used to test H7.

- EXOWNERS is additional agency factor that was identified during the preliminary interviews for the study and captures external ownership (question 3).  It is a dummy variable that is coded 1 if there are shareholders without access to internal financial information and 0 if not.  It is expected to be positively associated with the demand for the audit and is used to test H8.

- BANK is an agency factor and captures whether the statutory accounts are given to the bank and other providers of finance (question 18).  It is a dummy variable that is coded 1 if the company gives the statutory accounts to the bank and lenders and 0 if not.  It is expected to be positively associated with the demand for the audit and is used to test H9.

*3.5 Multicollinearity*

The data was examined for collinearity by examining a correlation matrix of the ordinal and ratio variables.[8]  Although none of the correlation coefficients shown in Table 4 indicate very high correlation ($\geq 0.9$), the high results for the size variables (0.7 - 0.89) give some cause for concern.  This is because high levels of correlation make it hard to identify the predictive power of individual variables and increase the probability that a good predictor of an outcome will be found non-significant (Kervin, 1992).

**Table 4 Correlation matrix of ratio and ordinal independent variables**

|  | *TOVER* | *ASSETS* | *EMPS* | *CHECK* | *QUALITY* | *CREDIBLY* | *CREDITSC* |
|---|---|---|---|---|---|---|---|
| TOVER | 1.000 | | | | | | |
| ASSETS | 0.802** | 1.000 | | | | | |
| EMPS | 0.766** | 0.718** | 1.000 | | | | |
| CHECK | 0.100** | 0.096* | 0.109** | 1.000 | | | |
| QUALITY | 0.105** | 0.072 | 0.079* | 0.626** | 1.000 | | |
| CREDIBLY | 0.165** | 0.171** | 0.157** | 0.621** | 0.661** | 1.000 | |
| CREDITSC | 0.192** | 0.161** | 0.178** | 0.504** | 0.532** | 0.554** | 1.000 |

*Notes:*  N = 671 – 790 (cases excluded pairwise)
See Table 2 for a description of the variables
** Correlation is significant at the 0.01 level (2-tailed)

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[8] EDUCATN, FAMILY, EXOWNERS and BANK are not suitable for this procedure as they are measured on a nominal scale.

## 4. Results and discussion

### 4.1 Univariate and bivariate analysis

In 74% of companies all the shareholders had access to internal financial information, which implies that these companies were owner-managed, and 68% of the sample companies were wholly family-owned. This suggests that there is potential for information asymmetry among shareholders in up to one-third of small companies.

A large proportion of companies (44%) had external funding in addition to share capital and retained profit. The most widely used source of external finance was the bank (used by 69% of companies) and 51% of companies give a copy of their statutory accounts to the bank and other providers of finance. In 27% of companies the bank and other providers of finance had requested the 2002 accounts to be audited and in 30% of companies the shareholders had requested the audit.

Using a maximum turnover of £1m as a proxy for eligibility for audit exemption, analysis of the 2002 accounts of the 633 companies in this category shows that 58% had taken up exemption and the remaining 42% had not. The main reason given for not having the accounts audited was lower accountancy fees, but very few directors were able to provide details of the specific amount saved. The mode for the 43 that reported specific savings was £1,000, which would appear to be valid as it matches the modal audit fee disclosed in the 2002 accounts. These fees charged in the 2002 accounts ranged from £114 to £19,000, but it is likely that these figures are estimates, as it was apparent from the preliminary interviews with auditors that incomplete accounting records are fairly common in small firms and therefore there is considerable overlap in preparing the year-end figures and checking source documents and systems of control, which are part of the audit.

The proposal to raise the audit exemption threshold to £4.8m was supported by 57% of respondents. If they became eligible for exemption, 56% of companies intended to take up exemption and 42% would not (2% did not respond).[9] There are some reservations on basing an analysis on predicted behaviour, but in this case it can be justified, as the directors' forecasts are almost identical to their decisions in the 2002 accounts.

### 4.2 Preliminary tests

Mann-Whitney tests of difference were conducted to establish the independence of the two groups in the dependent variable VOLAUDIT (those that would have a voluntary audit and those that would not) and the independent variables measured on a non-parametric ratio scale (TOVER, ASSETS, EMPLS) or ordinal scale (CHECK, QUALITY, CREDIBLY, CREDITSC). The results in Table 5 provide evidence of a significant difference in each test ($p < 0.01$).

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[9] The vast majority of companies (79%) that were likely to be eligible for the first time predicted they would have a voluntary audit.

**Table 5 Demand for a voluntary audit: Mann-Whitney tests**

| Variable | VOLAUDIT | N | Mean rank | Sum of ranks | Mann-Whitney U | Wilcoxon W | Z | p |
|---|---|---|---|---|---|---|---|---|
| TOVER | 0 No | 438 | 311.29 | 136344.50 | | | | |
| | 1 Yes | 334 | 485.13 | 162033.50 | | | | |
| | Total | 772 | | | 40203.50 | 136344.50 | -10.731 | 0.000 |
| ASSETS | 0 No | 438 | 309.19 | 135426.00 | | | | |
| | 1 Yes | 334 | 487.88 | 162952.00 | | | | |
| | Total | 772 | | | 39285.00 | 135426.00 | -11.030 | 0.000 |
| EMPLS | 0 No | 438 | 314.20 | 137618.00 | | | | |
| | 1 Yes | 334 | 481.32 | 160760.00 | | | | |
| | Total | 772 | | | 41477.00 | 137618.00 | -10.459 | 0.000 |
| CHECK | 0 No | 362 | 285.45 | 103332.00 | | | | |
| | 1 Yes | 320 | 404.91 | 129571.00 | | | | |
| | Total | 682 | | | 37629.00 | 103332.00 | -8.519 | 0.000 |
| QUALITY | 0 No | 356 | 268.62 | 95629.00 | | | | |
| | 1 Yes | 316 | 412.97 | 130499.00 | | | | |
| | Total | 672 | | | 32083.00 | 95629.00 | -9.864 | 0.000 |
| CREDIBLY | 0 No | 358 | 278.17 | 99584.00 | | | | |
| | 1 Yes | 315 | 403.86 | 127217.00 | | | | |
| | Total | 673 | | | 35323.00 | 99584.00 | -8.851 | 0.000 |
| CREDITSC | 0 No | 355 | 273.52 | 97100.00 | | | | |
| | 1 Yes | 312 | 402.81 | 125678.00 | | | | |
| | Total | 667 | | | 33910.00 | 97100.00 | -8.928 | 0.000 |

Chi-square tests were used to measure the association between the two groups in the dependent variable (VOLAUDIT) and each independent variable measured on a dichotomous nominal scale (FAMILY, EXOWNERS, BANK, EDUCATN). Table 6 provides evidence of a significant positive association for FAMILY, EXOWNERS and BANK ($p < 0.01$). However, the result for EDUCATN is not significant ($p > 0.05$), which provides evidence to reject H6.

**Table 6 Chi-square tests on nominal independent variables**

| Variable | Code | VOLAUDIT 0 No | 1 Yes | N | Chi-square | df | p |
|---|---|---|---|---|---|---|---|
| FAMILY | 0 No | 102 | 144 | 246 | | | |
| | 1 Yes | 331 | 190 | 521 | | | |
| | Total | 433 | 334 | 767 | 33.103 | 1 | 0.000 |
| EXOWNERS | 0 No | 351 | 235 | 586 | | | |
| | 1 Yes | 47 | 73 | 120 | | | |
| | Total | 398 | 308 | 706 | 17.406 | 1 | 0.000 |
| BANK | 0 No | 264 | 116 | 380 | | | |
| | 1 Yes | 174 | 218 | 392 | | | |
| | Total | 438 | 334 | 772 | 49.468 | 1 | 0.000 |
| EDUCATN | 0 No | 124 | 105 | 229 | | | |
| | 1 Yes | 314 | 229 | 543 | | | |
| | Total | 438 | 334 | 772 | 0.888 | 1 | 0.346 |

*4.3 Size models*

Replicating Collis, Jarvis and Skerratt (2004), Table 7 examines a series of size models for TOVER, ASSETS and EMPS as audit predictors. It can be seen from Panels A - C that when each variable is regressed separately, the result is significant ($p < 0.01$). However, when all three are entered together (Panel D) EMPS is not significant ($p >$

0.05), which provides evidence to reject H1 in terms of employees.  The results for TOVER and ASSETS are significant ($p < 0.01$).  However, TOVER has a higher Wald statistic, which suggests it is the more powerful predictor, and a lower probability statistic, which gives more confidence that the result is not due to error.  This requires some interpretation, given the high level of correlation between these variables (see Table 4).  Turnover represents the cost burden in the model.  Turnover is a measure of activity and the higher the activity, the more complex the organisation is likely to be and, hence, the higher the auditing fees.  At the same time, the higher the activity, the more likely it is that having the accounts audited will benefit management by providing assurance to creditors and customers.  Thus, the larger the turnover, the lower the relative cost.  To some extent, it can be argued that turnover also captures whether the company is large enough to have external or non-family shareholders and external borrowings.  However, agency relationships (especially those with lenders) are better explained by ASSETS, as the fixed asset element within the balance sheet total represents size of resources as well as collateral against borrowings.[10]

**Table 7**
**Logistic regression model of demand for a voluntary audit: size factors**

| Variable | B | SE | Wald | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| *Panel A* | | | | | | |
| TOVER | 0.834 | 0.097 | 73.909 | 1 | 0.000 | 2.302 |
| Constant | -0.790 | 0.092 | 74.183 | 1 | 0.000 | 0.454 |
| *Panel B* | | | | | | |
| ASSETS | 1.380 | 0.158 | 75.940 | 1 | 0.000 | 3.976 |
| Constant | -0.780 | 0.092 | 71.151 | 1 | 0.000 | 0.459 |
| *Panel C* | | | | | | |
| EMPLS | 0.077 | 0.009 | 66.814 | 1 | 0.000 | 1.080 |
| Constant | -0.863 | 0.100 | 74.415 | 1 | 0.000 | 0.422 |
| *Panel D* | | | | | | |
| TOVER | 0.449 | 0.153 | 8.606 | 1 | 0.003 | 1.566 |
| ASSETS | 0.479 | 0.236 | 4.119 | 1 | 0.042 | 1.615 |
| EMPLS | 0.023 | 0.013 | 2.884 | 1 | 0.089 | 1.023 |
| Constant | -0.902 | 0.102 | 78.716 | 1 | 0.000 | 0.406 |

Notes:  N = 772
Model summaries:
Panel A Chi-square 112.648, df 1, $p < 0.01$, -2 Log likelihood 943.518, Nagelkerke $R^2$ 0.182
Panel B Chi-square 99.348, df 1, $p < 0.01$, -2 Log likelihood 956.818, Nagelkerke $R^2$ 0.162
Panel C Chi-square 91.756, df 1, $p < 0.01$, -2 Log likelihood 964.410, Nagelkerke $R^2$ 0.150
Panel D Chi-square 121.628, df 3, $p < 0.01$, -2 Log likelihood 934.538, Nagelkerke $R^2$ 0.196

*4.4 Sufficiency of size variables as surrogates*

The models shown in Table 8 extend the Collis *et al.* (2004) study by examining the sufficiency of the size variables TOVER and ASSETS as surrogates for the management and agency factors respectively in the demand for voluntary audit.  Panel A shows the result of testing H1 (using TOVER) in conjunction with H7 – H9 (FAMILY, EXOWNERS and BANK).  The results for all variables are significant ($p < 0.05$).

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[10] Although some fixed assets are sector sensitive (for example, construction and manufacturing companies are more likely to have plant and machinery; manufacturing and trading companies are more likely to carry stock), ownership of land and buildings is not industry specific.

Panel B shows the results of replacing TOVER with the variables representing the management factors, thus testing H2 − H6 (CHECK, QUALITY, CREDIBLY, CREDITSC) in conjunction with H7 − H9 (FAMILY, EXOWNERS and BANK). The probability statistic for CREDIBLY is not significant ($p > 0.05$), which provides evidence to reject H4. However, the remaining variables are significant ($p < 0.01$) and the factor coefficient (B) for FAMILY indicates the expected negative relationship with the DV. The notes to the table show that the model in Panel A has a $R^2$ of 23%, compared to 35% for the model in Panel B. This indicates that the inclusion of specific management factors in Panel B improves the goodness of fit of the model and suggests that TOVER is not a sufficient proxy for these factors.

Panel C shows the results of replacing the agency variables in Panel B with ASSETS, thus testing H2 − H6 (CHECK, QUALITY, CREDIBLY, CREDITSC) in conjunction with H1 (using ASSETS). The probability statistic for CREDIBLY is not significant ($p > 0.05$), which again provides evidence to reject H4. However, the remaining variables are significant ($p < 0.01$) and the notes to the table show that this model has a $R^2$ of 34%, compared to 35% for the model in Panel B. This indicates that the inclusion of specific agency factors in Panel B improves the goodness of fit of the model and suggests that ASSETS is not a sufficient proxy for these factors.

**Table 8**
**Logistic regression model of demand for a voluntary audit:**
**Sufficiency of size as a surrogate for management and agency factors**

| Variable | B | SE | Wald | df | p | Exp(B) |
|---|---|---|---|---|---|---|
| *Panel A* | | | | | | |
| TOVER | 0.660 | 0.106 | 38.651 | 1 | 0.000 | 1.936 |
| FAMILY | -0.709 | 0.179 | 15.763 | 1 | 0.000 | 0.492 |
| EXOWNERS | 0.527 | 0.228 | 5.318 | 1 | 0.021 | 1.693 |
| BANK | 0.456 | 0.181 | 6.317 | 1 | 0.012 | 1.577 |
| Constant | -0.523 | 0.181 | 8.401 | 1 | 0.004 | 0.592 |
| *Panel B* | | | | | | |
| CHECK | 0.238 | 0.118 | 4.073 | 1 | 0.044 | 1.269 |
| QUALITY | 0.356 | 0.099 | 12.935 | 1 | 0.000 | 1.428 |
| CREDIBLY | 0.163 | 0.123 | 1.767 | 1 | 0.184 | 1.178 |
| CREDITSC | 0.297 | 0.094 | 10.100 | 1 | 0.001 | 1.346 |
| FAMILY | -0.869 | 0.206 | 17.715 | 1 | 0.000 | 0.420 |
| EXOWNERS | 0.795 | 0.262 | 9.211 | 1 | 0.002 | 2.214 |
| BANK | 0.924 | 0.195 | 22.393 | 1 | 0.000 | 2.519 |
| Constant | -4.128 | 0.535 | 59.490 | 1 | 0.000 | 0.016 |
| *Panel C* | | | | | | |
| CHECK | 0.233 | 0.112 | 4.317 | 1 | 0.038 | 1.262 |
| QUALITY | 0.374 | 0.096 | 15.093 | 1 | 0.000 | 1.453 |
| CREDIBLY | 0.117 | 0.119 | 0.970 | 1 | 0.325 | 1.124 |
| CREDITSC | 0.231 | 0.089 | 6.810 | 1 | 0.009 | 1.260 |
| ASSETS | 1.221 | 0.176 | 47.967 | 1 | 0.000 | 3.389 |
| Constant | -4.138 | 0.459 | 81.149 | 1 | 0.000 | 0.016 |

Notes:  N = 599
Model summaries:
Panel A Chi-square 135.316, df 4, $p < 0.01$, -2 Log likelihood 831.903, Nagelkerke $R^2$ 0.234
Panel B Chi-square 181.600, df 7, $p < 0.01$, -2 Log likelihood 647.185, Nagelkerke $R^2$ 0.349
Panel C Chi-square 189.021, df 5, $p < 0.01$, -2 Log likelihood 711.872, Nagelkerke $R^2$ 0.336

*4.5 Size, management and agency factors*

Table 9 shows the final model, which tests H1 (using TOVER and ASSETS) with H2, H3 and H5 (the remaining management variables CHECK, QUALITY and CREDITSC) and H7 − H9 (the agency variables FAMILY, EXOWNERS and BANK). The results for ASSETS are not significant ($p > 0.05$), which gives grounds to reject H1 in terms of balance sheet total. The results for the remaining variables are significant ($p < 0.05$) and the factor coefficient (B) for FAMILY has the expected negative sign. This provides evidence to accept H1 in terms of turnover, H2, H3, H5 and H7 − H9. The higher values of the Wald statistics and the lower probability statistics for QUALITY and FAMILY compared to the other variables demonstrate that these are the most influential predictors. Examining the goodness of fit, it can be seen from the $R^2$ that this model explains 39% of the demand for the audit, which is an improvement over the models shown in Table 8.

**Table 9**
**Logistic regression model of demand for a voluntary audit:**
**size, management and agency factors**

| Variable | B | SE | Wald | df | p | Exp(B) |
|----------|-------|-------|--------|----|-------|--------|
| TOVER | 0.368 | 0.170 | 4.700 | 1 | 0.030 | 1.444 |
| ASSETS | 0.439 | 0.287 | 2.332 | 1 | 0.127 | 1.551 |
| CHECK | 0.293 | 0.117 | 6.239 | 1 | 0.012 | 1.340 |
| QUALITY | 0.450 | 0.096 | 21.756 | 1 | 0.000 | 1.568 |
| CREDITSC | 0.257 | 0.094 | 7.485 | 1 | 0.006 | 1.293 |
| FAMILY | -0.777 | 0.211 | 13.565 | 1 | 0.000 | 0.460 |
| EXOWNERS | 0.587 | 0.267 | 4.826 | 1 | 0.028 | 1.799 |
| BANK | 0.429 | 0.216 | 3.944 | 1 | 0.047 | 1.536 |
| Constant | -4.045 | 0.516 | 61.491 | 1 | 0.000 | 0.018 |

Notes:   N = 602
Model summary:
Chi-square 209.273, df 8, $p < 0.01$, -2 Log likelihood 623.574, Nagelkerke $R^2$ 0.392

## 5. Conclusions

This study is based on a survey 790 companies in 2003 with a turnover up to £4.8m. It extends the findings of Collis *et al.*, 2004, which was based on data collected in 1999 from 385 companies with a turnover up to £4.2m. It is clear from both studies that company directors in the UK are divided on the costs versus benefits of voluntary audit. In the present study, 57% supported the proposal to raise the turnover threshold to £4.8m, yet 42% predicted that they would have a voluntary audit if they became exempt. The validity of their predictions is strengthened by the fact that the figures match the proportion of currently eligible companies (those with a maximum turnover of £1m) that chose a voluntary audit in 2002. Among those that would be eligible to choose for the first time, it is likely that the vast majority (79%) will have a voluntary audit. This will be reassuring to small practitioners who rely on audit fee income from small company clients. It will also be reassuring to banks, lenders and other creditors who rely on the audited financial statements for assessing and monitoring risk.

This study provides evidence on the adequacy of different size measures as surrogates for the costs versus benefits of external audit, and extends our knowledge of the qualitative factors. The results show that the likelihood of the directors choosing a voluntary audit

increases with turnover (but not balance sheet total).  In addition, three management factors were identified: perceptions that the audit provides a check on accounting records and systems, improves the quality of the financial information and has a positive effect on the company's credit rating score.  Agency relationships with non-family shareholders, external shareholders and lenders were also significant factors.  The most influential predictors are the belief that the audit improves the quality of the financial information and companies that are not wholly family-owned.  Beliefs about the beneficial effect of the audit on the company's credit rating score and its role in providing assurance to external shareholders represent two additional influences on the audit decision not identified in previous research.

A general interpretation of the results is that directors who are willing to bear the cost of the audit do so because of their beliefs about the net benefits to the company and the role the audited accounts play in reducing the cost of capital and supporting agency relationships where there is information asymmetry.  However, the specific findings should be of particular interest to policy-makers.  Since lenders and creditors have the economic power to ensure that their needs are met, it is important that the regulators protect the needs of shareholder requiring the additional assurance of an independent audit.  Harmonisation with EU size thresholds means that the enlarged category of small companies in the UK contains two subgroups with differing needs.  This is demonstrated by the significant proportion of directors whose audit decisions indicate that the benefits outweigh the costs.  Although turnover is a factor, qualitative characteristics are more important and these qualities should be taken into account during the development of little GAAP at national and international levels.

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# Appendix
## Extract of questionnaire showing variables analysed

**1. Is the company a family-owned business?** *(Tick one box only)*

Wholly family-owned (1)

Partly family-owned (2)

None of the shareholders are related (0)

**3. How many shareholders (owners) does the company have?**

(a) Total number of shareholders

   *Breakdown:*

(b) Number of shareholders with access to internal financial information

(c) Number of shareholders <u>without</u> access to internal financial information

**11. If the statutory accounts were not audited last year but were audited previously, have overall accountancy costs decreased?**

No (0)

Yes, by approximately £

**13. Do you think the turnover threshold for exemption from the statutory audit should be increased from £1m to £4.8m?**

*(Tick one box only)*

Yes, increase to £4.8m (1)

No, stay at £1m (0)

Other £m

**14. Would you have the accounts audited even if the company were not legally required to do so?**

*(Tick one box only)*

Yes, the accounts are already audited voluntarily (1)

Yes, the accounts would be audited voluntarily (2)

No (0)

*Please give reasons for either answer*

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**15. What are your views on the following statements regarding the audit?**

*(Circle the number closest to your view)*

| | Agree | | | | Disagree |
|---|---|---|---|---|---|
| (a) Provides a check on accounting records and systems | 5 | 4 | 3 | 2 | 1 |
| (b) Helps protect against fraud | 5 | 4 | 3 | 2 | 1 |
| (c) Improves the quality of the financial information | 5 | 4 | 3 | 2 | 1 |
| (d) Improves the credibility of the financial information | 5 | 4 | 3 | 2 | 1 |
| (e) Provides assurance to shareholders | 5 | 4 | 3 | 2 | 1 |
| (f) Provides assurance to the bank and other lenders | 5 | 4 | 3 | 2 | 1 |
| (g) Provides assurance to suppliers and trade creditors | 5 | 4 | 3 | 2 | 1 |
| (h) Has a positive effect on company's credit rating score | 5 | 4 | 3 | 2 | 1 |

Other *(please state)*

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**18. Apart from Companies House, who normally receives a copy of the company's statutory accounts?**
*(Tick as many boxes as apply)*
(a) Shareholders
(b) Bank and other providers of finance
(c) Directors/managers who are <u>not</u> shareholders
(d) Employees who are <u>not</u> shareholders
(e) Major suppliers and trade creditors
(f) Major customers
(g) Inland Revenue
Other *(please state)*

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**19. If the accounts were audited last year, is it because any of the following users requested it?**
*(Tick as many boxes as apply)*
(a) Shareholders
(b) Bank and other providers of finance
(c) Major suppliers and trade creditors
(d) Major customers
(e) Inland Revenue
Other *(please state)*

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**20. Apart from capital invested by the shareholders and retained profit, is the company currently financed by any of the following?**
*(Tick as many boxes as apply)*
(a) Personal loans from family or friends.
(b) Bank finance
(c) Business angel capital
(d) Venture capital
(e) Leasing
(f) Hire purchase
(g) Factoring
Other *(please state)*

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**22. What is your position in the company?**
*(Tick one box only)*
The sole director                                                                          (1)
The principal director (eg managing director or chief executive)                           (2)
The finance director                                                                       (3)
Other *(please state)*

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**23. Do you have any of the following qualifications/training?**
*(Tick as many boxes as apply)*
(a) Undergraduate or postgraduate degree
(b) Professional/vocational qualification
(c) Study/training in business or management subjects