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QUALIFIED AUDIT REPORTS AND COSTLY CONTRACTING

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This paper investigates the financial characteristics of the population of listed Singaporean companies receiving first-time qualified audit reports. It develops and tests hypotheses which take into account the costly contracting implications of a qualification for both the auditor and client. A matched pair design is used as a control. Results show that firms receiving qualified reports are significantly less profitable and liquid and have significantly more debt than the control in the year of qualification. Profitability and liquidity are shown to have declined in the four-year period up to the qualification, while debt levels have increased. These results may partially explain why the general (overseas) no-effect result from share market announcement date studies exists; the qualification per se is a dated signal of financial deterioration that has existed for at least the previous four years. Qualification is also significantly associated with auditor type and ownership of the firm, and is also dependent upon whether or not the firm has revalued its assets or changed accounting methods. It is more likely that a qualified report will be issued by a "non Big 8" auditor in Singapore to a firm which has a higher proportion of the equity owned by the management. Qualified firms are more likely to have revalued assets and changed accounting methods to increase income than the control group. The strength of the results is also shown to depend on the nature of the qualification. Companies receiving "severe" qualifications (ie going concern, not true and fair, and unable to form an opinion) have far more significant differences than their pairs compared with those firms receiving "moderate" or "other" qualifications.

1. INTRODUCTION

This paper investigates the financial characteristics and other relevant attributes of the population of first-time audit qualifications[1] issued to Singapore-listed companies. A

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1 A first-time audit qualification is defined as a qualification where the previous report was clean, or a qualification which is different from that of the previous year.

rational economic choice framework is adopted. Within the costly contracting literature, auditors and their reports are regarded as one of the main mechanisms whereby the potential conflict of interest between shareholders (principals) and managers (agents) can be controlled (see for example, Watts & Zimmerman, 1986). An audit qualification indicates, in many cases, a major difference of opinion on the measurements managers use in stewardship reporting to shareholders, debtholders and other external parties.

The independent opinion to shareholders and other external report users states that managers' accounts may be, in some respect, not true and fair. This indicates that some aspect of stewardship is being brought into question. Managers, not being prepared to remedy or unable to remedy the concern of the auditor, receive a qualified opinion. Presumably, for those cases involving accounting disputes, the perceived benefits of reporting using the disputed accounting treatment are judged by rational managers to outweigh the costs associated with a qualified report. The costs relevant to this decision are likely to vary as the financial condition and ownership structure of the firm (and the agency costs it faces) change.

An audit qualification can also be modelled as an economic decision by the auditor (Antle, 1982; Ng & Stoeckenius, 1979; Smith et al, 1987; Nelson et al, 1988). Again a trade-off is involved. If an audit report is qualified there is an increased probability that the auditor will lose the client. If a clean report is issued there is an increased probability that the auditor will face litigation by owners and others.[2] The costs and benefits involved in this decision also change as the financial health of the client changes. Further, the capacity to absorb shareholder litigation is a function of the size and professionalism of the auditor.[3] Nelson et al (1988) have developed a model of particular relevance to this study in which the choices made by auditors determine, among other things, the level of effort by auditors and the accuracy of financial reporting by firms in different industries. Also of relevance to this paper is the empirical literature which is concerned with the prediction of audit qualifications (Mutchler, 1985; Dopuch et al, 1987; Koh et al, 1988; Lee et al, 1992).

Our research can be distinguished from these prior studies in a number of ways. First, we restrict our analysis to first-time qualifications because repeat qualifications for the same reason have less information content (ie they are more easily predicted). We also use a broader dataset than those used in previous Singaporean studies. Second, we develop theoretical justifications for the variables included in our analysis, and we predict the direction of differences in our sample and control group for these variables. Third, we analyse an

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2 For evidence that qualified opinions lead to auditor switches see Schwartz and Menon (1985), Knapp and Elikai (1988), Knapp (1985), Fried and Schiff (1981) and Chow and Rice (1982). The role of audit quality in signalling firm value in initial public offers is discussed in Titman and Trueman (1986) and Datar et al (1991).

3 Kothari et al (1988) describe the substantial expansion in classes of individuals to whom auditors are liable in the United States, and the significant increase in the level of auditor-borne damage awards. This legal liability is also the focus of the Nelson et al (1988) paper which develops a model that links the rigour of auditing practices adopted by an auditor to client-specific internal control systems.

agency-related variable, ie managerial ownership of the firm, which has not been previously documented in this literature. Furthermore, we use pooled time-series and cross-sectional regressions to show that most of the analysed financial ratios of qualified firms have been significantly different from those of the clean firms for at least four years. Fourth, we show that more "severe" qualifications are related to firm financial ratios in a manner consistent with agency theory. Finally, we show that the use of dummy variables can mask important underlying relationships which can at times be revealed by additional data collection and research effort.

The rest of the paper proceeds as follows. In Section 2 we develop the hypotheses and in Section 3 we describe our data. Section 4 presents the results of our analysis and Section 5 concludes the paper.

2. HYPOTHESES

LEVERAGE

The costly contracting literature contains many examples of empirical investigations that employ leverage measures as a proxy for the agency costs of debt.[4] The literature argues that, *ceteris paribus*, higher debt-to-assets levels are associated with higher agency costs. We control for the empirical regularity that debt-to-assets ratios vary between industries by matching on industry[5].

Higher levels of debt involve, *ceteris paribus*, higher client financial risk. As the financial risk of a firm increases, auditors have incentives to be more vigilant in their duties. Nelson et al (1988) argue that as client risk increases, auditors respond by increasing effort and/or fees. If audit effort is increased in an attempt to reduce audit liability, it is more likely that audit procedures will be more accurate, and that client accounting and reporting errors on breaches will be discovered. It is also likely that in this setting, whilst audit procedures may remain the same, it would be "imprudent" for auditors not to qualify their reports.

As the debt in a firm's capital structure rises (and the agency costs of debt rise), managers have greater incentives to engage in accounting methods which avoid these costs, eg they may switch accounting methods to avoid a covenant violation. Initially the changed reporting methods used may not cause a qualification. However, if the financial condition of the firm continues to decline, "legitimate" accounting solutions become increasingly more difficult to discover.[6] Therefore, at some point management may subsequently adopt methods, perhaps in an attempt to avoid debt contract violation, to which auditors

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4 For evidence that debt equity levels are associated with closeness to constraints in debt agreements see, for example, Press and Weintrop (1990) and Duke and Hunt (1990).

5 See, for example, Bowen, Noreen and Lacey (1981).

6 As is revealed below, firms receiving qualified audit opinions are far more likely to have recently changed accounting methods than their control group.

object.[7] In such circumstances, the perceived cost of reporting using the auditor preferred method is presumably greater than the cost imposed by a qualified audit report. From an auditor decision viewpoint, the costs of potential litigation exceed the benefit of issuing a clean report. Thus it is quite possible that the interests of both the auditor and management are best served by adopting a different position on the disputed accounting representation, despite the divergence leading to a qualified opinion.

In addition, debt levels per se will sometimes lead to a qualification. If the auditor is unable to gain an indication of continued funding support for the client by principal lenders, a qualified opinion is likely to be issued. It is more likely that lenders will withdraw funding in the face of higher (and growing) levels of debt than with low and stable debt requirements. Again this argument suggests the following hypothesis.

Hypothesis 1: Ceteris paribus, *firms receiving qualified audit reports will have higher leverage ratios than an unqualified control group matched by industry.*

We employ three proxies for leverage: the debt/assets ratio, the equity/debt ratio and the interest coverage ratio. These proxies have been used in previous research.[8] These are calculated for the sample and pair in the year of qualification and for each of the four previous financial years.

LIQUIDITY

The current ratio is used as a proxy for liquidity. We calculate this for the year of qualification and each of the four preceding financial year ends for our sample and pair.

The current ratio is used as an indicator of the firm's ability to meet its short-term obligations. It is, however, by no means a perfect predictor of capacity to meet debts when due. Issues such as cash flow generating ability, untapped lines of credit, industry commonalities (which we control for in our matching) and distributional aspects cannot be captured in a current ratio. Despite these limitations, the current ratio is used widely in financial statement analysis.

From the auditor perspective the probability of shareholder litigation will increase as the current ratio declines because, *ceteris paribus*, a lower current ratio means a higher probability of corporate failure. Again, Nelson et al (1988) argue that audit effort increases as client risk increases. Accordingly, audit qualifications should be a negative function of a firm's liquidity. In the extreme, severe liquidity problems will lead to going concern qualifications. These arguments lead to the following hypothesis.

Hypothesis 2: Ceteris paribus, *firms receiving qualified audit reports will have lower current ratios than an unqualified control group matched by industry.*

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7 For evidence on accounting changes adopted by firms facing possible insolvency, see Schwartz (1982).

8 For variations of different proxies for leverage, see Duke and Hunt (1990).

PROFITABILITY

A firm's profitability determines its future viability. Profitability is also positively related to management compensation. While some evidence exists (principally from the U.S.) to suggest that managers have incentives to adopt accounting methods that reduce income (and consequently reduce political costs), there is no evidence that such behaviour is practised by Singapore managers. In any event the U.S. results which are consistent with political cost considerations are, in the main, due to the inclusion of oil giants.[9]

The argument that the probability of receiving an audit qualification increases as profitability declines can be viewed from several perspectives. First, declining profits increase the probability of bankruptcy. Second, declining profits are much more likely to lead to creative accounting by managers in an attempt to maintain their compensation. Third, poorly managed firms are likely to receive greater publicity and highlight the shareholder/manager conflict. Fourth, the probability of litigation by shareholders against the auditor increases as the financial viability of the firm is threatened. Fifth, riskier clients are likely to be reviewed more thoroughly, and thus it is more likely that auditors will qualify to avoid litigation losses (see for example, Nelson et al, 1988).

These arguments lead to the following hypothesis.

Hypothesis 3: Ceteris paribus, *firms receiving audit qualifications will have lower profit to total assets ratios than an unqualified control group matched by industry.*

Two proxies, which we calculate for the year of qualification and the four prior years, are used for the sample and control firms' profitability. These are net profit (before interest and taxes) to total assets, and net profit (after tax) to total assets. Total assets were used because in some cases net assets were negative.

SIZE

Empirical evidence on firm failure suggests that small firms are more likely to fail. Accordingly, it might be argued that small firms are more likely to receive qualified audit reports. However, a contrary view on the association between firm size and qualified opinions can be argued from an auditor's perspective. The larger the firm the greater is the potential loss due to shareholder action. At some point, where the viability of the auditor is threatened by the loss exposure, the probability of losing the client because of an adverse opinion becomes relatively less important in the auditor decision model.

Previous agency theory evidence also produces mixed results on size (Watts & Zimmerman, 1990). It is generally accepted that size proxies for several factors (other than political costs) including managerial ability, access to accounting advice, age and industry (Ball & Foster, 1982). Any empirical association should therefore be interpreted with caution.

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9 For a summary of this evidence, see Watts and Zimmerman (1986).

These arguments suggest that no clear directional association between client size and incidence of audit qualifications can be argued *ex ante*. Accordingly, no hypothesis is stated on the size variable which we proxy by the total assets of the firm.

OWNERSHIP OF THE FIRM

Chow (1982) argues that in the presence of costly contracting the probability that a firm will voluntarily engage an auditor increases as managerial ownership decreases. The argument, which is developed from Jensen and Meckling (1976), implicitly holds the leverage of the firm constant. Chow (1982) subsequently develops a leverage hypothesis which predicts that auditors will be used more frequently when debt levels increase. The interaction of ownership and leverage is not tested, probably because cross-sectional differences in leverage reflect things other than agency costs, ie leverage proxies for industry and systematic risk, and because both ownership and leverage are measured with error. In an analogous way, the argument here assumes implicitly that debt levels are controlled for via the matching by industry.

As the percentage of shares held by the management of a firm increases, the potential cost of an adverse audit opinion falls because the accounting reports (prepared by managers and directed to shareholders) increasingly become management reports to owner-management. The stewardship function is less important for a firm where managers own a larger proportion of the equity capital. From a management viewpoint the probability of shareholders taking punitive action decreases as the outside shareholders' stake in the firm decreases. In short the agency costs between owners and managers are lower and hence there is less at stake in a qualified opinion. These arguments suggest the following hypothesis.

Hypothesis 4: Ceteris paribus, *firms with a higher percentage of the equity held by the management will have a higher probability of receiving a qualified audit report than an unqualified control group matched by industry.*

AUDITOR IDENTITY

Dummy variables are used to proxy for auditor identity. "Big-8"[10] firms are assigned the dummy value 0, local firms are assigned the value 1.

The auditor decision to qualify or not qualify is argued in this paper as involving a trade-off between the costs and benefits to the auditor of issuing an adverse opinion (increased probability of losing the client and reduced expected value of litigation) or an unqualified report. We can expect that the larger the audit firm, the larger is the "brand name" and reputation effect which is potentially at risk. Also, large audit firms may have greater synergies in conducting audits and detecting reporting abnormalities compared with small

10 In the period from which data for this study were drawn the "Big-8" firms had not merged to form the "Big-6".

audit firms. Large firms achieve higher audit accuracy compared with small firms (Francis & Stokes, 1986; Nelson et al, 1988). These considerations suggest that large firms are more likely to qualify an audit report to protect their reputation. On the other hand, litigation losses are likely to be more important in small audit firm decision-making because first, they carry lower professional indemnity insurance and second, they command access to a smaller asset structure. This argument suggests that small firms are more likely to issue qualified opinions compared with large firms. Hence no clear association between auditor size and the likelihood of a qualified audit report being issued can be established. Accordingly no hypothesis on auditor size is stated.

ACCOUNTING POLICY CHANGES AND ASSET REVALUATIONS

One reason for changes in accounting policy is the adoption of generally accepted accounting principles (GAAP) that are different from those used previously. Such "technical" accounting policy changes are required to be disclosed in the financial statements (Statement of Accounting Standard 1, para 22, 1977). A firm with poor financial performance may therefore make a "technical" accounting policy change in order to "improve" reported results. However, if the auditor disagrees with management on the acceptability of the accounting policies selected, notwithstanding that these policies may well be part of GAAP, the auditor may express a qualified opinion if such a disagreement results in a material effect on the financial statements.

Management is also required to estimate the effects of future events in preparing financial reports, eg the provision for uncollectible receivables, inventory obsolescence and the useful lives of depreciable assets. Although such estimates and their changes are not changes in accounting policies in the technical sense, they may have significant effects on the financial statements. The auditor may also dispute the reasonableness of such estimates by qualifying the audit report. The difference between the "technical" and "non-technical" changes in accounting policies is that whilst the former is reported in the financial statements, the latter generally is not. Our evidence show that the "non-technical" changes and their financial effects are, however, frequently mentioned in qualified audit reports.[11] A dummy variable, coded zero if the firm did not change accounting methods in the year of qualification, and one if it did, was used as a proxy for changes in accounting method.

A revaluation of fixed assets is another form of a change in accounting policy which may have favourable contracting cost implications. Whittred and Chan (1992) argue that firms with outstanding debt governed by a conventional trust deed incorporating explicit borrowing limitations are more likely to revalue their assets, particularly if they are also highly levered. In a similar fashion to the above, firms which revalued their assets were

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11 Examples include (a) insufficient provision for the collectibility of "slow recovery" accounts receivable due to poor economic conditions, and (b) no provision for income tax being made on the realised surplus arising from the sale of freehold property as the firm is of the opinion that the surplus is of a capital nature. In both cases, the amounts were material.

assigned a dummy of one; those which did not revalue were assigned zero. It is obvious that these proxies cannot capture the significance of the financial statement effect caused by the change, nor can multiple changes be accommodated.

The preceding discussion and those in previous sub-sections leads us to the following hypothesis.

Hypothesis 5: *Firms receiving qualified audit reports are more likely to have changed their accounting method and revalued their assets in the year of qualification than an unqualified control group matched on industry membership.*

3. DATA

All first-time audit qualifications issued to firms with financial years ending between 1973 and 1985 which are listed on the Singapore Stock Exchange (SSE) are included in this study.[12]

TABLE 1
TIME DISTRIBUTION OF ALL QUALIFIED AUDIT REPORTS AND FIRST-TIME QUALIFIED AUDIT REPORTS FOR COMPANIES LISTED ON THE SINGAPORE STOCK EXCHANGE FOR FINANCIAL YEARS 1973-1985

Year	All Qualifications	First-Time Qualification
1973	9	6
1974	6	3
1975	16	9
1976	23	13
1977	24	10
1978	22	7
1979	20	2
1980	22	7
1981	25	5
1982	23	8
1983	24	7
1984	29	10
1985	33	17
Total	276	104

12 A listing of the firm names and dates of qualification is available on request to the authors.

Table 1 contains the time distribution of both first-time qualifications and all qualifications. There were 276 qualified audit reports issued during the period 1973 to 1985, of which 104 are classified as first-time, ie a qualification in one year when the previous audit report is clean or the nature of the qualification is different from one year to the next. During this period there was an average of 240 companies listed on the SSE and thus the probability of a qualification and a first-time qualification is 0.088 and 0.033 respectively.

Table 2 shows the 104 first-time qualifications by qualification type. The table shows that the most common qualifications relate to asset and liability valuation (41%), creditor support needed to maintain the firm as a going concern (16%)[13] and non-compliance with accounting standards (12.5%).[14] Examples of qualifications which we classify as miscella-

TABLE 2
FIRST-TIME AUDIT QUALIFICATIONS FOR COMPANIES LISTED ON THE SINGAPORE STOCK EXCHANGE FOR FINANCIAL YEARS 1973-1985 CLASSIFIED BY TYPE OF AUDIT QUALIFICATION

Type of Qualification	Number
1. Creditor Support/Going Concern	17
2. Asset Valuation Issues	31
3. Liability Valuation Issues	12
4. Non-Compliance with Accounting Standards	13
5. Multiple Qualifications	6
6. Unable to Form an Opinion	4
7. Not True and Fair	3
8. Miscellaneous	18
Total	104

13 There are 17 firms which have creditor support/going concern qualifications. Eleven of these received subsequent (some for several years) qualifications for the same reason. Eight were subsequently delisted because of bankruptcy or failure to pay listing fees. The probability of bankruptcy, conditional on the receipt of a qualified report of this type, thus greatly exceeds the unconditional probability of bankruptcy. We estimate the unconditional probability of bankruptcy using all firms listed on the Singapore Stock Exchange between 1973 and 1993. There are 132 firms which on average have been listed for approximately 10 years. Five of these became bankrupt. Thus, we estimate the probability of bankruptcy in a particular year for a listed firm in Singapore is 0.004.

14 There are 13 cases of non-compliance with accounting standards. Of these, eight firms received a subsequent qualification for the same reason. Two of these eight received the same qualification once, two received the same qualification twice, two received the same qualification three times, one received the same qualification five times whilst one firm had six subsequent qualifications which were the same. The main reasons for qualifications of this type were non-provision for depreciation and not equity accounting associated companies.

neous are given in the Appendix. Qualifications of this latter type are classified as insignificant or unimportant to the financial viability of the firm.

We classify creditor support/going concern, unable to form an opinion and not true and fair as "severe" qualifications. There are 24 such cases. Valuation qualifications and multiple qualifications are classified as "moderate" in severity (49 cases) while non-compliance with accounting standards and miscellaneous qualifications are regarded as other (31 cases).

This partitioning is broadly consistent with that required by the Auditing Standards Board of the American Institute of Certified Public Accountants. Statement 58 requires that qualified reports be split into adverse, disclaimer and other qualifications. Adverse opinions, which are referred to as moderate here, are typically issued when several financial accounting policies are regarded as inappropriate by the auditor. Disclaimer opinions are issued when the auditor does not express a view, and these are joined with going concern and not true and fair opinions to form the severe group. All other qualifications constitute the third group. It should be noted that qualifications of this third type generally represent departures from GAAP which have a material effect on the interpretation of the financial statements.

For each qualification a matched control (which is unqualified) is selected. Matching was achieved by a random selection from other firms in the same industry. The industry classifications of first-time qualifications is not significantly different from the population of listed firms.

The question of independence between the sample and control arises because it is possible for a qualified firm to be included more than once (ie a qualification is followed by a clean opinion and then a subsequent qualification within the sample period on the nature of the qualification changing from one period to the next) and because the population of SSE firms is small. However, there are no cases where a control firm switches to the portfolio of qualified firms. In total there are 67 qualified companies and 63 control firms.[15]

For each qualified firm and its matched control we collected financial statement information for the qualification year and the four previous financial years from the Annual Report File at the National University of Singapore. These data allowed us to calculate three leverage measures, a liquidity measure, two profitability measures and two size measures. In addition, the managers' share of the ownership of the firm and the identity of the auditor are collected for the qualification year.

15 Of the 67 qualified firms, 39 received one qualification, 23 received two, three received three, and one firm was qualified four and another six times. Thirty-three control firms were used once, 23 twice, five were used three times while one was used four times and another six times.

As in previous empirical work, the financial ratios in this study are subject to extreme values generally associated with small denominator problems. Foster (1986), who discusses several methodological issues in using transformed financial statement data, suggests that extreme values might be handled through deletion, winsorizing,[16] trimming or retention. We adopt the approach of scanning the distribution of all financial ratios to ascertain if extreme values are due to small denominations or economically meaningless calculations. In the case of interest coverage, approximately 5% of the ratio values were winsorized to a maximum value of 100. No other ratios were truncated. However, an inspection of extreme profitability revealed that some observations of large profit rates were due to losses when shareholders' funds were negative. As a consequence the denominator used in profit ratios is total assets, which was never negative.

4. RESULTS

UNIVARIATE ANALYSIS

Leverage and Liquidity

Table 3 contains our univariate results on leverage and liquidity. As expected, firms receiving audit qualifications have significantly higher total debt to total assets ratios. Further the debt/asset ratio of the qualified group rises as the audit qualification year approaches. At time -4 there are no significant differences in debt levels between the sample and pair, but median debt/asset levels rise from 0.437 to 0.506 for the qualified group and remain steady for the control (0.353 compared to 0.335). A similar picture emerges for the equity-to-debt ratio. Equity-to-debt levels fall for the qualified group and are steady for the control. Equity/debt ratios are considerably more skewed than debt/asset ratios and accordingly the non-parametric tests are more appropriate in testing differences between the groups. Interest coverage is significantly lower in all periods for the qualified group, with median coverage in the range of zero (ie no interest payment) to 1.268. The control, by contrast, has median coverage in the range 3.024 to 5.570.

Table 3 reveals that qualified firms have significantly lower liquidity than the control in all comparisons. Liquidity for the qualified group also worsens as the audit qualification approaches, though, as revealed in Panel B, this decline is not significant. The median current ratio is in the range of 0.926 to 1.081 for the sample, while paired firms have a range of 1.334 to 1.416. A rule of thumb in financial statement analysis would suggest severe liquidity problems in current ratios less than one; this result is evidenced for the median firm in year 0 and -1 for the qualified group.

16 This is a process of changing the value of the extreme observations to the value of the nearest observation not viewed as "suspect" or extreme.

TABLE 3
LEVERAGE AND LIQUIDITY RATIOS FOR FIRMS RECEIVING FIRST-TIME AUDIT QUALIFICATIONS (n=104) AND A MATCHED CONTROL GROUP IN THE YEAR OF QUALIFICATION (YEAR 0) AND YEARS PRIOR TO QUALIFICATION (YEARS -1 TO -4) (PANEL A) AND POOLED TIME SERIES REGRESSION RESULTS WITH RELATED t-STATISTICS IN PARENTHESIS (PANEL B)

PANEL A	Years Prior to Qualification				
	-4	-3	-2	-1	0
Total Debt to Total Assets					
Sample Mean	0.474	0.530	0.502	0.485	0.504
Pair Mean	0.392	0.371	0.371	0.369	0.367
Sample Median	0.437	0.427	0.453	0.500	0.506
Pair Median	0.353	0.384	0.374	0.346	0.335
t-statistic (a)	(1.367)	(1.757)	(1.774)	(3.353)**	(3.897)**
k-s statistic (b)	(0.180)	(0.133)	(0.149)	(0.248)**	(0.267)**
Total Equity to Total Debt					
Sample Mean	6.646	6.592	4.957	2.763	2.606
Pair Mean	2.689	4.482	7.342	3.614	3.708
Sample Median	1.287	1.343	1.207	0.998	0.976
Pair Median	1.832	1.605	1.673	1.891	1.987
t-statistic (a)	(1.483)	(0.886)	(-0.614)	(-1.249)	(-1.629)
k-s statistic (b)	(0.182)	(0.128)	(0.138)	(0.213)	(0.257)*
Interest Coverage Ratio					
Sample Mean	6.560	8.432	10.656	4.289	4.322
Pair Mean	21.598	13.281	17.234	19.504	16.471
Sample Median	0.000	0.719	1.268	0.779	0.253
Pair Median	5.570	3.776	5.249	5.220	3.024
t-statistic (a)	(-3.014)**	(-0.186)	(-1.588)	(-3.852)**	(3.293)**
k-s statistic (b)	(0.766)**	(0.815)**	(0.720)**	(0.669)**	(0.651)**

TABLE 3
(continued)

PANEL A	Years Prior to Qualification				
	-4	-3	-2	-1	0
Current Ratio					
Sample Mean	1.922	2.198	2.376	1.440	1.597
Pair Mean	1.614	2.024	1.831	1.797	2.086
Sample Median	1.081	1.034	1.055	0.937	0.926
Pair Median	1.340	1.416	1.390	1.334	1.368
t-statistic (a)	(0.682)	(0.320)	(0.976)	(-1.176)	(-1.403)
k-s statistic (b)	(0.297)**	(0.261)**	(0.225)*	(0.289)**	(0.374)**

PANEL B	Regression Statistics			
	α	β_1	β_2	*F-Stat*
Total Debt to Total Assets				
Qualified Firms	0.50	0.00		0.00
	(7.75)**	(0.02)		
Unqualified Firms	0.39	-0.00		0.40
	(14.82)**	(-0.63)		
Combined Sample	0.38	-0.00	0.13	11.13**
	(10.35)**	(-0.22)	(4.72)**	
Total Equity to Total Debt				
Qualified Firms	8.36	-1.21		6.28**
	(4.93)**	(-2.51)**		
Unqualified Firms	4.45	-0.00		0.00
	(2.23)*	(-0.01)		
Combined Sample	6.35	-0.60	0.02	1.25
	(4.52)**	(-1.58)	(0.02)	

TABLE 3
(continued)

PANEL B	Regression Statistics			
	α	β_1	β_2	*F-Stat*
Interest Coverage Ratio				
Qualified Firms	10.06	-1.03		1.71
	(3.65)**	(-1.31)		
Unqualified Firms	14.19	-0.66		0.06
	(5.96)**	(-0.96)		
Combined Sample	19.52	-0.63	-10.76	17.52**
	(7.78)**	(-0.94)	(-5.84)**	
Current Ratio				
Qualified Firms	2.40	-0.16		1.72
	(5.60)**	(-1.32)		
Unqualified Firms	1.67	0.07		0.78
	(6.21)**	(0.88)		
Combined Sample	2.04	-0.05	0.01	0.23
	(7.51)**	(-0.67)	(0.03)	

(a) Pooled variance t-test
(b) Kolmogorov-Smirnov two sample test
** Significant at 1%
* Significant at 5%

The pooled time series regressions reported in Panel B of Tables 3 and 4 are of the following form:

$$y_{it} = a + \beta_1 t + \mu_{it} \quad (1)$$

$$y_{it} = a + \beta_1 t + \beta_2 d + \mu_{it} \quad (2)$$

where

y_{it} = the value of the financial ratio for firm i in period t

t = a dummy variable for the number of years prior to qualification with values of 0 to 4 where 0 represents the year of qualification

d = a dummy variable for whether the firms was qualified (zero) or unqualified (one)

μ_{it} = the residual error

Regression equation (1) is estimated using pooled time series data for both the qualified group and the unqualified group. Thus, it is estimated using 1,040 observations (ie 5 years times 208 firms). The significance of the coefficient β_1 is used to examine whether the particular financial ratio has changed through time. Equation (2) also uses pooled time

series data for the combined sample. The significance of the coefficient β_2 is used to determine whether the financial ratio for the qualified firms is above or below that of the unqualified firms.

These regressions suggest that a firm's debt-to-total assets ratio and interest coverage ratio are significantly associated with the auditor's decision to qualify. The leverage of the qualified group relative to the unqualified group has risen significantly over the sample period, while interest coverage has declined significantly. Taken together, these results are consistent with previous evidence (eg Dopuch et al, 1987) and the intuition provided in Mutchler's (1985) survey of auditor views on signals for firms facing financial problems.

These results, in summary, indicate rising debt levels for qualified firms and significant differences between sample and pair. There is an indication that the financial condition of the qualified firm, eventually leading to an audit qualification, has been significantly worse than our control for at least four years prior to the qualification.

Profitability and Size

Table 4 details profitability and size ratios. The table shows that the sample firms have significantly lower profitability than the control groups; in many cases the t-statistics are close to six. Profitability for both groups declines toward the qualification year. This is consistent with the proposition that audit qualifications occur more frequently when economic conditions worsen. Again there is evidence that the financial condition of the firm which eventually leads to a qualification has existed for at least fours years prior to the qualification per se. As Panel B of Table 4 shows, there has been a significant decline in profitability for the qualified group relative to the control group. When viewed in this light , and to the extent that this evidence can be imputed to be of relevance in other countries, it is perhaps not surprising that several overseas share market studies fail to find abnormal losses[17] on the announcement of qualified audit reports. The qualification is merely the dated manifestation of a previously discoverable financial condition of the firm. Capital markets are able to glean the information contained in qualified reports from more timely signals.

While paired firms are on average larger than the sample, they are not significantly so, as revealed in Table 4. However, Panel B reveals that the growth in size of the qualified group is significantly lower than that of the control firms, which is consistent with a decline in net assets (relative to the control) associated with the incurrence of losses.

17 See Ball, Walker and Whittred (1979), Dodd et al (1984), Elliott (1982) and Shevlin and Whittred (1984). But see also Firth (1978) and Dopuch et al (1986).

TABLE 4
PROFITABILITY AND SIZE RATIOS FOR FIRMS RECEIVING FIRST-TIME AUDIT QUALIFICATIONS (n=104) AND A MATCHED CONTROL GROUP IN THE YEAR OF QUALIFICATION (YEAR 0) AND YEARS PRIOR TO QUALIFICATION (YEARS -1 TO -4) (PANEL A) AND POOLED TIME SERIES REGRESSION RESULTS WITH RELATED t-STATISTICS IN PARENTHESIS (PANEL B)

PANEL A	Years Prior to Qualification				
	-4	-3	-2	-1	0
Net Profit (before interest & tax) to Total Assets					
Sample Mean	0.035	-0.112	-0.083	0.019	0.004
Pair Mean	0.111	0.116	0.115	0.102	0.087
Sample Median	0.052	0.055	0.039	0.033	0.021
Pair Median	0.086	0.084	0.080	0.063	0.056
t-statistic (a)	(-3.450)**	(-1.689)	(-1.699)	(-6.061)**	(-5.837)**
k-s statistic (b)	(0.426)**	(0.352)**	(0.413)**	(0.409)**	(0.376)**
Net Profit (after tax) to Total Assets					
Sample Mean	0.002	-0.154	-0.124	-0.019	-0.034
Pair Mean	0.060	0.065	0.063	0.052	0.044
Sample Median	0.029	0.023	0.014	-0.003	-0.002
Pair Median	0.061	0.045	0.039	0.029	0.021
t-statistic (a)	(-2.925)**	(-1.630)	(-1.603)	(-6.108)**	(-6.029)**
k-s statistic (b)	(0.397)**	(0.297)**	(0.391)**	(0.438)**	(0.446)**
Total Assets ($'000)					
Sample Mean	78337	96878	120216	151517	172731
Pair Mean	171805	190120	230036	270049	273145
Sample Median	32197	40891	51137	52824	48721
Pair Median	40359	41638	57884	78822	80150
t-statistic (a)	(-1.026)	(-0.883)	(-0.914)	(-0.881)	(-0.730)
k-s statistic (b)	(0.137)	(0.136)	(0.115)	(0.167)	(0.172)

TABLE 4
(continued)

PANEL B	Regression Statistics			
	α	β_1	β_2	*F-Stat*
Net Profit (before interest & tax) to Total Assets				
Qualified Firms	-0.07	0.01		0.22
	(-0.74)	(0.47)		
Unqualified Firms	0.03	0.00		0.03
	(0.72)	(0.16)		
Combined Sample	0.01	0.00	-0.13	7.09**
	(2.01)*	(0.21)	(-3.76)**	
Net Profit (after tax) to Total Assets				
Qualified Firms	-0.10	0.01		0.21
	(-1.15)	(0.45)		
Unqualified Firms	-0.01	0.00		0.05
	(-0.29)	(0.21)		
Combined Sample	0.05	0.00	-0.12	6.07**
	(0.95)	(0.26)	(-3.48)**	
Total Assets ($'000)				
Qualified Firms	10.10	0.12		4.41**
	(49.51)**	(2.10)*		
Unqualified Firms	10.30	0.13		10.76**
	(75.34)**	(3.28)**		
Combined Sample	10.52	0.13	-0.43	13.65**
	(72.29)**	(3.35)**	(-4.04)**	

(a) Pooled variance t-test
(b) Kolmogorov-Smirnov two sample test
** Significant at 1%
* Significant at 5%

Ownership of the Firm

Consistent with our hypothesis, qualified firms are more owner-managed than the control group (see Table 5 Panel A). These data are, however, highly skewed and, accordingly, it would be inappropriate to argue too strong a case, particularly because the Kolmogorov-Smirnov statistic is insignificant.

Accounting Policy Changes

Table 5 Panel B reveals no significant difference for the dummy variable on change in accounting methods.[18] However, as the analysis below indicates, a zero one dummy variable can be a poor proxy for the financial statement effect of a change in accounting policy. There are 19 qualified firms which changed accounting methods; in only five cases (significant at $\alpha = .05$ for a binomial test) did this change result in a decrease in the net income that was reported. The average effect was to increase net income by $22.7 million. By way of contrast only two of the nine (significant at $\alpha = .10$) unqualified firms for which we have data, reported an increase in net income as a result of the accounting policy change (15 unqualified firms changed accounting methods but six of these had no financial statement effect). The average effect for the unqualified group was to decrease net income by $0.8 million. The accounting change increases the return on assets for the qualified group by 5.3% on average and this is significantly different from the -0.23% decrease in the return on assets for the control firms. An important point here is that a zero one dummy can mask important differences which can be revealed by additional data collection.

Asset Revaluations

Table 5 shows a similar result to that above for asset revaluations. Table 5 Panel C indicates that there is no significant difference in the number of qualified and unqualified firms which revalue their assets when a zero one dummy is used. However the mean percentage increase (19.5%) in assets associated with the qualified firms revaluations is significantly above ($\alpha = .01$) the 3.0% effect of unqualified firms' revaluations. Again, the zero one dummy masks significant differences in these groups.

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18 The dollar effect of these accounting policy changes are those defined as "technical" changes as discussed in the section on Accounting Policy Changes and Asset Revaluations above. We also examined the audit reports and financial statements of the entire sample (both the sample and pair groups) and obtained the dollar effect of those "non-technical" changes in accounting policies. The mean (standard deviation) of the qualified group was $13.2 million ($50.9 million) whilst those of the unqualified group were close to zero. This change had the effect of increasing the return on total assets for the qualified group by 5.8% on average. We pooled the data ("technical and "non-technical" changes) and the results are similar in significance to those reported in Table 5.

TABLE 5
MEAN, MEDIAN AND STANDARD DEVIATIONS FOR VARIOUS FIRM ATTRIBUTES FOR FIRMS RECEIVING FIRST-TIME AUDIT QUALIFICATIONS (n=104) AND A MATCHED CONTROL GROUP IN THE YEAR OF QUALIFICATION

PANEL A - Percentage of equity held by directors

Sample Mean	Pair Mean	Sample Median	Pair Median	t-statistic (a)	k-s statistic (b)
19.32	10.11	1.37	0.84	(2.085)**	(0.150)

PANEL B

(i) **Dummy variable on accounting policy change in the year of qualification (where 0 = firm did not change accounting policy, and 1 = change in accounting policy)**

Sample Mean	Pair Mean	Sample Median	Pair Median	t-statistic (a)	k-s statistic (b)
0.183	0.144	0.000	0.000	(0.747)	(0.104)

(ii) **Dollar value of the change in income associated with the accounting policy change (scaled by total assets)**

Sample Mean	Pair Mean	Sample Std Dev	Pair Std Dev	t-statistic (a)
0.053	-0.002	0.145	0.006	1.636*

PANEL C

(i) **Dummy variable on an asset revaluation in the year of qualification (where 0 = firm did not revalue assets, and 1 = assets were revalued)**

Sample Mean	Pair Mean	Sample Median	Pair Median	t-statistic (a)	k-s statistic (b)
0.202	0.173	0.000	0.000	0.531	0.111

(ii) **Dollar value of these revaluations (scaled by total assets)**

Sample Mean	Pair Mean	Sample Std Dev	Pair Std Dev	t-statistic (a)
0.195	0.030	0.170	0.046	3.470***

PANEL D

Dummy variable for auditor identity (where 0 = Big 8 auditor, and 1 = Non-big 8 auditor)

Sample Mean	Pair Mean	Sample Median	Pair Median	t-statistic (a)	k-s statistic (b)
0.596	0.221	1.000	0.000	(5.922)***	(0.394)***

(a) Pooled variance t-test
(b) Kolmogorov-Smirnov two sample test
*** Significant at 1%
** Significant at 5%
* Significant at 10%

Auditor Identity

Table 5 Panel D reveals a highly significant auditor identity difference between the groups. Almost 60% of the firms receiving a qualified opinion are audited by non Big-8 auditors, while around 78% of the clean firms are audited by Big-8 firms. As we have previously noted, the theoretical and empirical literature is equivocal on the relationship between auditor identity and the probability of a qualification. We are reluctant to draw any conclusion from the results we obtained because this particular test involved a potentially severe self-selection problem. Perhaps smaller and riskier firms migrate to smaller audit firms because Big 8 firms will not take them on? Perhaps, alternatively, small audit firms have a higher propensity to qualify their opinions? We are unable to disentangle these competing explanations with our available data.

MULTIVARIATE RESULTS

It is likely that several of the variables analysed in the previous section capture similar financial attributes. For example, declining profitability will generally result in declining equity-to-debt ratios, liquidity ratios, and interest coverage. Table 6, which contains correlation coefficients for the variables used in the regression below, confirms this. Multivariate analysis is employed to isolate those variables which are significant only in the sense that they proxy for some other (perhaps unknown) factor.[19]

All First-Time Qualifications

Table 7 presents the results for a series of probit and ordinary least square regressions in which the dependent variable is dichotomous. Qualified firms are assigned the value 1, unqualified control firms the value 0. Two regressions (one probit and one ordinary least square) are run in each of the five comparison periods. Results are reported using both regression techniques. Stone and Rasp (1991) demonstrate that the choice between the two involves trade-offs which do not always lead to probit being more appropriate when the dependent variable is dichotomous.[20] These results are summarized below.

First, the profitability variables and the ownership variables are highly significant. Consistent with the univariate results qualified firms are significantly less profitable and are far more likely to be owner-controlled than manager-controlled. Second, there is some evidence of liquidity and size differences between the groups, especially as the year of qualification approaches. Qualified firms are smaller and less liquid than their control. Third, most of the models are highly significant. Fourth, the explanatory power of the models, as measured by the coefficient of determination, compares quite favourably with previous empiri-

19 See Hagerman and Zmijewski (1979) for a discussion of the application of probit in accounting choice studies.

20 See also Noreen (1988) for a comparison of probit and ordinary least square.

TABLE 6
CORRELATION COEFFICIENTS (AND THEIR SIGNIFICANCE) AMONG VARIABLES USED IN PROBIT AND ORDINARY LEAST SQUARE REGRESSIONS FOR FIRMS RECEIVING FIRST-TIME AUDIT QUALIFICATIONS (n=104) AND A MATCHED CONTROL GROUP FOR THE FINANCIAL YEAR OF QUALIFICATION

	Debt/ Assets	Current Ratio	Interest Cover	EBIT/ Total Assets	Size	Ownership
Debt Assets	1.000	-0.385 (0.000)	-0.209 (0.003)	-0.347 (0.000)	0.224 (0.001)	-0.014 (0.841)
Current Ratio		1.000	0.072 (0.301)	0.086 (0.223)	-0.382 (0.000)	-0.064 (0.363)
Interest Cover			1.000	0.406 (0.000)	0.026 (0.713)	0.117 (0.097)
EBIT/Assets				1.000	0.173 (0.014)	-0.149 (0.035)
Size					1.000	0.066 (0.347)
Ownership						1.000

TABLE 7

PROBIT (RUNS 1 TO 5)AND ORDINARY LEAST SQUARE REGRESSION (RUNS 6 TO 10) RESULTS FOR FIRMS RECEIVING FIRST-TIME AUDIT QUALIFICATIONS (n=104) AND A MATCHED CONTROL GROUP IN THE YEAR OF QUALIFICATION (YEAR 0) AND YEARS PRIOR TO QUALIFICATION (YEARS -1 TO -4) AND RELATED CHI-SQUARE PROBABILITIES AND t-STATISTIC PROBABILITIES

Run	Year	Constant	Debt/ Assets	Current Ratio	Interest Cover	EBIT/ TotalAssets	Size	Owner-ship	R2	Log Likelihood (a) F Value (b)
1	0	2.277	2.285	0.043	-0.008	-10.374	-0.292	0.013		110.60
		(0.080)*	(0.013)**	(0.645)	(0.279)	(0.002)***	(0.011)***	(0.041)**		
2	-1	1.349	1.076	0.088	-0.014	-14.230	-0.147	0.013		102.47
		(0.291)	(0.252)	(0.400)	(0.063)*	(0.004)***	(0.213)	(0.043)**		
3	-2	1.952	1.074	0.053	-0.002	-9.932	-0.213	0.011		106.90
		(0.114)	(0.240)	(0.316)	(0.704)	(0.002)***	(0.070)*	(0.050)**		
4	-3	1.389	0.319	0.019	0.003	-10.405	-0.135	0.011		94.67
		(0.313)	(0.743)	(0.762)	(0.636)	(0.002)***	(0.292)	(0.047)**		
5	-4	0.951	0.192	0.121	-0.013	-7.509	-0.099	0.011		76.26
		(0.527)	(0.866)	(0.242)	(0.113)	(0.040)**	(0.501)	(0.072)*		
6	0	0.826	0.423	0.009	-0.002	-1.119	0.048	0.002	0.192	8.89
		(0.001)***	(0.005)***	(0.580)	(0.115)	(0.005)***	(0.028)**	(0.027)**		
7	-1	0.690	0.332	0.018	-0.002	-1.512	-0.031	0.002	0.199	8.77
		(0.006)**	(0.039)**	(0.363)	(0.039)**	(0.001)***	(0.172)	(0.022)**		
8	-2	0.864	0.120	0.010	-0.002	-0.032	-0.042	0.002	0.055	2.73
		(0.001)***	(0.114)	(0.378)	(0.161)	(0.531)	(0.073)*	(0.032)**		
9	-3	0.718	0.107	0.003	-0.001	-0.052	-0.030	0.002	0.038	2.03
		(0.015)**	(0.142)	(0.842)	(0.495)	(0.320)	(0.247)	(0.028)**		
10	-4	0.697	-0.119	0.017	-0.003	-1.178	-0.014	0.002	0.102	3.37
		(0.033)**	(0.578)	(0.342)	(0.035)**	(0.059)*	(0.642)	(0.061)*		

(a) The log-likelihood function is chi-squared distributed with 5 degrees of freedom. All models are significant at 1%.
(b) All models are significant at 1%, except model 9 which is significant at 10%.
* Significant at 10% ** Significant at 5% *** Significant at 1%

cal work in this area.[21] Fifth, the overall results are similar for both probit and ordinary least square regression.

Sub-category Results

Table 8 contains pooled variance t-statistics and their significance levels for our subcategories of "severe", "moderate" and "other" audit qualifications and their respective control groups. This table reveals that firms receiving "severe" qualifications:

(i) have significantly higher debt levels than the "moderate" and "other" qualification groups;

(ii) are significantly less profitable ("severe" qualifications have mean returns which are negative while the "other" group has positive profitability measures);

(iii) are less liquid and have lower interest coverage than groups receiving less severe qualifications.

5. CONCLUSION

This paper investigated the financial characteristics of the population of listed Singaporean companies receiving first-time qualified audit reports within a costly contracting framework. It develops and tests hypotheses which take into account the costly contracting implications of a qualification for both the auditor and client. A matched pair design is used as a control. Results indicate that firms receiving qualified reports are significantly less profitable and liquid and have significantly more debt than the control in the year of qualification. Profitability and liquidity is shown to have declined in the four-year period up to the qualification, while debt levels have increased. These results may partially explain why the general "no effect" result from share market announcement date studies exists; the qualification per se is a dated signal of financial deterioration which has existed for at least the previous four years. Qualification is also significantly associated with the dollar effect of a recent change in accounting method and an asset revaluation. Ownership of the firm also differs for the two groups. It is more likely that a qualified report will be issued to a firm that has a higher proportion of the equity owned by the management and/or that has recently changed its accounting methods to increase income or assets (via revaluation). The strength of the results is also shown to depend on the nature of the qualification. Companies which receive "severe" qualifications (ie going concern, not true and fair, unable to form an opinion) have more significant differences than their pairs compared to firms receiving "moderate" or "other" qualifications.

Our analysis is restricted to first-time qualifications because repeat qualifications for the same reason have less information content. We have also analysed an agency-related variable, ie managerial ownership of the firm, which has not been previously documented

21 For a review of this evidence, see Watts and Zimmerman (1986).

TABLE 8
RELEVANT FINANCIAL STATEMENT VARIABLES FOR VARIOUS SUB-CATEGORIES BASED ON THE SEVERITY OF THE AUDIT QUALIFICATION FOR THE POPULATION OF FIRMS RECEIVING FIRST-TIME AUDIT QUALIFICATIONS (n=104) AND A MATCHED CONTROL GROUP

	Severe Qualifications			Moderate Qualifications			Other Qualifications		
	Sample		*Pair*	*Sample*		*Pair*	*Sample*		*Pair*
Debt Assets Ratio - Mean	0.642		0.389	0.465		0.386	0.455		0.320
t-statistic		(-2.915)**			(-1.720)*			(-2.202)**	
Current Ratio - Mean	1.096		1.567	1.338		2.083	2.419		2.490
t-statistic		(1.604)			(1.916)**			(0.075)	
Interest Cover - Mean	2.020		17.562	0.363		16.990	12.397		14.856
t-statistic		(1.993)**			(3.027)***			(0.384)	
NPAT/Total Assets - Mean	-0.094		0.030	-0.030		0.043	0.011		0.055
t-statistic		(3.902)***			(3.836)**			(3.198)***	
EBIT/Total Assets - Mean	-0.046		0.069	0.004		0.086	0.047		0.103
t-statistic		(3.343)***			(3.989)***			(2.792)**	
Size - Mean	10.302		11.379	10.786		10.832	10.878		11.361
t-statistic		(2.796)***			(0.140)			(1.012)	
OCMC - Mean	27.296		16.069	18.529		6.043	14.381		11.445
t-statistic		(-0.872)			(-2.370)**			(-0.423)	

*** Significant at 1%
** Significant at 5%
* Significant at 10%

in this literature. We also show that the use of dummy variables masks important underlying relationships which are revealed by additional data collection and research effort. A qualified audit report is an independent opinion to shareholders that the accounts are in some respect not true and fair and some aspect of stewardship is brought into question. Future research may consider the impact of such a report on management compensation or the reaction of debtholders on future contracting.

APPENDIX

Examples of Qualifications which are classified as Miscellaneous:

1. The share certificates in a subsidiary company which was purchased during the year have not yet been received for registration in the name of the acquiring subsidiary company.
2. Auditors' report of a subsidiary states that due to restraints on the transfer of funds from Zambia there is uncertainty whether the net asset value of the Zambian subsidiary could be realised.
3. Stock of tin ore has been valued at cost of production without comparing with net realisable value, which is a departure from the company's normal accounting policy on the valuation of stock of tin ore. This has been brought about because of the suspension in the trading of tin on the Kuala Lumpur tin market.
4. Virtually all the accounting records of the company and a principal subsidiary company were destroyed by fire.
5. Issued capital as recorded in the register of members exceeded the actual issued capital by 23,000 stock units of $1 each.
6. The goodwill arising on the acquisition of a 75% interest in Industrial & Commercial Insurance (Malaysia) Berhad may subsequently be adjusted.

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