The Demand for the Audit in Small Companies in the UK

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Abstract
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This paper investigates whether the three size criteria in company legislation (turnover, balance sheet total and number of employees) are appropriate and sufficient proxies for the demand for the audit in small companies. It also adds to our knowledge of the factors that influence the demand for the audit in smaller companies in the UK.

The study finds that 63% of the sample companies would continue to have their accounts audited if they were to become exempt. This does not support the government's cost rationale, but suggests that the majority of those affected by the proposed changes to increase thresholds consider the benefits of having their accounts audited outweigh the costs. The results indicate that turnover alone could represent size, but that size is 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 are also revealed as influencing the audit decision.

Key words
accounting theory, audit exemption, big GAAP/little GAAP, financial reporting, small companies, private companies, UK

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1. Introduction

Since the 1990s, an escalation of the big GAAP/little GAAP debate in the UK has resulted in a number of financial reporting concessions for qualifying smaller entities. In 1994 the EU Fourth Directive permitted national governments to dispense with the requirement for small companies to undergo a statutory audit. This led to an amendment of section 249A of the Companies Act 1985 (SI 1994/1935) that allowed exemption for most companies with a turnover of up to £90,000 and a balance sheet total not exceeding £1.4m. If the company had a turnover of between £90,000 and £350,000, it was able to dispense with the audit, but had to have an accountant's report. However, these concessions could not be taken up if an audit was required by at least 10% of the total number of shareholders. In 1997 the turnover threshold was raised from £90,000 to £350,000 (SI 1997/936), with the balance sheet total remaining at £1.4m. In addition, the company had to qualify as 'small' for the purposes of filing abbreviated accounts.[1] The next change was in 2000 when the turnover threshold for audit exemption was raised to £1m (SI 2000/1430). This is still considerably lower that the turnover threshold that applies to the other concessions offered by little GAAP.

The most recent developments have taken place as a result of a long-term review of core company law. One of the key issues raised by the independent Steering Group is that company law should recognise that the vast majority of companies are small or medium and adopt a 'think small first' approach (DTI, 1999a). Whilst recognising that there are benefits attached to having the accounts audited, the rationale for increasing the number of exempt companies is to relieve unnecessary cost burdens and a government White Paper has announced further changes (DTI, 2002). These include increasing the size thresholds for defining a 'small' company to the 2002 EU maxima (turnover £4.8m, total assets £2.4m and employees 50).[2] In a radical departure from previous practice, it has

[1] The options set out in Section 246 of the Companies Act 1985 (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.
[2] In most EU countries the threshold is substantially higher than in the UK, but there are also legal and regulatory differences, as well as variations in the company populations and size distributions. These factors make inter-country comparisons of small companies problematic.

been proposed that these higher EU maxima are applied to qualification for audit exemption as well as the other concessions offered under little GAAP.

The current debate is informed by a small number of somewhat dated studies, some recent but unrepresentative studies, together with a large amount of anecdotal evidence from the regulators and the accounting profession. Although previous research shows that the directors of small companies themselves are the main users of the statutory accounts in the UK and Ireland (Page, 1984; Carsberg, Page, Sindall and Waring, 1985; Barker and Noonan, 1996), to a large extent management's views have been ignored in the UK literature. Some information is available from an Australian survey that examined audit demand by 186 family businesses, which were operating in an environment where external auditing was not a statutory requirement (Carey, Simnett and Tanewski, 2000). However, a potential weakness of this study is that the respondents may not have had any experience of the benefits of the audit. In contrast, the present research investigates the views of the directors of companies, the vast majority of which were subject to the statutory audit, but would have a choice if the turnover threshold were increased to the higher EU levels, as proposed.[3] It is based on analysis of data drawn from a large questionnaire survey that was funded by the ICAEW (Collis and Jarvis, 2000), which covered a range of little GAAP issues. The purpose of this paper is to examine the appropriateness and sufficiency of the size criteria used in company legislation for measuring the net benefits of the audit to small companies. Therefore, it contributes to an important aspect of the little GAAP debate in the UK.

The remainder of the paper is organised as follows. The next section outlines previous research and theory that relates to the demand for an external audit of small company accounts, with a focus on the UK literature, and develops a number of hypotheses.[4] This is followed by a description of the research methods and the variables used in the analysis. The final section presents the results and conclusions.

[3] At the time the study was conducted, the EU maximum was £4.2m.
[4] The main focus is on the UK literature, as inter-country comparisons are complicated by differences referred to in footnote 2.

2. Previous research

2.1 Main users of the accounts

An important contribution to the big GAAP/little GAAP literature in the 1980s was a survey by Page (1984), which formed the basis for interviews with directors and their auditors by Carsberg *et al.* (1985). These studies established that the main users of the accounts of small companies are the directors themselves and that lenders are also an important user group. This body of research has been supported by further empirical work with auditors in Ireland by Barker and Noonan (1996), yet little generalisable research has been conducted with the directors of small companies since audit exemptions were introduced in the UK in 1994. The following review of the literature summarises the current state of knowledge in relation to the costs and benefits of the small company audit from a number of theoretical perspectives.

2.2 Cost-benefit factors

The government's use of certain size criteria in the audit legislation implies that a relationship exists between these measures and the relative costs and benefits of the audit. Furthermore, there is an assumption in the legislation that the level at which the exemption threshold is set is where the costs of the audit no longer outweigh the benefits. Previous research does not appear to have tested this hypothesis.

In 1979, Page (1984) conducted a postal questionnaire survey of the directors of 413 companies. His study was conducted prior to the Companies Act 1981, which introduced a three-tier size classification of companies[5] and the option for small companies to file 'modified accounts', and his sample was selected across the complete size range of active, independent companies. His results suggested that 15% of respondents would dispense with the audit if the statutory requirement were removed, but it must be remembered that the study did not focus solely on small companies, which precludes comparison with actual take up by eligible small companies in 1994, some 15 years' later.

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[5] The three tiers were 'small', 'medium' and 'large'.

Details of the number of companies that did take advantage of exemption in the early years are not available, but some five years after its introduction, the DTI estimated that around 50% of eligible companies below the £350,000 threshold were no longer having an audit (DTI, 1999b, p. 6). A MORI telephone survey of 176 companies (ACCA, 1998) forecast that approximately 40% of companies with a turnover of between £350,000 and £1.5m were likely to opt for audit exemption if the threshold were raised to £1.5m.

The profession's views on the most appropriate level for audit exemption are diverse (see for example, Acher, 1999; Graham, 1999; Langard, 1999; Masters, 1999). In favour of raising the turnover threshold, Mitchell (1999) used his organisation's statistics to argue that '92% of accountants responding to a Small Practitioners Association survey supported exemption for all private, owner-managed, small limited companies' Mitchell, 1999, p. 21). On the other hand, Beckerlegge of the ACCA supports maintaining present levels: 'The inescapable fact is that the government's proposals advocate the removal of the audit but not the requirement for the directors to deliver true and fair annual financial statements. Since 90% of the work is done by accountants in the compliance function, it is foolish to take away the value-added aspect which comes with the audit' (Beckerlegge, 1999, p. 21).

The government contends that for smaller companies, 'regulatory costs have a proportionately higher effect' (DTI, 1999a, p. 1). This is substantiated by a study of 126 companies with a turnover of under £1m, which concluded that 'for many owners of micro companies, the statutory audit fee is an additional cost which appears to bring little benefit, either to themselves or others, and which bites into small profits and scarce management time' (Freedman and Goodwin, 1993, p. 127).

Although there has been much debate about potential cost savings, little empirical evidence has been collected. Page (1981) found that the majority of auditors responding to his survey (64%) anticipated a reduction in fees of up to 25% if no audit were performed. Pratten (1998) found that the average reduction in fees among the 16 companies he studied was 15%, but this figure does not take account of the additional help sought from the accountant in preparing the accounts. The suggestion that cost savings may be offset by other chargeable work is supported by the MORI survey (ACCA, 1998), which found that most auditors expect to be able to compensate for lost audit fee income from small company clients with a turnover of around £1m. It seems logical to suggest that the higher the cost of the audit, the greater the savings if it were discontinued. In a study of large companies in the USA that examined the demand for reviews of quarterly performance prior to filing with the Securities and Exchange Commission (SEC), Ettredge, Simon, Smith and Stone (1994) found that cost savings are a particular incentive in firms with complex activities, such as a large number of business segments, foreign operations or assets tied up in stock and debtors. These characteristics are not likely to be key features of small, private companies.

The lack of consensus in the academic literature and accountancy press on the appropriate level for exemption from the audit in the UK indicates that the size thresholds used in company legislation may not adequately capture the demand for the audit in small companies. This is further demonstrated when agency factors are considered.

2.3 Agency factors

From an agency perspective (Jensen and Meckling, 1976) the demand for audited financial statements arises from information asymmetry, on the assumption that human nature is weak, untrustworthy and in need of some kind of checking (Power, 1997). The agency rationale is classically applied in large companies where there are external shareholders and the audited accounts play an agency role in the relationship between shareholder (the principal) and director (the agent). In small companies, a principal is anyone who is distant from the actions of management and is unable to verify them, such as an external shareholder, lender or other provider of credit. Information asymmetry may also be present amongst internal shareholders if they lack the necessary skills to interpret financial information (Power, 1997). Thus, demand for the audit from shareholders may not be dependent on size, since 'even in the very smallest company disputes can arise between shareholders and the audited accounts can be an essential protection' (Freedman and Goodwin, 1993, p. 128).

It can be argued that as small companies are typically family-owned and owner-managed (Bolton, 1971; Carsberg *et al.*, 1985; Collis and Jarvis, 2000) there is little delegation of control, and the risk of internal and external moral hazard is considerably lower than in large companies. This may account for Page's (1984) finding that only 9% of respondents would continue to have their accounts audited principally for the benefit of their shareholders.

Evidence from the small business literature on lending shows that the audited accounts of small firms are crucial in the bank lending decision[6] (Berry, Citron and Jarvis, 1987; Berry, Crum and Waring, 1993; Berry, Faulkner, Hughes and Jarvis, 1993; Deakins and Hussain, 1994). Indeed, a telephone survey of 17 bankers in 1998 found that 94% are more willing to lend to small businesses if they have seen audited accounts (ACCA, 1998, Appendix, p. 4). From the directors' perspective, the study by Page (1984) suggested that 17% of respondents would continue to have their accounts audited for the benefit of external users such as the bank. Exploratory research following the introduction of audit deregulation in 1994 appeared to corroborate this notion (Lin-Seouw, 2001). More recently, the MORI survey revealed that 82% of companies with a turnover of between £350,000 and £1.5m consider that the information provided within the statutory audit is useful to the bank (ACCA, 1998, Appendix, p. 3).

The level of debt was also tested in the Australian study by Carey *et al*. (2000), together with size and proxies for the separation of control from ownership. Results from their logistic regression analysis indicated that of these factors, only debt and separation of control from ownership were significant.

An agency justification in connection with lending is supported by a study of the voluntary audit decision made by large quoted US companies in 1926 prior to the audit becoming a statutory requirement (Chow, 1982). The results show that leverage, and to a lesser extent size, were significant factors. In this study, leverage was used as a proxy for the use of accounting numbers in debt covenants, rather than for an agency demand for the accounts to be audited. In contrast, more recent evidence (Ettredge *et al.*, 1994) indicates that leverage is not significant in explaining the demand for quarterly reviews prior to filing with the SEC. This suggests that leverage is a noisy proxy for the agency demand for the accounts to be audited. This notion is supported by Dichev and Skinner (2002), who report that leverage is used in other studies for a different purpose: namely, the closeness of a company to the constraints specified by the debt covenants.

[6] Banks are the main source of finance to small firms (Cosh and Hughes, 1998).

Simunic and Stein (1987) and Ettredge *et al.* (1994) contend that agency costs increase in proportion to the size and complexity of the firm's operations. However, such costs are expected to be less significant in small firms where the separation of ownership and control is less marked and operations are less complex than in large firms. Keasey, Watson and Wynarczyk (1988) argue that the cost of the universal application of the requirement to have the accounts audited falls disproportionately on small companies, particularly if the accounts are of little use to external users. This seems logical, as the proportion of fixed costs to variable costs is likely to be greater in small firms compared to large firms, and may be the underlying rationale for the government's assertion that the 'costs of the audit are proportionately greater the smaller the company' (DTI, 1999b, p. 8).

From this review, it would appear that considerable reliance is placed on the audited accounts of small companies in maintaining agency relationships. Yet the government's case for limiting or eliminating the requirement for the small company audit appears to have been motivated solely by the desire to reduce cost burdens.

2.4 Management factors

In addition to cost and agency factors, the demand for external audit may be attributable to management's need for a check on internal controls to reduce the chance of material error. In small companies, the likelihood of a material misstatement arising (inherent risk) and the likelihood of the accounting control detecting any material misstatement (control risk) may be high. Although Carsberg *et al.* (1985) established that the main use of the statutory accounts is for management purposes, particularly confirmatory purposes, their study did not explore the specific role of the audit in this connection.

The MORI survey (ACCA, 1998) shows that 40% of small companies consider that information provided by the audit is useful to the business itself, which suggests that the directors in such companies have a general perception that there are net benefits to having the accounts audited. Specific reasons for having a voluntary audit identified in the literature include: the efficient running of the company (Page, 1984); because it is a discipline/good practice; for continuity with the past; because they have a profit-related pay scheme; or because their accountant has advised it (Pratten, 1998). However, there is little generalisable information on management's perceptions of the specific role played by the audit.

In their study of large companies in the USA, Ettredge *et al.* (1994) attempt to make operational the management benefits of audit. They suggest that the purchase of reviews of quarterly performance may be driven by the likelihood of material error. They measure this by the proportion of risky components in the balance sheet, such as stock and debtors, but their results did not provide evidence to accept this hypothesis, as the results for these variables were either not significant or the wrong sign.

2.5 Hypotheses development

There are three significant gaps in the literature regarding the demand for the audit in small companies in the UK. First, there appears to be no empirical evidence on the appropriateness or sufficiency of the government's chosen criteria of turnover, balance sheet total and number of employees for determining audit exemption, nor the specific thresholds. Second, there is a lack of evidence concerning the net benefits of the audit to management. This omission is important, as the directors are the main users of the statutory accounts and those who bear the cost of the audit. Third, it is not known why small companies differ in their choice of whether to retain the audit should it become non-mandatory. In order to test this effectively, it is important to survey companies where the directors have some knowledge and experience of the contribution the audit can make.

The purpose of this paper is to address these deficiencies by focusing on the following research question:

> Do the size criteria in audit exemption legislation capture the net benefit of the audit to the directors of small[7] private companies in the UK?

This question is broken down into a number of theoretical hypotheses, which are presented in the alternate form. The first hypothesis arises from the economic rationale implicit in the audit exemption legislation that the cost of the audit falls disproportionately on small companies:

> H1: *ceteris paribus*, the likelihood of the directors choosing a non-mandatory audit increases with size, as measured by turnover, balance sheet total and/or employees.

The remaining hypotheses emanate from the contention that the demand for the audit is influenced by agency factors related to information asymmetry and management's beliefs about the benefits of the audit:

> H2: *ceteris paribus*, the likelihood of the directors choosing a non-mandatory audit increases if the company has agency relationships with lenders.

> H3: *ceteris paribus*, the likelihood of the directors choosing a non-mandatory audit increases if there are agency relationships between owners.

> H4: *ceteris paribus*, the likelihood of the directors choosing to have a non-mandatory audit increases with their belief that the audit acts as a check on internal controls.

> H5: *ceteris paribus*, the likelihood of the directors choosing to have a non-mandatory audit increases with their belief that the audit increases the quality of the information.

> H6: *ceteris paribus*, the likelihood of the directors choosing to have a non-mandatory audit increases with their general knowledge of the costs and benefits of the audit.

Thus, the general model for the logistic regression study is expressed as:

Non-mandatory audit demand = f (size, agency costs, perceptions of costs and benefits)

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[7] 'Small' is defined in the next section.

3. Research methods

3.1 Sample selection and data collection

The research took the form of a logistic regression study based on the findings of a postal questionnaire survey. The survey was conducted in 1999 and canvassed the views of the principal directors[8] of companies classified as 'small' under UK law, as well as larger companies that would be reclassified as such if the thresholds were raised to EU levels as they stood at that time. An initial sample was selected from FAME, which consisted of active, independent[9] private limited companies that met the following three size criteria in their most recently filed accounts, which represent the 1999 EU maxima:

- turnover up to £4.2m;[10]
- balance sheet total of up to £2.1m;
- up to 50 employees.

This produced a list of 11,648 companies from which a systematic random sample was taken by selecting every fifth company. After eliminating 39 companies that were beyond the scope of the study, an effective sample of 2,288 companies was identified.

It should be noted that turnover is available only if the company has filed full accounts and therefore the survey did not canvas the views of directors who had filed abbreviated accounts. However, this is unlikely to be a major weakness of the study, as filing choice is an issue of disclosure, whereas audit choice is an issue of assurance.

A six-page questionnaire was designed with 33 questions, many of which were multipart. The questions related to different aspects of the use of financial information by the directors. There were three specific questions on the subject of the audit, as well as

[8] The questionnaire was addressed to the first named director as provided by FAME, who it was anticipated would be the principal director or one of the principal directors of the company and be in a position to make an informed reply. Indeed, it was found that the majority of the respondents (88%) held the title of managing director, chief executive, company secretary, finance director, etc.
[9] Subsidiary companies were excluded.
[10] This database contains detailed information taken from the returns made to the Registrar of Companies, but in 1999 was not fully representative of companies with a turnover of less than £0.5m.

questions that explored characteristics of the directors and internal and external use of the statutory accounts.

The questionnaire was posted to the principal director, together with an accompanying letter and prepaid envelope in April 1999. After two follow-ups, which Kervin (1992) recommends as the most effective way of increasing response rates, a total of 385 usable replies were received, giving a response rate of 17%. The number of responses is considered sufficient, as it exceeds the minimum acceptable sample size of 384 for a population of 1m or more (Krejcie and Morgan, 1970, p. 608). In any large survey the problem of non-response bias must be addressed, since not all of those surveyed respond. Previous research (Morgan, 1974; Wallace and Mellor, 1988) suggests that non-respondents behave like late respondents. Tests to look for differences in the characteristics of early respondents and late respondents were not significant, confirming that the two sets were drawn from the same population. This allows the results of the study to be generalised to the population of companies with a turnover between £0.5m and £4.2m filing full accounts.

3.2 The sample companies

As is the case with small businesses in general, the majority of the sample companies were at the smaller end of the scale: 62% had a turnover of between £0.5m and less than £1m; 49% had total assets of under £0.5m; and 52% had up to 10 employees. Turnover ranged from a minimum of £10,000 to a maximum of £4.2m. The sample was spread across all regions of Great Britain and a wide range of industries.

The companies were also small in terms of the number of owners, with 82% having between one and four shareholders and 66% being wholly family-owned. In 81% of cases the respondent was the principal director. In a further 7% of cases, the respondent was a director, but did not provide a more specific title. More than a third of the respondents (37%) had a first degree or a postgraduate degree and 57% had a professional or vocational qualification.

3.3 Description of the variables

Table 1 presents a summary of the variables included in the analysis, with descriptive statistics provided in Table 2. The data for size variables were obtained from FAME at the time the sample was selected in 1999. All the other variables derive from the questionnaire survey.

Insert Table 1 and Table 2

NMAUDIT is the dependent variable used in the analysis and captures whether the directors would continue to have their accounts audited if they were not legally required to do. The data is coded 1 if they would continue with the audit and 0 if not (question 12 in the questionnaire). Non-responses and cases where the respondents indicated that they were undecided were excluded.

TOVER, ASSETS and EMPLS are variables that measure the company's turnover and balance sheet total and number of employees respectively and are used to test H1. These variables capture the size criteria used in company legislation and are expected to have a positive influence on the dependent variable and are used to test H1. For the purpose of the analysis, the turnover and balance sheet total data, which was collected in £k, was recoded as £m.

In this study, size is used as a partial measure of the benefit of the audit and as the sole measure of the cost of audit. However, Chan, Ezzamel and Gwilliam (1993) found that the audit cost of quoted companies is determined by factors in addition to size. Ettredge *et al.* (1994) argue that cost is also affected by the complexity of operations, proxied by the number of business segments, the level of foreign operations and the percentage of assets tied up in stock and debtors. The number of business segments and the level of foreign operations are not included as they are not likely to apply to small companies. The cost of auditing stock and debtors is not included for two reasons. First, it is likely to be affected by the quality of the control systems, rather than the percentage of stock and debtors in the balance sheet. Secondly, in a small company although the proportion of stock and debtors may be high, the additional costs generated are likely to be quite low in relation to the fixed cost element in the audit fee. A potentially relevant factor which is omitted is the cost of the audit in relation to the size of the company, as opposed to the absolute cost. We omit this since the reported audit fee itself is likely to involve substantial error. Small companies often require substantial accountancy work prior to the conduct of the audit, and such work can be reported as either audit preparation or as additional accountancy services.

BANK is a dummy variable that is used to test H2. It captures the agency relationship with lenders and is coded 1 if the company normally gives a copy of the annual accounts to the bank/other providers of finance and 0 if not (question 16, fifth variable). It is expected to have a positive influence on the dependent variable.

In a number of previous studies, the bank variable differs from ours. Chow (1982), Ettredge *et al.* (1994) and Carey *et al.* (2000) use the debt-equity ratio to capture banking agency costs. In the context of small businesses, however, it is not clear why the likelihood of a company having an external audit would increase linearly with leverage. It seems more likely that when a critical level of leverage is reached, the bank will require the company to have an external audit. Evidence suggests that bank practices vary widely (Dichev and Skinner, 2002) and, therefore, it is difficult to model the unknown and company-specific non-linearity. Furthermore, planned as well as current borrowing is likely to affect the demand for the audit. Therefore, a variable that directly measures whether or not the company provides audited accounts for lenders is employed.

FAMILY is a dummy variable that captures the agency relationship with shareholders and is used to test H3. It is coded 1 if the company is wholly family-owned and 0 if it is partly family-owned or the owners are unrelated (question 5). This variable is expected to have a negative influence on the dependent variable.

CHECK is a management-related variable that captures whether the directors agree with the statement that the audit provides a check on internal books/records and is used to test H5. It is coded on a scale of 1 to 5, where 1 is disagree and 5 is agree (question 11, first variable). This variable is expected to have a positive influence on the demand for the audit.

QUALITY is a management-related variable that captures whether the directors agree with the statement that the audit improves the quality of the information and is used to test H4. This variable is coded on a scale of 1 to 5, where 1 is disagree and 5 is agree (question 11, fourth variable). It is expected to have a positive influence on the dependent variable.

EDUCATN is a management-related dummy variable that captures the educational profile of the respondent and is used to test H6. It is coded 1 if the respondent has a degree or holds a professional/vocational qualification or has studied/received training in business/management subjects, and 0 if not (questions 29 – 31). This variable is a proxy for the directors' knowledge of the costs and benefits of the audit and is expected to have a positive influence on the dependent variable.

3.4 Multicollinearity

Multicollinearity, which occurs when the correlation between independent variables in a multiple regression model is very high, can give rise to unreliable estimates of the standard errors. This makes it hard to identify the separate effects of the predictors in the analysis (Judge, Griffiths, Hill, Lutkepol and Lee, 1985, p. 896). Therefore, the data was screened to diagnose potential problems among the ordinal and ratio variables using scatter diagrams, which demonstrated modest positive relationships between the ordinal and ratio variables.[11] This interpretation is confirmed by the correlation matrix shown in Table 3, which shows that the correlation coefficients are less than 0.7 and indicates that there is no major 'overlap' in the predictive power of the explanatory variables (Kervin, 1992, p. 608).

Insert Table 3

4. Results and discussion

4.1 Univariate and bivariate analysis

[11] As they are dichotomous variables, BANK, FAMILY and EDUCATN are not suitable for this analysis.

The key features of the responses to the questions are as follows. The majority of directors (63%) see sufficient benefits in having their accounts audited that they would continue to do so if they became exempt. Of these companies, 86% perceive the audit as a check on internal records; 73% give a copy of their audited accounts to the bank/lenders; 60% are wholly family-owned; and 48% believe it improves the quality of the information in the financial statements. The average turnover of this group of companies was £1.3m. The average turnover of the 29% that stated that they would dispense with the practice was £0.8m.

As the independent variables relating to size (TOVER, ASSETS and EMPLS) are not normally distributed in small companies, a non-parametric Mann-Whitney *U* test of difference was conducted against the dependent variable (NMAUDIT). A non-parametric test is also required for CHECK and QUALITY, as these two variables are measured on an ordinal scale. The low level of the probability statistic shown in Table 4 indicates a significant difference between the mean ranks of the two sub-samples in the dependent variable and, therefore, these variables are included in the logistic regression.

The remaining independent variables are dichotomous categorical variables. Therefore, a Chi-square test was conducted to measure the extent of association between each variable and NMAUDIT. The low probability statistics shown in Table 5 provide evidence of a strong positive association in each case. This means that there is a significant correlation between NMAUDIT and BANK, FAMILY and EDUCATN and these variables are included in the model.

Insert Tables 4 and 5

4.2 Multivariate analysis

4.2.1 Size factors as an explanation for the demand for a voluntary external audit

The first logistic regression model was developed to test the hypothesis that the likelihood of the directors choosing a non-mandatory audit increases with the size of the company as measured by turnover, balance sheet total and number of employees respectively (H1). The purpose of the analysis was to investigate the adequacy of the three size criteria used in company legislation to capture the cost versus the benefits of the audit. Table 6 shows the results of the individual results for each measure of size as the explanatory variable in panels A – C. In each case, there is a significant association with the demand for a non-mandatory audit. Thus, the larger the company according to any one of the three size criteria used in the legislation, the more likely it is that the directors will choose to have the company's accounts audited and this provides evidence in support of H1. However, panel D reveals that when all the size measures are entered into the regression model together, only TOVER is significant. This demonstrates that turnover by itself captures the cost-benefits of the audit and that the other two size variables do not add significant information and could be excluded as criteria in the audit regulations.

Insert Table 6

One of the problems with multicollinearity is that coefficient estimates are unstable from sample to sample. Therefore, in addition to examining the correlation coefficients in Table 3, a second check was conducted by partitioning the sample into quintiles according to turnover. The equation in Panel D was estimated again, with a different quintile being removed in turn. The results still show that TOVER is significant, whereas the other measures of size are not.[12]

4.2.2 Other factors explaining the demand for a voluntary external audit

It is important to consider what other factors, apart from relative cost, might contribute to the demand for the audit in small companies. Therefore, a second logistic regression model was developed to test H1 – H6, using TOVER alone as the size variable. The significant results presented in Table 7 provide evidence to accept H1 – H6.

Insert Table 7

The general performance of this model is superior to the simple size model shown in Panel D of Table 6. This is demonstrated by the considerably improved goodness of fit (the pseudo R^2 in Panel D of Table 6 shows that size factors explain 6% of the demand for

[12] These results are available from the authors.

the audit, whilst the second model in Table 7 explains 35%). This supports the contention that the size alone does not capture the significant features of the demand for the audit in small companies. Indeed, the size variable (TOVER) has considerably less explanatory power than the perceptions of the principal director with regard to the net benefits of the audit (CHECK and QUALITY) and his or her educational profile (EDUCATN). This is demonstrated by the relative values of the Wald test results.

In addition, the results give an important insight into the agency role played by the audited accounts in addressing information asymmetry problems in small companies. First, the significance of BANK demonstrates that the desire for a non-mandatory audit is associated with companies with agency relationships with lenders. This suggests that the cost of the audit in terms of time, money and disruption is an agency cost that is accepted by the directors in order to maintain good relations with lenders. Second, the demand for the audit is associated with companies that are not wholly family owned and the negative sign on the regression coefficient for FAMILY demonstrates this. This seems logical, as the level of trust is likely to be higher among owners who are related and therefore know each other well.

Finally, the analysis reveals that the demand for an external audit is driven by management-related factors: CHECK, QUALITY and EDUCATN, which relate to the directors' perceptions of the costs and benefits. Two specific benefits are identified: the reduction in inherent risk and control risk provided by the independent check on internal books and records, and an improvement in the quality of the information contained in the statutory accounts.

5. Conclusions

This paper addresses a gap in the literature relating to the factors that affect the demand for the audit by the directors of smaller companies and the findings are generalisable to companies with a turnover between £0.5m and £4.2m filing full accounts. Their views are important as not only do they pay for the audit, but also they are the main users of the statutory accounts. The size of small company that should be exempt from the audit is an important issue in the big GAAP/little GAAP debate and this study both updates and extends previous research. It also adds to our knowledge of the factors that influence the demand for the audit in small companies in the UK.

The purpose of further deregulation of the audit for smaller companies is to relieve cost burdens (DTI, 1999a). However, this study shows that 63% of the sample companies would choose to have a voluntary external audit. This does not support the government's cost rationale, but suggests that the majority of those affected by the proposed changes to increase the exemption thresholds to the EU maxima consider the benefits of having their accounts audited outweigh the costs. The analysis in this paper indicates that not only would the directors of smaller companies make an active choice on this particular aspect of little GAAP, but that it would be an informed choice. In order of statistical significance, the main factors that predict the demand for a voluntary audit are:

1. Perceptions of benefits, as measured by the directors considering that the audit improves the quality of the information and/or provides a check on internal records.
2. Education of the principal director, as measured by the principal director having a first or postgraduate degree and/or a professional or vocational qualification and/or having studied or received training in business or management subjects or subjects related to the company's activities.
3. Size, as measured by the company being larger in terms of turnover.
4. Agency relationships between owners, as measured by the company not being wholly family-owned.
5. Agency relationships between the company and lenders, as measured by the directors giving a copy of the audited statutory accounts to the bank or other providers of finance.

These factors account for 35% of the variance in the demand for a non-mandatory audit by the sample companies. These results extend the study by Carey *et al.* (2000) where the pseudo R^2 is 2%. It also compares favourably with studies of large companies, such as Chow (1982) where the pseudo R^2 is 27%. Nevertheless, other explanations need to be identified.

It seems logical to suggest that in some companies the audit decision will be influenced by their growth strategies, with those aspiring to become large companies being more likely to continue to have the accounts audited. Another factor that is likely to influence the audit decision, and which was not tested in the model, is the cost of the audit and its relation to the size of the company. This is a complex area, as the vast majority (82%) of small companies' statutory accounts are prepared by an external accountant (Collis and Jarvis, 2000) and there is likely to be considerable overlap between preparation costs and the cost of the audit.

It seems likely that the directors' knowledge of the costs and benefits of the audit will be influenced by their accountant's view of the value of the audit to the business. Related to this is the question of eligibility for exemption, which would also require the accountant's advice. If the directors believe that the costs outweigh the benefits, proximity to the threshold may lead them to review their audit policy on an annual basis. These aspects were not examined, but offer fruitful avenues for future research.

A further limitation of the study relates to the reliability of directors' responses when asked to predict their behaviour in connection with the audit choice. The alternative approach is to observe their actual choices. But the drawback of this is that the directors may not have any experience of the benefits of the audit. Future research should be able to establish what proportion of the tranche of companies most recently given exemption (those with a turnover of between £350,000 and £1m) have taken up the option, which would provide directly comparable empirical data for the first time.

One of the main challenges faced by the regulators in developing little GAAP is to provide a regulatory framework that will be applicable to all small companies, at all times over an extensive period and in all circumstances. This involves balancing the consequential choices made by company management with the public interest and perceived burdens. The findings of this study have a number of important implications for accounting theory, as incorporated in UK GAAP. A key finding, is that turnover alone could represent size in this aspect of little GAAP. However, size is not a complete measure for capturing the demand for the audit. Indeed, the research shows that size is less important than the directors' perceptions of the value of the audit. The qualitative nature of such factors means that they would be hard to incorporate in the legislation, even if this were perceived as desirable by the regulators.

The results suggest that whilst the difference in the needs of small companies compared to those of large companies should be taken into account in little GAAP, the similarities should not be overlooked. The rationale for the external audit of the accounts of large companies is based on the requirement for an independent opinion for the benefit of shareholders, who have appointed the directors to manage the business on their behalf. In smaller companies, where there is seldom any separation of ownership and control, there is an assumption in GAAP that agency relationships are of little importance. Yet this study reveals two agency relationships. The first is between the company and the bank or other lenders. Where this is the case, the removal of the statutory audit requirement will not prevent companies with borrowings from continuing to have their accounts audited to satisfy the needs of the bank, as market forces influence this decision. The second situation arises amongst shareholders in companies that are not entirely family-owned, where there is a case for continuing to provide a statutory requirement for the audit if 10% of shareholders require it. This will cover the needs of external shareholders in small companies, who are not involved in the day-to-day running of the business and require assurance for the same reasons as their counterparts in large companies. It will also meet the needs of owner-managers of small companies that are not wholly family-owned, where the independent assurance provided by the audit is also required.

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Table 1
Description of variables

Label	Description	Expected sign	Hypothesis tested
NMAUDIT	Whether the company would have a non-mandatory audit (1 = yes, 0 = no)	Dependent variable	
TOVER	Size of company as measured by turnover (£m)	+ve	H1
ASSETS	Size of company as measured by balance sheet total (£m)	+ve	H1
EMPLS	Size of company as measured by number of employees	+ve	H1
BANK	Whether the statutory accounts are normally given to the bank (1 = yes, 0 = no)	+ve	H2
FAMILY	Whether the company is wholly family-owned (1 = yes, 0 = no)	-ve	H3
CHECK	Extent of agreement that the audit provides a check on internal books/records (1 = disagree, 5 = agree)	+ve	H4
QUALITY	Extent of agreement that the audit improves the quality of the information (1 = disagree, 5 = agree)	+ve	H4
EDUCATN	Whether the respondent has a degree, a professional/vocational qualification or has studied or received training in business/management subjects or subjects related to the company's activities (1 = yes, 0 = no)	+ve	H4

Table 2
Descriptive statistics

Label	N	Min	Max	Mean	SD
NMAUDIT	352	0	1	.680	.465
TOVER	385	.01	4.20	1.131	1.055
ASSETS	385	.01	2.09	.706	.533
EMPLS	385	1	50	14.110	12.515
BANK	382	0	1	.700	.460
FAMILY	384	0	1	.660	.476
CHECK	366	1	5	4.150	1.092
QUALITY	364	1	5	3.150	1.180
EDUCATN	385	0	1	.770	.420

Table 3

Correlation matrix of ratio and ordinal independent variables

	ASSETS	EMPLS	TOVER	CHECK	QUALITY
ASSETS	1.000				
EMPLS	.457*	1.000			
TOVER	.620*	.547*	1.000		
CHECK	.028	.007	.075	1.000	
QUALITY	-.038	-.082	-.051	.434*	1.000

Notes: N = 358
See Table 1 for a description of the variables
* Correlation is significant at the 0.01 level (2-tailed)

Table 4

Mann-Whitney U tests on non-parametric independent variables

Label	**Non-mandatory audit (No. of companies)**		**Mann-Whitney *U***	**Z**	***p***
	Yes	**No**			
TOVER	241	111	9847.0	–3.978	.000
ASSETS	241	111	10630.0	–3.095	.002
EMPLS	241	111	11086.5	–2.584	.010
CHECK	237	101	7056.5	–6.494	.000
QUALITY	236	101	7051.5	–6.126	.000

Note: See Table 1 for a description of the variables

Table 5

Chi-square tests on categorical independent variables

Label	**Chi-square**	**df**	***p***
BANK	5.094	1	.024
FAMILY	8.193	1	.004
EDUCATN	9.920	1	.002

Note: See Table 1 for a description of the variables

Table 6
Logistic regression model of the demand for a voluntary audit: size factors

Variable	**B**	**SE**	**Wald**	***p***
Panel A				
TOVER	.447	.128	12.260	.000
Constant	.303	.169	3.227	.072
Panel B				
ASSETS	.574	.230	6.232	.013
Constant	.379	.190	3.954	.047
Panel C				
EMPLS	.020	.010	4.065	.044
Constant	.501	.174	8.336	.004
Panel D				
TOVER	.421	.167	6.384	.012
ASSETS	.125	.281	.199	.656
EMPLS	-.002	.012	.018	.892
Constant	.266	.205	1.683	.195

Notes: N = 385
See Table 1 for a description of the variables
Model summaries:
Panel A Chi-square 14.219, df 1, p <.01, -2 Log likelihood 424.590; Pseudo R^2 .056
Panel B Chi-square 6.615, df 1, p <.01, -2 Log likelihood 432.194; Pseudo R^2 .026
Panel C Chi-square 4.300, df 1, p <.05, -2 Log likelihood 434.509; Pseudo R^2 .017
Panel D Chi-square 14.422, df 3, p <.01, -2 Log likelihood 424.387, Pseudo R^2 .056

Table 7
Logistic regression model of the demand for a voluntary audit: net benefits

Variable	**B**	**SE**	**Wald**	***p***
TOVER	.333	.150	4.933	.026
BANK	.592	.301	3.877	.049
FAMILY	-.632	.310	4.152	.042
CHECK	.579	.141	16.762	.000
QUALITY	.626	.142	19.436	.000
EDUCATN	1.140	.335	11.552	.001
Constant	-4.550	.785	33.614	.000

Notes: N = 332
See Table 1 for a description of the variables
Model summary:
Chi-square 93.501, df 6, p < .01, -2 Log likelihood 311.091, Pseudo R^2 .348

Appendix
Extract of questionnaire showing variables analysed

Q2. How many shareholders (owners) does the company have? ☐

Q5. Would you describe the company as a family-owned business? *(Tick one box only)*

Family-owned (first generation)	☐	(1)
Family-owned (subsequent generation)	☐	(2)
Partly family owned	☐	(3)
Owners are not related	☐	(4)

Q11. What is your view on the following statements regarding the audit? *(Circle the number closest to your view)*

	Agree				Disagree
Provides a check on internal books/records	5	4	3	2	1
Shifts responsibility from the auditors to the directors	5	4	3	2	1
Helps protect against fraud	5	4	3	2	1
Improves quality of the information	5	4	3	2	1
Improves credibility of the information	5	4	3	2	1
Shows compliance with legislation	5	4	3	2	1
Other *(please state)*	5	4	3	2	1

....

Q12. Would you continue to have your company's accounts audited if not legally required to do so? *(Tick one box only)*

Yes *(please give your reasons)* ☐

....

No *(please give your reasons)* ☐

....

Undecided	☐	(1)
Would take professional advice	☐	(2)

Q16. Apart from the Registrar of Companies, who normally receives a copy of the annual accounts?

	(1) Abbreviated Statutory accounts	(2) Full statutory accounts	(3) Additional detailed accounts
All employees			
Directors who are shareholders			
Directors who are <u>not</u> shareholders			
Senior managers			
Bank/other providers of finance			
Major suppliers/creditors			
Major customers			
Inland Revenue			
Anyone else? *(please state)*			

....

Q28. What is your position in the company? *(Tick one box only)*

Managing director/Chief executive	☐	(1)
Finance director	☐	(2)
Other *(please state)*	☐	

....

Q29. What is your highest educational qualification? *(Tick one box only)*

First degree	☐	(1)
Postgraduate degree	☐	(2)
None of these	☐	(3)

Q30. Do you hold a professional or a vocational qualification?

Yes	☐	(1)
No	☐	(0)

Q31. Have you studied or received training in business or management subjects, or subjects related to the company's activities? *(Tick one box only)*

Business/management subjects	☐	(1)
Subjects related to company's activities	☐	(2)
None of these	☐	(3)