

## Structure versus judgement in the audit process: a test of Kinney's classification

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### Keywords

Auditing, Accountancy firms

### Abstract

Sullivan suggests that the alternative audit approaches adopted by accounting firms be expressed in terms of "structure" and "judgement", with a division provided by the degree to which auditor judgement is replaced by structured quantitative algorithms. Cushing and Loebbecke attempt to operationalise this division by examining the guidance provided to practising auditors by their firms. Kinney extends this study by classifying accounting firms as "structured", "intermediate" or "unstructured" in terms of their audit methodologies. Provides a test of Kinney's classification by examining the tolerance of accounting firms to accounting policy choices which have an income effect in their clients' financial statements. Argues that those firms with a structured audit approach will manage audit risk through a greater reliance on mechanistic procedures, resulting in a greater tolerance of income manipulation. The results are confirmatory for the period under study, but evidence is provided to suggest that audit firms have subsequently become less diversified in their approach.

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### 1 Background

Organisational theory (e.g. Burns and Stalker, 1961; Mintzberg, 1979) has suggested the "machine" and the "organism" as analogies forming a basis for refined reasoning. In auditing, these analogies have been discussed in terms of the concepts of "structure" and "judgement" (Dirsmith and Haskins, 1991).

Auditing has variously been regarded as a well structured and mechanistic process (e.g. Joyce and Libby, 1982) or as a judgemental process in which the audit is client dependent (e.g. Dirsmith and McAllister, 1982). Stringer (1981), among others, observes the trend towards increasing structure in auditing decision making with the use of quantitative methods and well documented procedures. Sullivan (1984) highlights the two camps into which auditors fall:

- 1 those who favour structured quantitative algorithms over auditor judgement; and
- 2 those who believe that such quantification is always unjustified because considerable professional judgement will always be required.

Cushing and Loebbecke (1986) explore this distinction with an empirical study of the guidance provided by accounting firms to their practising auditors. Their study of the policy manuals of 12 large public accounting firms revealed dramatic differences between firms in terms of the degree of "structure" apparent in their audit methodologies, defining "structure" as "a systematic approach to auditing characterised by a prescribed, logical sequence of procedures, decisions and documentation steps, and by a comprehensive and integrated set of audit policies" (p. 32).

Cushing and Loebbecke noted that all firms placed a good deal of emphasis on

pre-engagement planning and internal control questionnaires, but that beyond that they might be categorised as highly structured, semi-structured, partially structured and unstructured, with the extreme positions characterised by, respectively:

- quantification of audit risk; detailed comprehensive guidance; shift of audit decision making from the auditor to the central firm; and
- no specification of the level of detail, integration or quantification.

Cushing and Loebbecke (1986) recommend that future research be directed towards identifying the differences in firms associated with structure and the consequent impact of alternative audit approaches. This recommendation provides a motivation for this study.

Kinney (1986) extends the work of Cushing and Loebbecke (1986), noting that the unstructured approach is associated with more judgement considerations being left in the hands of the field auditor. Kinney uses the results of an independent survey together with those from the Cushing and Loebbecke study to classify 22 auditing firms (the, then, "Big eight" and 14 smaller firms) as follows:

- 1 Structured:
  - Deloitte, Haskins and Sells (DHS);
  - Peat, Marwick, Mitchell (PMM);
  - Touche Ross (TR);
  - two non-Big 8 firms.
- 2 Intermediate:
  - Arthur Andersen (AA);
  - Arthur Young (AY);
  - Ernst & Whinney (EW);
  - three non-Big 8 firms.
- 3 Unstructured:
  - Coopers & Lybrand (CL);
  - Price Waterhouse (PW);
  - nine non-Big 8 firms.

It is this classification which forms the basis of the test conducted in this study.

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The degree of audit structure has been found to be associated with the financial disclosure patterns of clients. Morris and Nichols (1988) show that structured firms are more consistent in their treatment of accounting principle consistency exceptions; Williams and Dirsmith (1988) show that structured firms are more timely in their release of client financial statement disclosures. This study extends this area of research by examining the impact the degree of audit structure has in individual firms on the tolerance of income increasing/reducing accounting policy choices among client companies. This paper argues that audit structure impacts on such tolerance via perceptions of audit risk, the risk of incorrectly attesting that a client's financial statements are true and fair.

Dirsmith and Haskins (1991) note that audit risk as a planning construct is receiving increasing attention in the literature (e.g. Fellingham and Newman, 1985) and that high degrees of audit risk are associated with increased evidence gathering to support the audit opinion (e.g. Graham, 1985).

Contemporary auditing standards and the literature (e.g. Graham, 1985; Dirsmith and Haskins, 1991) recognise that internal control risk and inherent risk are interdependent and must be considered together in planning an audit so as to determine the desired detection risk. It has been suggested that audit structure may affect the assessment of inherent risk, whereby a more thorough evaluation of all the important quantitative variables will produce consistent auditor judgements (e.g. Joyce and Libby, 1982). Sullivan (1984) puts forward the opposing view, by suggesting that financial reporting requirements are too complex to be represented satisfactorily by quantitative measures alone, and that informed auditor judgement will always be required.

The response of audit firms to the ambiguity of approaches to inherent risk assessment suggests that "audit firms which vary in terms of structure would orient differently to such an assessment" (Dirsmith and Haskins, 1991, p. 75).

Dirsmith and Haskins conclude that researchers can usefully study auditing with reference to the public accounting firms' underlying root metaphors and world theories. Their study focused primarily on differences relevant to the assessment of audit risk using the "mechanistic world" and "organic world" hypotheses.

The mechanistic world hypothesis sees auditing as a structured process that emphasises parts, priority relations within

the parts, and the dominance of quantitative versus qualitative components of the audit judgement. Alternatively, the organic world hypothesis views auditing as a judgemental process emphasising holistic integration with more qualitative considerations forming part of the judgement process.

Dirsmith and Haskins postulate that: "... auditors' perceptions of inherent risk assessment, as well as the language they use to describe this assessment for specific clients, may be influenced by the world theory subscribed to their respective audit firms.

Further, they state that mechanistic, structured audit firms would tend to discount their focus in audit areas that are qualitative in nature and less subject to analytic evaluation. Accordingly, such firms would be likely to focus on those parts of the audit that are "relatively structured, programmable, concrete and familiar...". Conversely, less structured firms are perceived to have a more balanced focus on both quantitative and qualitative forms of evidence.

These hypotheses confirm a nexus between structure of the firm and the attitude toward risk assessment. We perceive that auditors in structured firms place more reliance on their relative sophistication in, for example, outcomes of analytical review strategies, (including analysis of quantitative non-financial indicators), sampling methodologies and greater strategic focus in the global audit approach.

We perceive, therefore, that structured firms, while recognising the relative importance of assessment of both qualitative and quantitative risk factors in planning and conducting an audit, are able to reduce the emphasis on qualitative assessments due to their reliance on identifying risk factors using strategic quantitative analysis.

It should be recognised that structured firms deploy substantial resources into technical divisions that produce high quality generic research and technical data for use by audit field staff (e.g. industry statistics, generic qualitative industry risk assessments and programs, contemporary technical issue papers, circulars and so on). We perceive the availability of such data is significant in structured audit firms' assessment of the overall risk involved in a client. It is this reliance which leads to the proposition that structured firms may be more tolerant of accounting choices selected by audit clients for the purpose of income "smoothing" or "manipulation". These firms have resources that affect their decision making about the overall audit risk and ramifications of offering an inappropriate

audit opinion. It is not suggested that the fundamental audit approach of structured firms is flawed, but the focus of structured firms seems to be more on the longer term view of audit risk of client failure and short term tolerance of income manipulation.

In order to reach these same conclusions, it is contended that unstructured firms require a greater level of investigative qualitative assessment, and may be less tolerant of income manipulation by having access to more reliable qualitative data.

Cushing and Loebbecke (1986) confirm a correlation between highly structured firms and reduced opportunities to apply professional judgement. We hypothesise that greater reliance on features of the audit firm structure (including detailed audit manuals, procedures and strategies) narrows the relative depth of qualitative assessment and broadens the tolerance to income manipulation ("income smoothing") perceived by the firm as non-threatening to audit risk. This proposition is tested by exploring the degree to which the clients of Big 8 audit firms (classified according to Kinney (1986)) make accounting policy choices which impact on income. The circumstance not controlled by this experiment is the nature of the audit client portfolio, as certain audit firms attract clients that engage in certain accounting policy settings.

### Research method

Annual reports of all 463 West Australian public companies were examined for financial years ending 1987 and 1988 to determine the incidence of accounting policy change. Those companies, numbering 96 in all, with no 1987 and/or 1988 accounts available, either because of incorporation post 30 June 1987, failure prior to 30 June 1988, or missing data have necessarily been eliminated from the study. The financial years under study corresponded with the publication of Kinney's classification and provided an opportunity to investigate activities of Big 8 firms immediately prior to a series of mergers that reduced the numbers of the major companies.

A change in accounting policy from one financial year to the next was defined as a change in disclosed policy choice. Although mandatory changes were identified only the effects of discretionary changes were examined. These changes were determined by reference to the auditors' report and to the Notes to the Accounts (and in particular the note describing Significant Accounting

Policies required by Australian Accounting Standard AASB 1001).

Every disclosed accounting change by the firms under observation was treated as an independent case, and data on all changes were collected, regardless of impact. After analysis, the changes were classified into five groups:

- 1 change in response to a qualified audit report;
- 2 mandatory changes in response to legislation and new/revised accounting standards;
- 3 changes with indeterminate income effect (even, though a clear balance sheet impact may be apparent);
- 4 income increasing changes, including changes relating to normal and abnormal operations and changes which resulted in expenses being treated as extraordinary items, even though they might reasonably have been included as normal/abnormal;
- 5 income reducing changes resulting in reduced after tax earnings.

Comparison of the independent assessments of accounting policy change made by the investigators resulted in substantial agreement of classification. A complete reclassification undertaken by the investigators at a three-month interval was substantially confirmatory, with only 4 per cent of changes being reclassified.

For all companies in the dataset the following information was also collected:

- auditor (where a change of auditor had occurred over the period, that observation was removed from the population);
- status (defined as "failed", including "failing", or "non-failed");
- size, measured by total assets; and
- industry group

The information was gathered to test the possible impact of these variables on the sample results. It was considered that the hypothesised results would be strengthened if the allowance of changes to accounting policies is not identifiably linked to auditor change, nor influenced by the financial condition, size or industry of the company being sampled.

### Results

The analysis of the population of the 367 companies for which complete data were available revealed that 176 companies made accounting policy changes, resulting in a total of 278 changes, as follows:

- Response to audit qualification - nine.
- Mandatory change - 109.

- Indeterminate income effect – 52.
- Income increasing – 79.
- Income reducing – 29.

The accounting policy changes were distributed across companies in accordance with Table I.

Of the nine companies with three or more discretionary accounting policy changes, seven were audited by Big 8 companies, five were from the extractive industry, only one was a “large” company and four “small”. Of the 28 changes made, half were income increasing.

The detailed figures in Table II enable a number of statistical evaluations to be made concerning the association of choice of auditor with the distribution of accounting policy changes. The tests described below in Tables III, IV, V and VI are all based on data drawn from Table II.

The Big 8/non-Big 8 split is a significant factor in determining the incidence of accounting policy changes. Table III gives  $p < 0.002$  when all changes are considered, while Table IV yields  $p < 0.01$  when mandatory changes are excluded.

Among Big 8 firms, the Kinney classification appears to have a bearing on

accounting policy changes. In Table V, the numbers of policy changes are indexed against the three levels I, II, III of the Kinney classification of Big eight accounting firms. Although a general chi-squared test is not significant ( $\chi^2_2 = 1.5$ ), when the natural ordering of the Kinney classification categories is considered, a test based on Kendall's tau, counting numbers of concordant and discordant pairs of observations, yields  $z = -1.68$  and  $p < 0.05$ . For details of the Kendall tau test see Brown (1988) and for more on the general topic of testing contingency tables with ordered categories, see Best and Rayner (1996), Beh and Davey (1999), and references therein.

The conclusion in Table V is strengthened considerably if mandatory accounting changes are excluded. Table VI has the details. Even a general test which ignores the ordering of the Kinney classification categories yields  $\chi^2_2 = 7.84$ ,  $p < 0.0$ , while a Kendall tau test which considers the ordered Kinney categories gives  $z = 2.295$ ,  $p = 0.011$ .

Further analysis can be carried out on the data in Table II to investigate the association of “income changing events” with either the Big 8/non-Big 8 categorization, or the Kinney classification of accounting firms. Because

**Table I**  
Distribution of accounting policy changes across companies

Total accounting policy changes	Number of companies	Mandatory changes	Number of companies	Discretionary changes	Number of companies
0	191	0	276	0	249
1	105	1	73	1	77
2	48	2	18	2	32
3	17			3	8
4	4			4	1
5	2				
<b>Total companies</b>	367	Total companies	367	Total companies	367
<b>Total changes</b>	278	Total changes	109	Total changes	169

**Table II**  
Auditor impact on accounting policy change

Auditor	Companies			Response to			Income increasing		Income reducing	Total
	Number of companies	No changes	Policy changes	Mandatory	AQ	Neutral	Above line	Below line		
Deloitte (DHS)	15	6	9	7	1	3	1	3	2	17
Peat Marwick (PMH)	18	9	9	3	0	3	2	3	2	13
Touche Ross (TR)	26	8	18	11	0	2	8	9	2	32
Arthur Andersen (AA)	43	18	25	11	4	5	9	4	5	38
Arthur Young (AY)	38	19	19	9	0	5	7	0	3	24
Ernst & Whinney (EW)	32	15	17	11	0	6	7	6	2	32
Coopers & Lybrand (CL)	25	13	12	11	1	2	1	0	1	16
Price Waterhouse (PW)	18	9	9	8	0	4	0	0	1	13
<b>Big 8</b>	215	97	118	71	6	30	35	25	18	185
<b>Non-Big 8</b>	152	94	58	38	3	22	8	11	11	93
<b>Total</b>	367	191	176	109	9	52	43	36	29	278

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multiple "income changing events" (i.c.es) can be associated with single firms, a different form of statistical test is required.

However, a simple analysis results if the standard Poisson model is applied to the occurrence of i.c.es. Observed cell counts are realisations of independent Poisson random variables whose parameters are products of an underlying Poisson rate with the number of firms contributing to the count. Then, using the standard fact that the distribution of a collection of Poisson variables conditional upon their sum is just multinomial (or binomial for just two

variables), the data structure reduces to testing a single row of observed counts against an expected pattern. For this situation, a goodness-of-fit test is standard.

For example, for the "Big 8" versus "non-Big 8" comparison, the data in Table II yields (Table VII).

For testing across the Kinney classification, the data in Table II yields, Table VIII.

Table IX reports substantially the same data when the auditors have been aggregated according to Kinney's (1986) classification. The distinction between Groups 1 and 2 ("structured" and "intermediate") and Group 3 ("unstructured") are considered highly significant; 42 per cent of the changes allowed by Group 1 auditors are income increasing, compared to 35 per cent of those allowed by Group 2 auditors, and only 3 per cent by Group 3 auditors. The non-Big eight auditors are excluded from the classification; the majority (Kinney's analysis reports 75 per cent) would be members of Group 3, and even were they to be included as such, the distinction between the extremes of the classification would remain remarkable. In addition, Table IX shows that Group 3 allowed only 7 per cent of income reducing changes, compared to 10 per cent for Group 1 firms and 11 per cent for Group 2 firms.

The analysis of above the line and below the line changes does not take into account changes to the concept of extraordinary items since 1986; classification of changes as extraordinary items is now comparatively rare.

**Table III**

Incidence of policy changes, and accounting firm classification

	No changes made	Some changes made	Totals
<b>Big 8</b>	97	118	215
<b>Non-Big 8</b>	94	58	152
<b>Totals</b>	191	176	367

Notes:  $\chi^2_1 = 9.98$ ;  $p = < 0.00$

**Table IV**

Accounting firm classification and incidence of policy changes, excluding mandatory changes

	No changes made	Some changes made	Totals
<b>Big 8</b>	97	47	144
<b>Non-Big 8</b>	94	20	114
<b>Totals</b>	191	67	258

Notes:  $\chi^2_1 = 7.43$ ;  $p = < 0.0$

**Table V**

Incidence of policy changes and Kinney classification of Big 8 accounting firms

Kinney classification	No changes made	Some changes made	Totals
<b>I (DHS, PMH, TR)</b>	23	36	215
<b>II (AA, AY, EW)</b>	52	61	152
<b>III (CL, PW)</b>	22	21	367
<b>Totals</b>	97	118	215

Notes: Kendall tau test for ordered categories contingency tables gives  $z = 1.68$ ;  $p < 0.05$

**Table VI**

Incidence of policy changes and Kinney classification of Big 8 accounting firms, omitting mandatory changes

Kinney classification	No changes made	Some changes made	Totals
<b>I (DHS, PMH, TR)</b>	23	15	38
<b>II (AA, AY, EW)</b>	52	30	82
<b>III (CL, PW)</b>	22	2	24
<b>Totals</b>	97	47	144

Notes: Kendall tau test for ordered categories contingency tables gives  $z = 2.295$ ;  $p < 0.011$

## Discussion

The results clearly show that those audit firms classified as "judgemental" in the Kinney (1986) categorisation are associated with far fewer client firms that report accounting policy choices whether these increase or decrease reported income. Within the then Big 8, around whom this investigation has been conducted, Coopers & Lybrand and Price Waterhouse appear to be less tolerant of income manipulation through accounting policy choice than their fellow auditors. However, several other factors may be contributing to the observed outcomes of this study, and they are considered here.

A number of authors (e.g. Morse and Richardson, 1983) have suggested that size of company and industrial sector will impact on the incidence of income increasing accounting policies. Eichenseher and Danos (1981) note the specialisation of auditors in particular industries. It might, therefore, be that accounting policy changes are

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**Table VII**  
Comparing "observed" with "expected" yields

	Big 8	Non-Big 8	Totals
Number of i.c.es	78	30	108
Number of accounting firms	215	152	367
Expected numbers	63.270	44.730	108

Notes:  $\chi^2_1 = 8.27$ ;  $p = 0.00$

**Table VIII**  
Testing across Kinney classification

Kinney classification	Group I	Group II	Group III	Totals
Number of i.c.es	32	43	3	78
Number of companies	59	113	43	215
Expected numbers	21.405	40.995	15.600	78

Notes:  $\chi^2_2 = 15.52$ ;  $p = 0.000$

There is little point in applying an ordered categories test because the result is already highly significant

**Table IX**  
Classification of income increasing/reducing changes 1986

Kinney classification	Income increasing		Income reducing	Total changes	Number of companies
	Above line	Below line			
Group I	11	15	6	62	59
Group II	23	10	10	94	113
Group III	1	0	2	29	43
Big 8	35	25	18	185	215
Non-Big 8	8	11	11	93	152
Total	43	36	29	278	367

associated with company size or industry, rather than auditor. Table X details the distribution of companies by size, across auditors and auditor groupings.

There is some, though weak, evidence suggesting that across Big 8 auditors, an association exists between Kinney groupings and the size of client companies. While a

conventional chi-squared test in Table XI is not significant, it can be noted that both classifications are ordinal (i.e. client size, and Kinney classification) and a Kendall tau test for association yields  $z = 1.546$ ,  $p = 0.06$ . This  $p$ -value approaches significance, and raises the question that Kinney classification may influence accounting policy changes

**Table X**  
Auditor and client size

Auditor	Size			Total
	Small (TA < \$10m)	Intermediate	Large (TA > \$60m)	
Peat Marwick	11	4	3	18
Touche Ross	15	9	2	26
Deloitte	5	7	3	15
Auditor group I	31	20	8	59
Arthur Andersen	26	13	4	43
Arthur Young	15	13	10	38
Ernst & Whinney	16	14	2	32
Auditor Group II	57	40	16	113
Coopers & Lybrand	10	7	8	25
Price Waterhouse	6	7	5	18
Auditor Group III	16	14	13	43
Total	104	74	37	215

indirectly through being associated with the sizes of client companies. However, this can have only a limited explanatory effect, because the strength of association throughout Tables III-VI is stronger than the association shown in Table XI.

The distribution of companies across the Big 8 auditors in this sample does not appear to be influenced by industry grouping of client company; the data in Table XII, after combining the categories leisure and non-bank financial institutions in order to produce expected values, yields  $\chi^2_{10} = 9.68$  not significant.

Cravens *et al.* (1994) suggest that firms such as Price Waterhouse and Coopers & Lybrand have a client base which is associated with lower market risk, greater profitability and lower leverage ratios. It might, therefore, be

that accounting policy changes are associated with companies and industries with inferior financial performance. The z-score measures of financial distress, due to Houghton and Smith (1991), and modelled specifically for the West Australian business environment, were used to compare financial performance across auditor and industry groupings.

Table XIII details differences in mean financial performance across the seven industry groupings.

The non-bank financial institutions and extractive sectors are apparently the top performers, while the financial and investment sector exhibits the greatest financial distress. The data in Table XIII can be used to construct an ANOVA to test for different z-scores of financial distress across industry groupings (Table XIV).

**Table XI**

Auditor and client size totals

Kinney classification	Size			Total
	Small	Intermediate	Large	
Group I	31	20	8	59
Group II	57	40	16	113
Group III	16	14	13	43
Total	104	74	37	215

Notes: A Kendall's tau test of association yields  $z = 1.546$ ;  $p = 0.06$

**Table XII**

Distribution of auditor across industry groupings

Industry grouping	Auditor			Total
	Group I	Group II	Group III	
Research and consultancy	7	11	2	20
Retail and distribution	8	13	6	27
Manufacturing and construction	5	16	1	22
Financial and investment	10	16	10	36
Extractive	27	45	19	91
Leisure	2	6	2	10
Non-bank financial institutions	0	6	3	9
Total	59	113	43	215

**Table XIII**

Industry grouping and financial performance

Industry grouping	Number of companies	z-score	
		Mean	SD
Research and consultancy	20	0.730	2.279
Retail and distribution	27	0.716	2.029
Manufacturing and construction	22	0.202	2.721
Financial and investment	5,136	-0.314	2.777
Extractive	10,991	0.724	1.728
Leisure	1,110	-0.019	1.508
Non-bank financial institutions	119	1.531	1.186
Total	215	0.482	2.141

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Thus there is evidence suggesting that financial performance differs across the industry groupings represented. But variation in financial performance apparently does not extend across the Kinney auditor classification. Table XV details differences in mean financial performance across auditor and auditor grouping.

The data in Table XV can be used to construct an ANOVA to test for differences in mean z-scores of financial distress across the Kinney auditor groupings (Table XVI).

The ANOVA in Table XVI is not significant. However, improved financial performance is apparent as we progress from Group 1, through Group 2, to Group 3; however, the variability in Group 2 makes the intra-group differences in z-scores so large relatively that the differences between the groups are not statistically different. On

an individual auditor level, mean z-scores are highest for Arthur Young (Group 2), Coopers & Lybrand (Group 3) and Deloitte (Group 1) so there is no direct correspondence between the Kinney classification of audit structure and financial performance of client.

It might be argued that the outcomes of this research lack external validity, in that they are applicable only to Western Australia, and to a period in the late 1980s when the Big 8 still prevailed. Both issues are investigated below.

Smith (1998) re-evaluates the UK data reported by Smith (1992) to determine the link between auditor and 12 accounting manipulation techniques undertaken by the 208 largest quoted companies by market capitalisation. Smith (1998) identifies seven of these techniques to have a clear income effect, and explores the auditor connection for the 185 companies then associated with the Big 6 auditors. He notes that KPMG are associated with greater than average, and both Price Waterhouse and Coopers & Lybrand less than average, employment of pre-acquisition write-downs, and Price Waterhouse with less than average employment of extraordinary and exceptional items. Overall it is apparent that KPMG have significantly more manipulations than anticipated, and Coopers & Lybrand significantly fewer, but otherwise the direction of the auditor-effect is less clearly specified than in the findings of the present study. Certainly the 1992 UK data provides less support for the 1987 Kinney classification than the foregoing analysis.

Smith and Kestel (1999) conduct a time series analysis of accounting policy changes over the period 1988-94 for the same West Australian companies that provide the dataset for this study. However, only 49 companies survive independently across the whole period, and they make a relatively small number of policy changes (67 in all, but only 40 for the "Big" group of auditors). The limited number of observations restrict the level of statistical analysis possible, but it is still clear that the auditor differences apparent in 1987 are not nearly so prominent across the subsequent period. The Group 3 (unstructured) auditors, Price Waterhouse and Coopers & Lybrand, had far fewer income reducing accounting policy changes than anticipated, but in other respects the three groupings are indistinguishable.

A number of studies have emphasised the importance of corporate image for the well-being of accounting firms. Scott and Van der Walt (1994) suggest that corporate image is the most important characteristic guiding

**Table XIV**  
ANOVA to test for differences in financial distress across industry groupings

Source	df	Analysis of variance		F
		SSQ	Mean SQ	
Sectors	6	111.064	18.51	2.95 ( $p < 0.01$ )
Error	267	1,647.436	6.27	
Total	273	1,785.5		

**Table XV**  
Auditor and client financial performance

Auditor	Number of companies	z-score	
		Mean	SD
Peat Marwick	18	0.784	1.590
Touche Ross	26	-0.130	1.349
Deloitte	15	0.749	1.156
Auditor Group I	59	0.372	1.432
Arthur Andersen	43	-0.203	3.399
Arthur Young	38	0.018	1.746
Ernst & Whinney	32	0.790	1.621
Auditor Group II	113	0.489	2.524
Coopers & Lybrand	25	0.784	1.935
Price Waterhouse	18	0.379	1.798
Auditor Group III	43	0.615	1.868

**Table XVI**  
ANOVA to test for differences in mean levels of financial distress across the Kinney auditor classification

Source	df	Analysis of variance		F
		SSQ	Mean SQ	
Auditors	2	6.872	3.436	< 1, not significant
Error	271	2,699.5	6.273	
Total	273	1,706.82		



firm selection by clients; Beattie and Fearnley (1995) find that "reputation/quality" is their most important characteristic, Armstrong and Smith (1996) that professionalism is the most important aspect of service quality to the clients of Big 6 accountants. Image is therefore an important component of accounting/auditing firms in their pursuit of diversity and product differentiation. Moizer (1998) surveyed financial directors of UK companies in both 1987 and 1996 to develop a corporate personality for the big accounting firms. He looked at a number of phrases used to describe accounting firms, and employed a semantic differential to measure the degree to which directors associated with each description. The observed diversity among firms in 1987 (much of it attributable to the extreme perceptions associated with Arthur Andersen and Deloitte, Haskins and Sells, allowed firms to be clustered into a four-group structure based on corporate image: Group A (CL, PW, KPMG); Group B (EW,AY); Group C (DHS, TR); Group D (AA). A grouping close to the Kinney classification of the same year.

The corresponding 1996 survey shows Arthur Andersen still to be perceived as the "most different" firm to its competitors, but that much of the diversity has evaporated, so that a revised clustering is more appropriate: Group A (CL, PW, KPMG); Group B (EY, D&T); Group C (AA).

The reduction in the diversity among the world's accounting firms 1987-96 in the Moizer study mirrors the findings from the studies of accounting policy changes above. The number of major players has fallen from eight to (currently) five, and at the same time the profiles of surviving firms have come together. All of the studies cluster (C&L and PW) and (EW and AY) together, suggesting a closeness of corporate cultures which might facilitate successful merger.

The findings of these studies may have implications for auditor choice, auditor switching and future merger activity among auditors, and warrant further research focusing on the activities of the Big 5 worldwide.

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