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AUDITOR RESPONSES TO COST CONTROLS

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ABSTRACT

This study is designed to investigate empirically the range and frequency of functional and dysfunctional auditor behaviours in Big Five (now Big Four) audit firms in Ireland in response to formal cost control systems, and to identify trends in response behaviours since previous studies. A survey questionnaire was sent to all auditors in second year (audit juniors) and third year (audit seniors) in four of the Big Five firms in Ireland in 1999. The findings suggest that the levels of underreporting of time (URT) and quality threatening behaviours (QTB) in response to tight time budgets have decreased since the previous study in Ireland. The overall level of URT has also decreased, while overall QTB frequency has increased. This suggests that factors other than tight time budgets are driving levels of QTB in the current audit environment but having no effect on URT. The behavioural patterns of juniors and seniors were not found to be significantly different, but male auditors were found to report significantly higher levels of certain dysfunctional behaviours than female auditors. Contrary to prior literature, the level of documentation between audit areas was not found to be a significant indicator of the most serious form of QTB – premature sign-off (PSO); however, the level of documentation within each of two audit areas was a significant indicator of the level of PSO within those areas.

INTRODUCTION

Previous studies have shown that auditors engage in high levels of behaviours which appear dysfunctional (Alderman and Deitrick, 1982; Malone and Roberts, 1996; Otley and Pierce, 1996). Dysfunctional behaviour refers to any behaviour which is not in the long-term interests of an organisation, and in the context of audit firms includes quality threatening behaviour (QTB) and underreporting of audit time (URT). The independent audit has an important role to play in economic decision making and the existence of these behaviours could undermine that role, with serious implications for the accounting profession. A likely consequence of

recent adverse publicity is that auditor performance will be subjected to increased levels of scrutiny and assessment, and behaviours such as those examined in this study may assume increased significance in that assessment.

Most of the empirical findings to date on auditor time pressure relate to the US environment. The largest non-US study was conducted in Ireland, where high levels of dysfunctional behaviour were reported (Otley and Pierce, 1996), but significant changes have occurred in the audit environment since then. A Review Group on Auditing was formed in Ireland in 2000 as a result of a number of political and financial scandals in the 1990s. The current climate calls for accountability and transparency, and there is a frequently cited need for the profession not only to maintain the highest professional standards but to be seen to do so. There is also a view that for some auditors the pressures of the market place outweigh the present system of audit regulation (Report of the Review Group on Auditing, 2000). Audit firms are responding to this increased pressure from the public, as exemplified by PwC's new code of conduct instructing employees to consider a series of questions such as 'Would you be embarrassed if others knew you took this course of action?' and 'Can you sleep at night?' when making auditing decisions (Leahy, 2003).

With cooperation from four of the then Big Five firms in Ireland, the study provides a more comprehensive analysis of control system related behaviour in audit firms than previously existed. Trends in previously reported behaviours are examined, previously unidentified forms of behaviour are highlighted and relationships between all forms of behaviour are explored. Recognising the dominance of the male gender at the highest levels in the profession (Barker and Monks, 1995) and previously reported gender differences in ethical reasoning (Clarke, Hill and Stevens, 1996), the study goes on to examine gender differences in relation to frequency of dysfunctional types of behaviour. While previous studies identified the audit senior as the most pressurised position in the firm and focused entirely on that position (Kelley and Seiler, 1982; Otley and Pierce, 1996), this study includes both seniors and juniors and presents a comparative analysis of behaviours across both staff grades. Given the reduced levels of documentation on audit files (Winograd, Gerson and Berlin, 2000), the relationship between QTB and levels of documentation both within each audit area and between audit areas is examined.

The next section sets out a review of the relevant management control literature and the implications of this literature for audit firms. The research questions are then formulated, data collection procedures described and findings presented. The final section of the paper provides a discussion of the findings and examines the implications for audit firms and for future research[1].

BACKGROUND LITERATURE

Behavioural responses to control systems

The management control literature provides a framework for exploring functional and dysfunctional responses to control systems in audit firms. In general terms,

control systems differ in complexity, and simple control systems such as a thermostat are described as mechanistic or cybernetic (Emmanuel, Otley and Merchant, 1990). The management control literature suggests that a number of conditions are necessary to achieve effective control using a cybernetic control system. These include the existence of quantified objectives for the process, the measurability of outputs, the predictability of the process and the capability of taking action to reduce deviations from objectives (Otley and Berry, 1980). Cybernetic control systems should not be applied to management control of an organisation without taking into account the difference in complexity of this system (Otley and Berry, 1980). To the extent that the conditions specified for cybernetic systems are not met, control problems arise. Accounting information has been found to be particularly problematic as it can often be distorted through dysfunctional behaviours (Hopwood, 1974). The management control literature has highlighted a variety of dysfunctional responses to accounting controls, the most serious of which include data manipulation, resentment towards the system and short-term opportunistic behaviour.

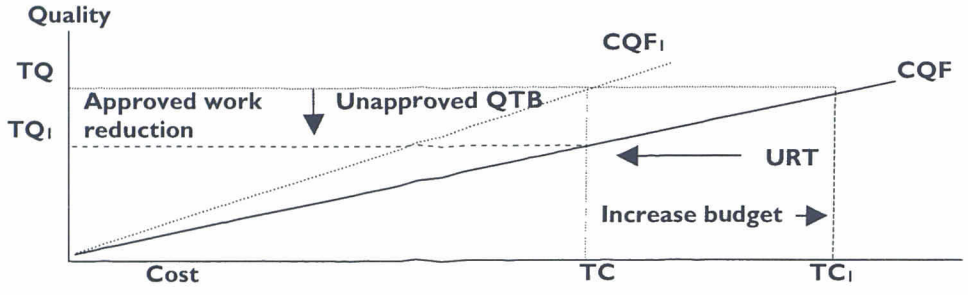
Audit firms

Company law requires an annual independent audit and the inclusion of the auditor's report in the annual report expressing an opinion on the truth and fairness of information contained in financial statements. Audit evidence is collected to form the basis for this opinion. Professional judgement is needed to determine the amount of evidence that should be collected to provide a level of assurance that the audit opinion is reasonable in the given context. The largest international accounting firms are known as the Big Five (now Big Four), and in 2000 over 50 per cent of the premier 2,500 companies in Ireland were audited by Big Five firms (O'Neill, 2000). Two decades ago it was noted that the level of competition had increased, forcing auditors to reduce fees in order to obtain audit clients (DeAngelo, 1981a, b). The audit market is now fiercely competitive and speculation continues in the professional press that the audit service is very often seen by the firms as a loss leader (Aharoni, 1999). The use of audit tendering by clients to select auditors is now commonplace and audit tenders have been associated with significant audit fee reductions in the year of change of an auditor (Beattie and Fearnley, 1998). By gaining audit clients, firms hope that they will be able to offer additional profitable services to that client (*Economist*, 2000). Ezzamel, Gwilliam and Holland (1996), using data from 314 UK quoted companies, found that non-audit services fees amounted to 87 per cent of total audit fees.

Audit firms are concerned with controlling the cost and quality of an audit (**Figure 1**). As the firms are labour intensive their main cost is employee time. Controls over time are mainly in the form of time budgets. The general approach to controlling the audit process has been well documented in earlier studies and is broadly similar for all the large firms. For each audit, a time budget (based on target cost TC) and work programme (based on target quality TQ) are approved by the audit manager and/or partner. The audit programme sets out the tests that need to be performed to form a basis for the audit opinion. Most of the work

specified on the work programme is carried out by audit staff. As each audit step is completed, it is signed off on the work programme. Controlling cost and quality are potentially conflicting objectives (McNair, 1991). Controlling costs involves reducing time on an audit, but quality concerns may require audit firms to invest more time in the audit (Mautz and Sharaf, 1961; Holmstrom, 1984).

FIGURE 1: THE COST–QUALITY DILEMMA



TQ = target quality TC = target cost *CQF = cost/quality function*

Previous studies have found that auditors are under extreme time pressure to complete the audit work in the time budgeted (Kelley and Seiler, 1982; Otley and Pierce, 1996). In the context of the cost–quality function (CQF) in **Figure 1** it is not therefore possible to meet both TC and TQ. This conflict can result in a trade-off between long and short-term profitability. The focus for short-term profitability is on cost reduction, but for long-term profitability audit quality becomes more important. The cost–quality conflict can be dealt with in a number of ways. At the level of the firm, increased efficiencies may be possible (reflected by CQF_1). Alternatively, the firm may be prepared to bear a full write-off (equal to TC_1 minus TC), or to combine a smaller write-off with some increased efficiency. If the cost–quality conflict is not addressed at firm level, the individual auditor may decide to complete the work required by the audit programme and either to suffer the consequences of a budget overrun or to attempt to avoid such an overrun by negotiating a budget increase or underreporting time worked. Alternatively, the auditor may decide to reduce the level of audit work and not disclose the deficiency, thereby directly threatening audit quality, or seek approval for a reduction in the level of audit work from the audit manager.

Under Otley and Berry's (1980) conditions for effective control, the audit process cannot be considered "in control" due to the difficulty of measuring audit quality. This has been frequently referred to in the literature; Power (1999) referred to the 'deep epistemological obscurity' of auditing and Pentland (2000) described the audit as ' ... a kind of uncontrolled experiment, and there is no way to know what would have happened if an audit were not performed' (p. 311). Problems in measuring quality result in difficulties not only for users of financial information but also for audit partners who rely on the work of audit staff to form an audit

opinion (Herrbach, 2001). Audit cost can be more easily controlled, resulting in a danger of over-emphasis on short-term profitability. McNair argued that the cost versus quality ambivalence in an audit setting is functional for the firm, as it allows the firm to formally protect its reputation while informally ensuring its economic survival. It results, however, in ethical ambivalence for the individual, as unethical behaviour is rewarded by the performance evaluation system (McNair, 1991). Jansen and von Glinow (1985, p. 815) define ethical ambivalence as

> a form of sociological ambivalence in which (a) the behaviours, attitudes and norms that are shaped and maintained by the organizational reward system conflict with (b) the behaviours, attitudes and norms congruent with the ethical values and judgments of organizational stakeholders.

SAS 240 *Quality control for audit work* (APB, 2000) requires that audit firms never compromise the demands of audit quality in order to achieve financial success. McNair (1991), however, suggested that in reality audit firms seek to operate in a zone of compromise. At the individual auditor level, the conflicting goals of cost and quality result in a dilemma and auditors have to make choices of whether to reduce quality or increase costs. If the cost-quality function could be changed to CQF_1 (by use of more efficient audit methodologies, for example) then both targets could be met. The move by audit firms to a strategic based audit (Winograd et al., 2000) suggests that firms are pursuing this strategy. The strategic based audit has increased the level of judgement needed in performing audit work and reduced the programmed or predictive nature of audit testing at the individual auditor level (Herrbach, 2001).

Responses to tight time budgets

Previous studies have shown that auditors respond to time budget pressure both functionally (for example, working harder) and dysfunctionally (for example, reducing the quality of work), though most of these studies have focused on dysfunctional behaviours. Dysfunctional behaviour is divided into quality threatening behaviour (QTB) and underreporting of time (URT) in this study. QTB is defined as behaviour which has the potential to reduce audit quality; examples include acceptance of weak client explanations and reductions in audit sample sizes. URT is defined as charging less time to a particular job than was actually worked on that job.

The most frequently examined QTB is premature sign-off (PSO). PSO occurs when an auditor signs off a required audit step, not covered by another audit step, without actually completing the work or noting the omission (Alderman and Deitrick, 1982). This has been found to occur on a regular basis (Hyatt and Lovig, 2002) and represents a direct threat to audit quality, as the procedures specified in the audit programme by audit superiors have not been completed. URT has been widely discussed in the literature (Dirsmith and Covaleski, 1985; McNair, 1991; Otley and Pierce, 1996; Anderson-Gough, Grey and Robson, 2001) and opinions differ as to whether it is a functional or dysfunctional form of behaviour. There is

consistent evidence, however, that URT is contrary to firm policies on the basis that it undermines the accuracy of time records.

Overall, the management control literature suggests that the use of accounting information in inappropriate circumstances can result in dysfunctional behaviour (Hopwood, 1974). Audit firms are concerned with controlling cost and quality which are potentially conflicting objectives (McNair, 1991). Audit cost is controlled using time budgets and previous findings suggest that in response to tight time budgets, auditors engage in high levels of URT and QTB. Research in this area is particularly relevant in the context of increased public scrutiny of auditors and calls for greater accountability and transparency (Report of the Review Group on Auditing, 2000).

RESEARCH QUESTIONS AND HYPOTHESES

The management control literature has examined the impact of control systems on organisational effectiveness in a wide range of organisations using various functional and dysfunctional behaviours as surrogate measures for organisational effectiveness (Chenhall, 2003). Previous studies of audit firms have been limited in scope, in terms of behaviours studied, participating firms and staff grades. Given the changes in audit methodology, the level of judgement needed at audit junior level has increased and this in turn may result in more pressure and scope for audit juniors to behave dysfunctionally. One objective of the current study was therefore to provide a more detailed and comprehensive analysis of the behavioural responses to cost control system pressures at both audit junior and senior levels in the context of the current audit environment. This investigation of behavioural responses needed to be conducted in a sufficiently open manner to detect previously unreported behaviours, but at the same time to establish the frequency of those behaviours across a large sample of seniors and juniors. The following research questions are addressed:

Q1: How do individual audit seniors and juniors respond to tight time budgets?
Q2: How frequently do these responses occur?

There has been a consistent flow of empirical findings on responses to the cost control system in audit firms since the early 1980s. These findings, along with changes in the audit environment, may have impacted on the firms' cost control systems and behavioural responses. The trend in the level of specified behaviours is therefore of interest, and a useful benchmark is the frequencies reported in Otley and Pierce (1996) from largely the same firms operating in a less buoyant economic climate. The following research question is therefore addressed:

Q3: How have the frequencies of the specified behaviours changed since the previous study in Ireland?

Many of the previous studies were confined to audit seniors as this was held to be the most pressurised position in the firm (Kelley and Seiler, 1982; Otley and Pierce, 1996). It would therefore be expected that dysfunctional behaviour would be higher and functional behaviour lower at audit senior level than at audit junior level, but this has not been examined in previous studies. The following hypothesis is therefore tested:

H1: Audit seniors will report a higher level of dysfunctional behaviour and a lower level of functional behaviour than audit juniors.

Previous research on business ethics found that female accountants are more likely to evaluate questionable actions as less ethical and are less likely to state an intention that they would perform the action than male accountants (Cohen, Pant and Sharp, 1998). Other research has found that US female accounting students have significantly higher moral reasoning abilities than their male counterparts (St. Pierre, Nelson and Gabbin, 1990; Shaub, 1994). Similar findings were reported from a comparison of female management accountants in Canada with their male counterparts (Etherington and Schulting, 1995). In a study of Irish chartered accountants, Clarke et al. (1996) found significantly higher levels of moral reasoning among female chartered accountants in Big Five firms than among their male counterparts. Previous studies of audit firms' control systems have not examined gender differences and the following hypothesis is therefore tested:

H2: Male auditors will report a higher level of dysfunctional behaviour and a lower level of functional behaviour than female auditors.

Anecdotal evidence suggests that the level of documentation on audit files has been reduced. Winograd et al. (2000) referred to the elimination of unnecessary documentation under the PwC audit approach, which applies the reperformance standard to determine the minimum documentation on audit files. The impact of reduced documentation will be specifically examined, as Alderman and Deitrick's (1982) results suggest that PSO is more likely to occur in areas where lower levels of documentation are required. A logical extension of this is to examine the relationship between PSO and perceived level of documentation within the same audit area. The following research hypotheses are therefore addressed:

H3a: Between audit areas the level of PSO will vary inversely with the level of documentation

H3b: Within the same audit area the level of PSO will vary inversely with the level of documentation

A number of different types of behaviours, reported as dysfunctional, have been examined in previous studies. While some of these behaviours, such as PSO, pose a direct and immediate threat to audit quality, the impact of others such as URT is likely to be more indirect and long term. It would therefore be of interest to know whether auditors under pressure tend to engage selectively in some of the

specified behaviours, or, alternatively, whether there is a correlation across the set of behaviours. Previous studies have not examined whether such a pattern exists and the following question is therefore addressed:

Q4: To what extent do individual forms of QTB correlate with one another?

DATA COLLECTION

Four of the Big Five firms in Ireland participated in the study[2] and, due to the sensitive nature of the topic, assurances of anonymity and confidentiality were given. Postal questionnaires were chosen as the preferred method of data collection, primarily because they facilitate broad coverage, are less susceptible to biases and are most appropriate when confidentiality and anonymity are required (Emory and Cooper, 1991). Preliminary work of an exploratory nature was needed in advance of questionnaire design, and conversational interviews (Patton, 1990) were held with five ex-auditors who had all left one of the Big Five audit firms less than one year previously. Ex-auditors were chosen as it was expected that they would be more likely to respond honestly to sensitive questions, given that they were no longer employed by the firms.

Following pre-testing (Dillman, 1978) and a pilot survey, the questionnaire was sent to all auditors in the second year of training (audit juniors) and third year of training (audit seniors) in the four participating firms. A total of 316 anonymous questionnaires were sent through the firms' internal mail systems between January and April 1999. Respondents were requested to mail completed questionnaires directly to the researcher, using postage-paid envelopes. A reminder letter was sent two weeks after the original mailing and an email was sent by a partner in each office reminding participants of the importance of replying. The overall response rate was 41.1 per cent (130 usable questionnaires returned), which is typical for survey research of this type (Dalton and Kelley, 1997). Tests for non-response bias were conducted as recommended in the literature and results showed no evidence to suggest the findings are distorted due to non-response bias[3].

FINDINGS

Demographics

An analysis of the demographic characteristics of respondents showing both number and percentage of respondents is contained in **Table 1**.

Differences in responses to each of the questions depending on the audit areas and audit firms in which respondents worked were tested using ANOVA analysis. Exploratory interviews indicated that the main type of audit included in the "other" category was the small company audit. Respondents in this category reported significantly higher levels of URT ($F = 2.677$, $p = .073$), which is consistent with Kelley and Margheim's (1990) finding that URT was greater on smaller

audits. They were also less likely to 'work harder and charge all time properly' (F = 3.242, p = .042) or 'work at normal pace and charge all time properly' (F = 3.965, p = .021) in response to tight time budgets than respondents in manufacturing or financial services. No other significant differences were found.

TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Gender		Grade		Audit work area		
M	F	Jnr	Snr	Financial services	Manufacturing	Other
68 (52%)	62 (48%)	65 (50%)	65 (50%)	46 (35%)	66 (51%)	18 (14%)

Regarding differences between audit firms, respondents in one of the four firms reported a significantly lower level of shifting time to a different client (F = 2.526, p = .06) and self-reported URT (F = 3.763, p = .013). No other significant differences were found, suggesting that the behavioural responses of auditors across the four firms are relatively homogeneous.

Behavioural responses

An overall question on the frequency of specified behaviours in response to tight time budgets was included in the questionnaire, and also more detailed questions on levels of URT, PSO and QTB. Firstly, respondents were asked to indicate the frequency of eight different responses to unattainable time budgets on a five-point scale ranging from one (never) to five (nearly always). This question is similar to one used by Otley and Pierce (1996) and Kelley and Seiler (1982), with some additional response categories based on exploratory interviews. **Table 2** compares results for each of the responses (in descending order of mean) to those obtained in the two previous studies.

Rankings based on mean score show that the three most likely responses are functional responses from the firm's perspective. A comparison with findings in Otley and Pierce (1996) indicates that respondents in this study are more likely to work harder and less likely to URT or reduce the quality of audit work in response to tight time budgets. This suggests an improving trend, though levels of dysfunctional behaviours could still be described as high. Current findings are more similar to Kelley and Seiler's (1982) study, although there is a noticeably lower percentage of respondents who reported requesting and obtaining an increase in the budget in this study.

None of the responses in **Table 2** are mutually exclusive, in the sense that an individual auditor's response can include a combination of behaviours. The study therefore examined specific behaviours relating to URT and QTB in more detail.

TABLE 2: BETWEEN-STUDY COMPARISON OF RESPONSES TO TIGHT TIME BUDGETS

Response to tight time budgets	Mean#	SD	Percentage who at least sometimes respond to tight time budgets in the indicated manner		
			Current Study	Otley and Pierce (1996)	Kelley and Seiler (1982)
Work harder but charge all time properly+	3.77	.96	93%	75%	90%
Work at normal pace but charge all time properly+	2.88	.89	71%	*	*
Request and obtain an increase in the budget+	2.14	1.07	33%	36%	57%
Underreport time by working on personal time^	2.10	1.10	37%	54%	33%
Shift chargeable time to a non-chargeable code^	1.94	.94	25%	40%	19%
Reduce the quality of audit work to meet budget^	1.91	.76	19%	36%	10%
Request and obtain a reduction in the audit programme+	1.82	.94	20%	*	*
Shift chargeable time to a different client^	1.45	.76	14%	12%	*

 # Scale: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = nearly always
** Category not included in previous study*
+ Considered a functional response to tight time budgets
^ Considered a dysfunctional response to tight time budgets

URT was measured by asking auditors directly how often they engaged in URT and how often auditors in general engage in URT on a scale from one (never) to five (nearly always) (**Table 3**). Almost 40 per cent of respondents admitted to engaging in the behaviour at least sometimes. This compares to 55 per cent of respondents in the Otley and Pierce (1996) study and 63 per cent in Lightner, Adams and Lightner's (1982) study. In response to the question on auditors in general, however, 84 per cent reported that auditors in general at least sometimes URT. The comparative figure in Otley and Pierce was 90 per cent and in Alderman and Deitrick (1982), 67 per cent. Further analysis of the current findings revealed that 70 per cent of respondents' self-reported levels of URT were lower than the

levels they reported for other auditors engaging in the behaviour. A paired sample t test provided further evidence of a significantly higher response for other auditors' URT than self-reported URT (t = 11.134, p = .000).

TABLE 3: FREQUENCY OF SELF-REPORTED URT AND OTHER AUDITORS' URT

Question	Nearly always	Often	Sometimes	Rarely	Never
How often do you understate chargeable time? (mean 2.23, SD 1.05)	1%	11%	27%	31%	30%
How often do you think auditors underreport chargeable time in order to minimise budget overruns? (mean 3.33, SD .90)	7%	38%	39%	13%	3%

Respondents were also asked to indicate the number of underreported hours, how the underreported hours were accounted for, and the number of hours correctly charged. Underreported hours amounted to 5.42 per cent of hours correctly charged (10.9 per cent in Otley and Pierce (1996) and 3.2 per cent in Kelley and Margheim (1990)). This was divided into underreported hours charged to non-chargeable codes (1.81 per cent), charged to other clients (.36 per cent) and work done on own time (3.25 per cent).

Regarding QTB, respondents were asked to *self-report* the frequency of their engagement in premature sign-off (PSO) and to report their perceptions about the frequency of PSO in general (taken from Alderman and Deitrick, 1982), both on a five-point scale ranging from one (never) to five (nearly always) (**Table 4**). A comparison of the mean scores for self-reported PSO in this study (2.02) to that found by Otley and Pierce (1996) (2.06) indicates little difference. Levels are considerably higher than those found in the US, where 75 per cent of respondents reported never having engaged in PSO (Malone and Roberts, 1996), and in France, where 92 per cent of respondents reported never having engaged in PSO (Herrbach, 2001).

Even though 28 per cent indicated that they never engaged in PSO in this study, when asked about their perceptions of the frequency of PSO in general, only 6 per cent indicated that PSO never occurred (5 per cent in Otley and Pierce's (1996) study) (**Table 4**). A paired sample t test provided evidence of a statistically higher score for other auditors' PSO than self-reported PSO (t = 7.785, p = .000).

A number of specific QTBs were listed in the questionnaire and respondents were asked to indicate the frequency with which they engaged in each behaviour on a scale from one (never) to five (nearly always). Certain of the behaviours (numbers 4, 6, 9, 10) were identified in either preliminary interviews or testing of

the questionnaire. **Table 5** sets out the results (Otley and Pierce's (1996) findings are shown in brackets).

TABLE 4: FREQUENCY OF SELF-REPORTED PSO AND OTHER AUDITORS' PSO

Question	Nearly always	Often	Sometimes	Rarely	Never
In your work as an auditor, do you ever sign off a required audit step not covered by another audit step, without completing the work or noting the omission of procedures? (mean 2.02, SD .85)	2%	1%	21%	48%	28%
In your experience, how often do auditors sign off audit steps not covered by other steps, without completing required procedures or noting the omission of such procedures? (mean 2.68, SD .80)	1%	12%	47%	34%	6%

TABLE 5: SUMMARY RESULTS FOR SPECIFIC TYPES OF QTB

		Mean#	SD	Percentage who engage in the behaviours at least sometimes
1	Accepted weak client explanations	2.41(2.18)	.69	43%
2	Made superficial reviews of client documents	2.38 (2.26)	.85	43%
3	Biased sample selection in favour of selecting less troublesome items	2.20 (*)	.90	36%
4	Relied on client work more than was considered appropriate	2.12 (*)	.82	31%
5	Failed to research an accounting principle	2.03 (1.94)	.88	29%
6	Copied documentation from the prior year without proper regard for changes in the control environment in the current year	1.98 (*)	.91	29%
7	Reduced the amount of work on an audit step below what was considered reasonable	1.92 (2.12)	.78	21%
8	Failed to complete procedures required in an audit programme step in ways other than those listed	1.78 (*)	.66	12%
9	Reduced the sample size specified in the audit programme without noting the reduction	1.69 (*)	.82	15%
10	Reduced the amount of documentation below that considered acceptable by the firm	1.57 (*)	.67	10%

 # Scale: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = nearly always
** Category not included in Otley and Pierce (1996)*

No respondent indicated that they never engaged in any of the behaviours listed and 84 per cent admitted to engaging in one or more of the specified behaviours at least sometimes. This compares to 64 per cent in Otley and Pierce (1996), though only four behaviours were included in that study. Levels of QTB are considerably higher than those found in the US by Kelley and Margheim (1990), where 46 per cent of auditors reported not having engaged in any of five behaviours listed. An overall measure of QTB was computed based on the behaviours in **Table 5** and the question on self-reported PSO. One of the behaviours in **Table 5** (copying of documentation from the prior year file) was not included in the pilot questionnaire; to ensure the pilot data was not wasted, this behaviour was excluded from the overall measure of QTB (**Table 6**).

TABLE 6: SUMMARY RESULTS FOR QTB MEASURE

Variable	Theoretical range	Actual range	Mean (SD)	Median
QTB	10–45	11–39	20.12 (4.93)	20

As measures of QTB included in previous studies were less comprehensive, it is not possible to compare results for the overall measure.

Grade of auditor

t tests were carried out to determine if mean score responses differed between seniors and juniors and the only significant result is shown in **Table 7**.

TABLE 7: DIFFERENCES IN MEAN SCORE RESPONSES BETWEEN GRADES OF EMPLOYEE

	t	Sig.	Mean# Junior	Mean# Senior
Request and obtain a reduction in the audit programme in response to tight time budgets	1.973	.051	1.98	1.66

 # Scale: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = nearly always

The frequency with which audit seniors reported requesting and obtaining a reduction in the audit programme in response to tight time budgets was significantly lower than that for audit juniors. The absence of other significant differences between staff grades suggests that the pattern of behaviour of audit juniors (who are employed by the firms for only a little over a year) is not significantly different from audit seniors and leads to a rejection of H1.

Gender differences

Gender differences were tested using t tests and significant results are shown in **Table 8**.

TABLE 8: GENDER DIFFERENCES IN RESPONSES

	t	Sig.	Mean# Female	Mean# Male
Shift time to a different client in response to tight time budgets	2.822	.006	1.26	1.62
Work harder but charge all time properly in response to tight time budgets	–2.480	.014	3.98	3.57
Make superficial review of documents	2.847	.005	2.16	2.57
Reduce documentation on file	2.791	.006	1.40	1.72
Mean of overall measure of QTB	1.911	.058	19.26	20.90

 # Scale: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = nearly always

The statistically significant results found for four behaviours and for the overall measure consistently indicate higher frequency of functional behaviour and lower frequency of dysfunctional behaviour for female auditors. The differences for the remaining behaviours were not statistically significant, and therefore it is concluded that H2 is only partially supported[4].

Documentation

Participants were presented with a list of the major areas on most audits and asked to indicate how often they believed PSO occurred in each area on a five point scale ranging from one (never) to five (nearly always) (based on Alderman and Deitrick, 1982). **Table 9** sets out the responses, ranked in descending order by mean score, with a comparison to Otley and Pierce (1996) in brackets.

MANOVA analysis for three or more related means revealed that differences in the frequency of PSO between audit areas were significant ($F = 11.582$, $p = .000$). The Bonferroni inequality test was used to detect where these significant differences occurred. Review/testing of internal controls and vouching of expenses had a significantly greater likelihood of PSO than other major areas of the audit. The mean scores in the two highest PSO areas were lower than those reported by Otley and Pierce (1996), suggesting that the level of PSO is not as concentrated in certain audit areas as was previously found. The least amount of PSO (which was significantly less than five of the other audit areas) was reported in the cash section.

TABLE 9: FREQUENCY OF PSO IN DIFFERENT AUDIT AREAS

	Mean# score	SD	Percentage of respondents who reported that PSO occurs at least sometimes
Review/testing of internal controls	2.8 (3.3)	.96	63%
Vouching of expenses	2.7 (3.2)	.90	58%
Physical stock count	2.4 (2.2)	.81	43%
Other stock verification work	2.4 (2.4)	.78	42%
Analytical review	2.4 (*)	.85	42%
Fixed assets	2.4 (2.4)	.80	39%
Sales	2.3 (*)	.76	39%
Creditors	2.2 (2.1)	.70	32%
Debtors	2.2 (2.1)	.70	31%
Cash	2.1 (2.0)	.69	26%

 # Scale: 1= never, 2= rarely, 3= sometimes, 4= often, 5= nearly always
** Category not included in Otley and Pierce (1996) study*

Survey respondents were also asked to indicate the amount of documentation in each audit section, on a five-point scale ranging from one (very little) to five (very substantial) (**Table 10**).

TABLE 10: AMOUNT OF DOCUMENTATION ON EACH AUDIT AREA

In the context of the current emphasis on minimum documentation and where that minimum can vary from section to section, please indicate the amount of documentation you typically see in each of the following areas.	**Mean**	**SD**
Review/testing of internal controls	3.5	1.14
Analytical review	3.4	1.15
Physical stock count	3.4	.96
Debtors	3.2	.89
Creditors	3.2	.96
Other stock verification work	3.2	.99
Sales	2.9	.95
Fixed assets	2.8	1.01
Cash	2.8	1.07
Vouching of expenses	2.5	1.07

MANOVA analysis for three or more related means showed a significant difference overall between amount of documentation in audit areas ($F = 15.418$, $p = .000$). The Bonferroni inequality test was used to detect where the significant differences occurred. The amount of documentation on review/testing of internal control was significantly greater than the five areas with the lowest means. Vouching of expenses had significantly less documentation than all the areas

except cash and fixed assets. Other significant differences were also found between areas with lower (cash, fixed assets and sales) and higher (analytical review and physical stock count) levels of documentation.

Spearman's rho was used to test for a significant correlation in ranking of mean scores for PSO (**Table 9**) and levels of documentation (**Table 10**) between audit areas and was not found to be significant (r_s = .265, p = .459). This suggests that differences in levels of documentation between audit areas are not significantly associated with the incidence of PSO and H3a is rejected. Pearson's correlation analysis was used to test for significant differences within the same audit area. A significant negative correlation was found between level of documentation and level of PSO in two areas: review/testing of internal controls (r = -.196, p = .026) and physical stock count (r = -.180, p = .042). This suggests that amount of documentation within these two audit areas is significantly associated with the incidence of PSO, providing some support for H3b.

Correlation between behaviours

The extent to which the same auditors engage in different types of QTB and also engage in both URT and QTB was examined by testing the correlations between the responses to each of the questions on QTB and the question on self-reported URT. **Table 11** sets out the correlation coefficients between URT, PSO, each QTB (taken from **Table 5** and shown as 1–10) and overall QTB.

Pearson's correlation coefficients indicate that self-reported URT is only significantly correlated with failure to research an accounting principle, copying of documentation from the prior year file and reductions in sample size. This indicates that the incidence of URT tends to move in tandem with the incidence of these three QTBs but not with other forms of QTB. Other than the correlation between reduction in the sample size and biasing of sample selection, all other measures of QTB were significantly correlated with each other. This indicates that the incidence of each form of QTB (other than those two) tends to move in tandem with other types of QTB. The overall measure of QTB was significantly correlated with each of the individual components of QTB but was not correlated with URT.

DISCUSSION

Before the findings are discussed it is important to consider the strengths and limitations of the study. The main strengths lie in the extensive exploratory work, the use of previously validated survey questions and the broad coverage achieved from inclusion of two grades of practising auditors and the participation of four of the then Big Five audit firms. The main limitations arise from the sensitive nature of the topic and the possibility of social desirability bias, the potential for non-response bias and the limited generalisability of the findings. Guidelines from the literature were followed to minimise the likelihood of social desirability bias and non-response bias, and extensive testing of responses reported earlier showed no evidence of the existence of non-response bias.

TABLE 11: PEARSON CORRELATION COEFFICIENTS BETWEEN DYSFUNCTIONAL BEHAVIOURS

	URT	PSO	1	2	3	4	5	6	7	8	9	10	QTB
URT	1.0												
PSO	.065	1.0											
1	.126	.318**	1.0										
2	.129	.410**	.425**	1.0									
3	–.150	.207*	.224*	.292**	1.0								
4	.167	.417**	.381**	.382**	.270**	1.0							
5	.270**	.361**	.273**	.359**	.245**	.295**	1.0						
6	.240**	.379**	.342**	.392**	.282**	.502**	.272**	1.0					
7	.119	.341**	.325**	.284**	.202*	.367**	.055**	.268**	1.0				
8	.050	.337**	.280**	.383**	.375**	.433**	.346**	.394**	.494**	1.0			
9	.223*	.221**	.186*	.308**	.088	.405**	.221*	.394**	.379**	.386**	1.0		
10	.012	.324**	.215*	.343**	.354**	.358**	.299**	.507**	.361**	.421**	.327**	1.0	
QTB	.069	.638**	.569**	.676**	.534**	.690**	.614**	.604**	.649**	.697**	.559**	.625**	1.0

*** Correlation is significant at the .01 level (two tailed)*

** Correlation is significant at the .05 level (two tailed)*

The absence of social desirability bias can never be proven, but to the extent that it may exist, it serves to strengthen the finding that high levels of dysfunctional behaviour exist in audit firms, as it is more likely that the behaviours are understated than overstated. Regarding the generalisability of the findings, the results relate to audit juniors and seniors in four of the then Big Five firms in Ireland and there is no reason to suggest that they cannot be generalised to the fifth Big Five firm. Although not strictly generalisable beyond these firms, the results may provide useful insights into time pressure induced behaviours in other organisations, including smaller accounting firms.

Levels of behaviours

The study identifies an expanded set of dysfunctional behaviours and provides evidence that high levels of these behaviours exist. No auditor indicated that they never engaged in any of the QTBs listed, 24 per cent indicated that they at least sometimes engaged in PSO, and 39 per cent indicated that they did at least sometimes engage in URT. The QTB measure in this study is a more comprehensive one than has been included in any previous study and includes previously unidentified behaviours, with over-reliance on client work found to be the most frequent of these "new" behaviours. Two of the behaviours identified relate to audit file documentation (copying of documentation from the prior year file without proper regard for changes in the control environment in the current year and reduction in the amount of documentation below that considered acceptable by the firm). Overall, the findings suggest that all respondents are sometimes forced to seek a compromise in the shaded area in **Figure 1** in order to balance the competing demands of cost and quality criteria.

The trends in the levels of the behaviours are complex. Compared to Otley and Pierce (1996), the reported levels of URT and QTB in response to tight time budgets have decreased and the levels of functional responses to tight time budgets have increased. A separate question on the level of self-reported URT (not specifically in response to tight time budgets) also showed a reduction since the previous study. There are, however, inconsistent findings relating to changes in the overall levels of PSO and QTB compared to changes in the responses to tight time budgets. The mean level of PSO is relatively unchanged, though there is a difference in spread of responses with a reduction in the percentage indicating that they never prematurely signed off a test (28 per cent compared to 40 per cent in Otley and Pierce). The levels of PSO found in both studies in Ireland are considerably higher than those found in recent studies in the US (Malone and Roberts, 1996) and France (Herrbach, 2001), which used the same instrument to measure PSO. As PSO is potentially the most serious form of QTB, these findings could have serious consequences given the changes that have taken place in the audit approach and increased concerns regarding audit quality. With regard to QTB, the level found in this study has increased since Otley and Pierce, though the greater number of behaviours measured in this study needs to be taken into account. When the four behaviours included in Otley and Pierce are analysed separately for this study, the composite mean is 8.7 compared to 8.5 reported in Otley and Pierce. Herrbach's

(2001) findings on French audit seniors revealed a mean score of 9.9 for the same four behaviours. It is noteworthy that French audit seniors in Herrbach's study engaged in a considerably lower level of PSO than other QTBs, but in this study the level of PSO was higher than many of the other QTBs.

Overall, the trends in the behaviours since the previous Irish study suggest that factors other than tight time budgets are driving levels of PSO and QTB, but having no effect on URT. The level of URT in response to tight time budgets and the overall level of URT both decreased. QTB in response to tight time budgets decreased but the overall level increased. The level of PSO is relatively unchanged in Ireland, though considerably higher than found in other countries.

Use of informer measures

The levels of URT and PSO reported for other auditors were significantly higher than the self-reported levels of the behaviours. Informer type measures are used for sensitive questions as it is considered that a respondent's perceptions of the behaviour of others is a good proxy for his/her own behaviour due to the potential for social desirability bias in self-reported measures of behaviour (Sudman and Bradburn, 1982). This would suggest that the levels of dysfunctional behaviours in audit firms are higher than the self-reported levels. Alternatively, auditors may genuinely believe that other auditors are engaging in the behaviours more frequently than they themselves and as a result feel subject to peer pressure to engage in these behaviours. Ponemon (1992) suggested that peer pressure in accounting firms may lead to dysfunctional outcomes because auditors may perceive that others are already behaving dysfunctionally or that their own performance is deficient in some way.

Influence of documentation

Alderman and Deitrick's (1982) findings suggested that dysfunctional behaviour is more likely to occur in areas where minimum documentation is required. In this study, auditors were not found to report significantly higher levels of PSO in audit areas with lower levels of documentation. However, within two audit areas (review/testing of internal controls and physical stock count) a significant negative correlation was found between level of documentation and level of PSO. This suggests that the level of PSO in these areas tends to be higher when a low level of documentation is maintained on file. Anecdotal evidence suggests that audit firms have reduced the amount of documentation on audit files in recent years in all sections of the audit. Consistent with this change, the pattern of PSO was found to reflect a more even spread over all the audit areas than that reported in previous studies.

Relationship between behaviours

Correlations between dysfunctional behaviours suggest that there are two identifiable categories of dysfunctional behaviours: direct QTB and indirect QTB. URT was significantly correlated with only those behaviours that could be described as less direct forms of QTB, such as reducing sample size, failing to

research an accounting principle, and copying documentation from the prior year file without proper regard for changes in the control environment in the current year. Whether URT is dysfunctional for the firm has already been questioned in the literature (McNair, 1991) and these findings suggest that indirect QTB may be an appropriate term for URT and other less direct QTBs. PSO was strongly correlated with all other QTBs. Other than the correlation between reductions in sample size and biasing of sample selection, correlations between all other measures of QTB were significant. These findings suggest that the choices available of whether to move from TQ to TQ_1 or from TC_1 to TC in **Figure 1** are viewed very differently by different auditors. Some auditors attempt to resolve the conflict in **Figure 1** through less serious forms of QTB by seeking to find the least damaging compromise. For those auditors, their perception may be that they are not lowering the quality line but instead are re-engineering the cost-quality line to CQF_1. Other auditors tend to resort to more serious forms of behaviour, designed to achieve cost targets (TC in **Figure 1**) by directly reducing quality (to TQ_1).

Grade of employee

There was a significant difference in the response to only one question between audit juniors and seniors, leading to a rejection of H1. This suggests that the behaviour patterns of juniors and seniors are not significantly different, even though seniors would have worked in the firm for a year longer and would be subject to the socialisation process over a greater period of time. The literature to date has suggested that the audit senior's role is the most pressurised in the audit firm and dysfunctional behaviour is likely to be highest at this level. These findings suggest that dysfunctional behaviour is not significantly lower at audit junior level, perhaps reflecting the increased responsibility at this level. The one behaviour that was significantly different was the frequency with which auditors request and obtain a reduction in the audit programme in response to tight time budgets, with audit seniors reporting a significantly lower frequency of this behaviour. Previous studies have referred to the 'undiscussable' (McNair, 1991) nature of time budgets. One explanation for this finding is that time pressure may become even less discussable as auditors progress upwards in the firm's staff structure and, as a result, audit seniors are less likely to request and obtain a reduction in the audit programme in response to tight time budgets. Alternatively, this finding may be due to a greater importance attached to audit seniors' work and audit managers may therefore be less likely to approve a reduction in the audit programme at this level.

Gender differences in responses

Male respondents reported higher levels of all dysfunctional behaviours than female respondents and significantly higher levels of four dysfunctional behaviours (including overall measure of QTB), thereby providing partial support for H2. Also, male respondents were significantly less likely to work harder in response to tight time budgets. Female auditors perceived higher levels of other auditors' URT and PSO than those perceived by males. These findings are

consistent with previous research on ethics which found that women viewed questionable actions as less ethical than men and expressed a lower likelihood that they would perform the actions than men (Cohen et al., 1998).

Ethical awareness and reasoning was outside the scope of the study and was not therefore examined. While the finding in relation to gender differences could reflect higher levels of moral reasoning by female auditors, other explanations are also possible, including greater honesty and openness by male auditors. The finding is, however, important, particularly in the context of potentially damaging behaviours and a profession in which senior positions are strongly dominated by males.

CONCLUSION

The findings provide evidence of a wide range of forbidden behaviours in Big Five firms in Ireland, and confirms that these behaviours have remained at a consistently high level over the last decade. No attempt is made to associate any particular consequences with these behaviours as this is outside the scope of the study, but in the context of recent negative publicity and the increased public scrutiny of auditors, findings showing that auditors admit to cutting corners on audit assignments are relevant for both the audit firms and the profession in general. In the post-Enron era, all auditor behaviour is likely to come under scrutiny and the consequences of any auditor behaviour, particularly in terms of public confidence, are increasingly difficult to predict. It has been previously argued that URT may not be a dysfunctional behaviour (McNair, 1991), and Herrbach (2002) has argued that even quality threatening behaviours may not be dysfunctional. However, given the current climate that surrounds auditing, it seems reasonable to conclude that these behaviours are potentially very serious.

The study contributes to the management control literature by providing a comprehensive analysis of behavioural responses to tight budgetary controls in relatively unprogrammed situations. It also provides relevant information for both firms and the broader profession in implementing effective control and governance procedures to maintain professional standards and public confidence. Given the threat to audit quality from many of the behaviours identified, further research is needed to examine the reasons why auditors engage in particular response behaviours. Previous studies (Malone and Roberts, 1996; Otley and Pierce, 1996) have identified relationships between a number of explanatory variables and dysfunctional behaviour; however, conflicting results have been reported for many of these variables. The influence of peer pressure on dysfunctional behaviours may be an additional explanatory variable and this has been given limited attention in previous studies (Ponemon, 1992). Given the complex findings on changes in the levels of specified behaviours, future research is needed to develop an understanding of the factors driving those changes. Lastly, even though high levels of dysfunctional behaviours have been found in previous studies for over 20 years, no research has been conducted on the consequences of those behaviours for the audit firms and profession in general.

NOTES

1 This paper forms part of a larger investigation of audit firms' control systems.

2 The other Big Five firm declined to participate, stating that it did not suit the firm to do so at that particular time.

3 In testing for non-response bias, Oppenheim (1966) recommended two tests to find out if a bias has been introduced into a study and if so, in what way; these were a comparison of respondents with non-respondents (in terms of characteristics not dependent on a response being received) and a comparison of early and late respondents (in terms of responses to the questionnaire). Two characteristics of non-respondents which were not dependent on the reply received were identified as gender and grade. Pearson Chi-square tests showed no significant differences in the distribution of gender (χ^2 = .678, p = .410) or grade (χ^2 = 2.587, p = .108) between respondents and non-respondents. In order to compare early and late replies in the current study, all replies received during the first two weeks after mailing were included in a category 'on time replies' (67 questionnaires) and the remaining replies were included in a second category 'late replies' (63 questionnaires). t tests and Pearson Chi-square tests were carried out to determine if the mean responses to questions on URT, PSO, QTB, grade, gender and audit area differed significantly between early and late respondents. None of the differences were statistically significant, as shown below:

COMPARISON OF EARLY AND LATE RESPONDENTS ACROSS SIX VARIABLES

Variable	*t Test/Chi-Square Test*	D.F.	Significance
PSO	−1.255	128	.212
URT	.815	128	.417
QTB	−1.406	128	.162
Grade	.031	1	.861
Gender	1.077	1	.299
Audit area	1.987	2	.370

4 Although the findings for the other behaviours were not statistically significant, a striking feature was that the same pattern was found for all the remaining behaviours, indicating a higher frequency of functional behaviours and a lower frequency of dysfunctional behaviours for female auditors.

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