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Audit Detection of Financial Statement Errors: Implications for the Practitioner[1]

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Peat, Marwick, Mitchell & Co.

Financial statement errors are of great concern to the CPA and the financial executive alike. The auditor applies procedures attempting to ensure that all material errors in a client's financial statements are detected and adjusted. Numerous errors detected during an audit can increase auditing fees and be embarrassing to the financial management of a company if they result in audit adjustments. Practitioners should, whenever possible, assist management in preventing these errors which may indicate underlying weaknesses in a client's accounting systems and may cast doubt on the reliability of other financial reports prepared for internal use.

In this paper I review selected results of a study, "Audit Detection of Financial Statement Errors"[2], that I co-authored with Robert H. Ashton, Associate Professor of Accounting at New York University. The study focuses on errors that led to a financial statement adjustment. It suggests certain implications for the practitioner, both for designing and applying auditing procedures, and for ways of preventing accounting errors.

Due to the study's broad scope, the results are somewhat tentative. Future research is necessary to further explore the issues and questions raised and to validate any interpretations of these findings.

Study Method

The study analyzed errors uncovered during audits by Peat, Marwick, Mitchell & Co. of different-sized companies in a variety of industries. Audit team members reported the dollar amounts and account classifications of up to five audit adjustments for each company. They were also asked to describe the circumstances that led to the discovery of each error and their perception of the underlying causes of the error, including whether they believed it was intentional. We reviewed and classified 281 adjustments reported for 152 companies. Selected results appear throughout this paper.

Auditing Implications

The study results illuminate three important issues: How auditors find errors, why they occur, and where they occur. The most interesting result is the large number of errors found using analytical review and various "informal" audit procedures compared with the small number found by traditional

procedures. This finding is particularly surprising in light of the emphasis placed on these procedures in the audit literature and raises questions about the relative cost-effectiveness of audit procedures.

Not so surprising, but of potential importance to the auditor, is that most errors are unintended and due to random human error rather than to systems or procedural problems. The participating auditors attributed a great many errors to various personnel problems, including employee turnover and inexperience, time pressure, carelessness and even incompetence. Other related causes they noted included a lack of knowledge in accounting, and errors made in judgmental amounts. Relatively few errors were due to poor controls, a lack of follow-up or review, and other pervasive problems. Finally, errors tend to be concentrated into selected audit areas which vary somewhat by industry; more errors seem to occur in small companies; and detected errors typically understate income almost as frequently as they overstate it. These findings, discussed in more detail below, have important implications for the design of audits and for preventing errors.

How Auditors Find Errors

During an audit, a variety of different events or circumstances can lead the auditor to detect an error, ranging from formal audit procedures such as confirmation or inventory counts, to casual remarks by client personnel. We summarize these "initial events" and the error percentages detected by each in Tables 1 and 2.

As Table 1 indicates, analytical review and "informal" audit procedures, including client discussions and expectations from prior years, uncovered 45.6 percent of the errors reported in this study, and 54.9 percent of the large errors; that is, errors greater than 0.6 percent of a company's assets.

Table 1
How Errors Were Detected[3]

Initial Events	*All Errors*	*Small Errors*[a]	*Large Errors*[b]
Expectations from Prior Years	10.3%	3.7%	15.9%
Client Discussions	8.2	7.3	8.5
Analytical Review	27.1	31.7	30.5
General Procedures	2.1	1.2	4.9
Tests of Detail	47.3	49.9	35.3
Estimates of Value	5.0	6.1	4.9

[a] Less than or equal to 0.1 percent of total assets.
[b] Greater than or equal to 0.6 percent of total assets.

Tests of detail also detected a large percentage of errors (47.3 percent), although these procedures tended to detect small errors more frequently than large ones. Of the various types of detailed tests, confirmation and physical inspection in combination detected only 2.9 percent of the errors as indicated on Table 2. In contrast, detailed tests using client-supplied documentation, including both internally- and externally-prepared documents, detected 36.8 percent of the errors ("Obtaining Supporting Documentation," which led to

detection of 19.4 percent of the errors, and "Analysis and Review," which led to detection of 17.4 percent).

Analytical Review and Informal Procedures

Analytical review is a catch-all term for a group of techniques of growing importance in auditing. In our study it included comparisons of current unaudited balances with prior years, predictions of current balances based on exogenous data, analyses of interrelationships among account balances, reasonableness tests, estimates of account balances and initial review.

Together with informal procedures such as discussions with client personnel and expectations from prior years based on a knowledge of the company, analytical review detected almost half of the errors resulting in an adjustment (45.6 percent). This figure may be somewhat misleading, though, because auditors normally use these methods before beginning detailed testing, uncovering errors that later procedures might also have turned up. However, this high percentage does underscore that analytical review, combined with various informal procedures, is at least as worthwhile as detailed tests, and is perhaps more cost effective since it requires less time to perform.

Although prior year expectations and discussions with clients turned up mostly large errors (about 25 percent of them), analytical review by itself detected both large and small errors in almost equal proportions. As Table 1 indicates, auditors using analytical review found 31.7 percent of the small errors they reported, and 30.5 percent of the large errors. They found most small errors by using analytical review procedures on small subsidiary trial balances and other balances supporting aggregate financial statements. Since analytical review takes little time while finding a large proportion of both large and small errors, practitioners designing and conducting audits should emphasize these procedures where possible, in lieu of detailed testing, to reduce audit costs.

Analytical review and informal procedures are already required for limited reviews of interim and other unaudited financial statements. Professional standards require auditors to conduct inquiries, obtain a familiarity with a client's accounting practices, and apply analytical review and other general audit procedures (SAS No. 10). The study findings seem to validate the effectiveness of limited review procedures for unaudited financial statements.

Confirmation and Physical Inspection

The study findings show that confirmation and physical inspection procedures detect few errors. As Table 2 indicates, out of the 281 errors reported, these procedures found only 2.9 percent, or 8 errors. Additionally, of the seven errors detected through confirmation procedures, three of them were identified before the confirmations were actually sent.

Other research studies[4] have also cast doubt on the effectiveness of confirmation procedures. In these studies, researchers manipulated the dollar amounts they asked recipients to confirm. Although these confirmation requests contained incorrect amounts, many recipients nonetheless confirmed them. Because confirmation and physical inspection procedures do not appear

Table 2
Errors Detected by Tests of Detail

		Percentage
Physical Inspection Procedures		0.4%
Confirmation Procedures		2.5
Test Footings and Extensions		2.8
Obtaining Supporting Documentation:		
Externally Prepared	11.4	
Internally Prepared	3.2	
Legal Documents	2.5	
Combinations of Above	1.4	
Prior Years' Workpapers	0.7	
		19.4
Analysis and Review[a]		17.4
Scan		3.2
Other		1.8
TOTAL		47.3%
Number of Errors		133

[a] Analysis and review of internal information including account balance details, account balance detail activity, client work-ups, account classification and data consistency.

to detect most errors and are quite time consuming, these procedures may not be very cost effective.

The questions raised about the value of confirmation and physical inspection in this and other studies should spur practitioners to re-evaluate the objective of using these procedures. For instance, are confirmation and physical inspection actually most useful in detecting and preventing fraud? These procedures, in fact, first became required in response to the massive McKesson & Robbins fraud in the 1930's, which went undetected despite an audit. Unfortunately, the results of our study show little about detection of frauds, since only 10 of the reported errors were considered intentional, and they were not necessarily fraudulent.

If the primary audit objective in performing confirmation and physical inspection is indeed not to detect unintended errors but rather to prevent and detect fraud, different standards may be appropriate in selecting sample sizes for these procedures. For instance, merely performing limited confirmation and physical inspection procedures in and of themselves may be sufficient to deter frauds of certain types, regardless of the sample sizes used. Also, because fraud is relatively infrequent in comparison to unintended errors, as demonstrated by this study, sample sizes might be reduced.

Other Tests of Detail

A significant number of errors were detected by tests of detail other than confirmation and physical inspection procedures. These test procedures found 44.4 percent, or almost half of the errors. Almost all of these detailed test procedures relied on client-supplied documentation.

One interesting result is the large percentage of these errors detected through detailed tests that used internally-prepared documentation. This category includes at least the 17.4 percent of the errors detected through analysis and review, the 3.2 percent resulting from obtaining internally-prepared supporting documentation and perhaps portions of other categories not specifically broken out. In contrast, obtaining externally-prepared documentation led to detection of only 11.4 percent of the errors.

For the audit practitioner, these findings indicate that externally-prepared documentation is no more likely to be a source for detecting errors than internally-prepared documentation. Assuming that most errors are unintended, internal documents should be no less reliable than external documents and may indeed be a more direct means to uncover errors. This result seems to contradict the emphasis in the auditing literature on externally-prepared documentation.

Overall, the findings for detailed tests show that these procedures detect a large number of errors and they should continue to be emphasized. Auditors should, however, closely consider the appropriate mix of detailed test procedures in light of results of this study. These tests also seem to detect more small errors than large errors, indicating they may be effective in finding errors that informal procedures do not detect.

Why Errors Occur

Most errors that auditors discover appear to be unintentional. Auditors participating in the study considered fewer than 4 percent, or 10 out of 281, of the reported errors to be made purposefully. Another important finding is that errors discovered tend to understate as often as they overstate company income. Further, most errors did not seem to be the result of major systems or procedural problems, but rather resulted from various personnel and related problems including inexperience, inadequate knowledge of accounting and errors in judgmental amounts.

Personnel Problems

Personnel problems, as defined in this study, included turnover and the resulting inexperience of new employees, incompetent or poorly-trained employees, and excessive time pressures on employees. These problems (Table 3) accounted for 26.3 percent of the errors, many of them leading to major audit adjustments. Two related causes were lack of knowledge of accounting, including basic accounting concepts, new pronouncements, and other principles. Auditors cited this problem as a cause of 15.0 percent of the errors, and judgment errors as causing 15.3 percent of the errors. (These percentages cannot be added because multiple causes were cited for some errors).

Practitioners should be aware that personnel factors can affect the reliability of financial statements. Auditors should consider, for instance, reviewing the experience of accounting personnel in light of their current responsibilities, the rate of turnover among accounting personnel, and the provisions for replacing terminated or vacationing employees. They could look

Table 3
Causes of Errors

Categories	*Percentages*[a]	*Average Dollar Size*	*Average Percentage of Assets*
Personnel Problems	26.3	$180	1.19%
Insufficient Accounting Knowledge	15.0	$143	3.29%
Judgment Errors	15.3	$627	.74%
Cut-off or Accrual Errors	38.1	$236	.96%
Mechanical Errors	12.5	$67	.35%
Inadequate Control, Follow-up or Review	9.3	$135	.72%
Miscellaneous	19.2	$53	.58%

[a] Percentages add to more than 100% due to double counting of some errors attributed to more than one cause.

at personnel factors as part of their regular review of a client's internal controls. If they note significant personnel problems, it may indicate a need for more testing of the affected audit areas, and procedures directed towards specific transactions handled by new or inexperienced personnel.

Cut-Off and Accrual Errors

Another important cause of the errors cited was improper cut-off and accrual of accounts at year-end. These errors, which comprised 38.1 percent of total error, averaged about 1 percent of company assets. The findings indicate that the traditional emphasis placed on verifying year-end balances by examining transaction cut-offs and accruals is justified. Since most of these errors occurred in small companies, auditors may wish to perform a balance sheet audit on these companies stressing substantive tests on year-end balances rather than reviews of on-going controls. This is, in fact, the approach often taken for small companies.

Mechanical Errors

This category includes posting, coding, footing and extension errors. Although the study found that 12.5 percent of the errors reported were mechanical errors, many were small, averaging only 0.35 percent of company assets. Audit procedures specifically intended to detect a subset of these mechanical errors, footing and extension errors, actually found very few errors (2.8 percent of the total errors reported). These findings may suggest that less time should be devoted to uncovering these relatively small mechanical errors, particularly in large companies where material errors of this type are rare.

Where Errors Occur

We have summarized those auditing areas in which errors most frequently occur in Table 4. Auditors reported the majority of the errors (56 percent) in

five audit areas: (1) sales & receivables, (2) purchases & payables, (3) inventory and production, (4) other assets, and (5) fixed assets. These concentrations of errors differ somewhat by industry. For industrial companies, for instance, 31.7 percent of the errors involved inventory and production, while for wholesale and retail companies, 44.9 percent of the errors occurred in the sales and purchases cycle combined. The distribution of errors also differs for financial and service industries.

A concentration of errors into specific audit areas may suggest that auditors should devote more time to these areas during an examination than to those where few errors are expected. In fact, most auditing firms already identify critical areas of particular importance before beginning actual fieldwork, and perform additional testing and review in these areas. The results of this study confirm the worth of this policy for planning an audit.

Table 4
Where Errors Occur[6]

Audit Area	*All Companies*	*Industrial*[a]	*Wholesale*[b] *& Retail*	*Financial*[c]	*Service*[d]
Cash	2.1%	1.6%	—	4.7%	2.3%
Securities & Investments	3.2	—	2.6%	4.7	2.3
Sales & Receivables	15.7	11.2	18.4	5.9	38.6
Notes Receivable	5.7	1.6	2.6	16.4	—
Inventory & Production	11.3	31.7	7.9	4.7	4.5
Other Assets	7.5	4.8	5.3	7.1	6.8
Fixed Assets	10.0	3.2	15.8	8.2	18.2
Long-Term Debt	3.9	1.6	2.6	5.9	4.5
Purchases & Payables	11.0	15.8	26.3	5.9	4.5
Income Taxes	4.2	4.8	5.3	4.7	—
Other Liabilities	7.8	1.6	2.6	18.4	2.3
Stockholder's Equity	3.5	6.3	—	1.2	2.3
Commitments & Contingencies	3.9	7.9	—	1.2	6.8
Labor Costs and Benefits	5.0	4.8	5.3	7.1	2.3
Other Income	3.6	3.2	5.3	2.4	2.3
Other	2.1	—	—	1.2	2.3
Total Percentage	100.0%	100.0%	100.0%	100.0%	100.0%
Number of Errors	281	63	38	85	44

[a] SIC Nos. 2 and 3
[b] SIC Nos. 5
[c] SIC Nos. 6
[d] SIC Nos. 7 and 8.

The study findings also indicate that errors tend to occur more frequently in smaller companies. Although companies included in the study were broken into three categories of almost equal size, containing approximately 50 companies

each, many more errors were reported for companies in the small size category than for either the large- or medium-sized category (see Table 5). These results may indicate that controls to prevent errors are lacking in small companies and that auditors should be more concerned with the possibility of unintended errors when examining small companies.

Table 5
Company Sizes[6]

	Large[a]	*Medium*[b]	*Small*[c]
Number of errors	66	92	123
Number of Companies	49	52	51
No-Error Companies	23	22	12

[a] Assets greater than $50 million.
[b] Assets of $10 to 50 million.
[c] Assets less than $10 million.

Preventing Errors

Beyond the auditing implications of financial statement errors, practitioners have an opportunity to assist their clients in preventing errors that might show up in financial statements. The study results indicate certain areas where improvements in management practices could potentially reduce accounting errors.

Pre-Audit Review

The apparent effectiveness of analytical review and "informal" auditing procedures suggests that clients can benefit from using similar techniques to uncover and correct potential accounting errors before a year-end audit begins. Comparable internal procedures might include reviews of internal budgeting, planning, and other financial data using various analytical techniques such as ratio and trend analysis. Comparison of recorded financial data to budgeted amounts, for instance, often uncovers errors. Also, companies can use statistical techniques similar to audit tests to estimate expected account balances.

Client internal auditors can perform pre-audit reviews through discussions with preparers and users of accounting records. Discussions lead to detection of a surprising number of errors and identification of likely potential sources of errors. Employees who are aware of possible errors often are not given the opportunity to report or correct them and may have no specific responsibility to do so. Procedures and policies encouraging accounting and operating personnel to help correct known or potential errors can be an effective preventive measure.

Personnel Policies

Clients can take steps to reduce errors caused by personnel problems and other related causes. Improvements in personnel policies may reduce turnover

in the accounting staff. Hiring and promotion practices, employee pay scales, benefits programs, and staffing levels all have an impact on turnover. Also, screening of new employees during hiring and promotion should ensure that all accounting employees possess a basic understanding of accounting concepts and principles.

Accounting Department Organization

The proper organization and delegation of accounting department responsibilities may help clients to eliminate potential personnel problems that cause errors. Employee errors may be reduced if the department has clearly-defined job responsibilities, written job descriptions, and standardized procedures. Information about the organization and definition of duties may be particularly useful to employees who are unfamiliar with new responsibilities. Adequate department staffing is also important.

Accounting Expertise

Improvements in accounting expertise among accounting personnel can eliminate potential sources of errors. Companies can improve training, introduce self-study courses, and circulate current accounting pronouncements and other literature to accounting personnel to increase their knowledge of advanced accounting concepts and new pronouncements.

Conclusions

The study findings and implications may suggest the following scenario for a more effective and efficient audit:

The audit team members plan the examination to emphasize areas where errors are most likely. During a review of internal accounting controls, the auditors assess the level of experience and competence of client personnel to determine where errors are more likely despite adequate internal accounting controls. The client's industry may also indicate likely sources of error.

In the interim phase, members of the audit team review prior-year workpapers and other documentation, conduct analytical reviews, and discuss areas of concern with the client. The auditor can feel assured that these relatively easy procedures will uncover a major portion of any errors. These initial steps will also help further define those areas that warrant additional detailed tests.

During the year-end audit, the time needed and cost for detailed testing require the auditor to apply these techniques selectively. Wherever possible, analytical review procedures are applied to small accounts and areas where errors are not likely, supplemented only by limited detailed testing and compliance tests. Tests of detail are applied extensively only where errors are considered to be a distinct possibility. These tests include extensive analysis and review of client records and comparison of recorded balances and transactions to supporting documentation. Extensive tests of detail are also applied to year-end transactions to uncover errors in cut-offs and accruals, particularly for small companies. Tests of footings and extensions are held to a

minimum and are performed only to verify the basic integrity of client supplied documentation. As a precaution against fraud, the audit team sends a limited number of confirmations and, where appropriate, inspects inventory for a small sample of items at each company location.

Upon completion of the examination, the audit team will know the potential sources and causes of accounting errors and can assist the client to prevent the recurrence of similar errors. Such assistance might include improving personnel policies, accounting department organization, and expertise of accounting employees. At the conclusion of the engagement the practitioner will have made a significant contribution towards preventing the recurrence of similar accounting errors and has also helped to reduce future audit costs as a result.

This scenario is, of course, speculative. It is intended only to project some possible implications of the study and to stimulate further discussion into the issues raised. I hope that this research will lead to further study that will be beneficial both to practitioners and to client financial executives.

Footnotes

1. I wish to acknowledge the contributions of Janet Lewis, of Peat, Marwick, Mitchell & Co., who assisted in preparing this paper.

2. See R.E. Hylas, and R.H. Ashton, "Audit Detection of Financial Statement Errors," *The Accounting Review* (forthcoming).

3. Categories in Table 1 include the following quoted from the article referenced in (2).

> Our definition of *analytical review* was broad. It included procedures such as comparisons of current unaudited balances with balances of prior years, predictions of current balances based on exogenous data, and analyses of interrelationships among account balances. It also included what the auditors referred to as "reasonableness tests," "estimates" of account balances, and "initial review." The latter term refers to a cursory review of financial statements in the early planning stages of an audit.
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> The category "Tests of Detail" is further categorized in Table 2: *Analysis and review* involves the examination of transaction or balance components of data produced by or contained in the client's accounting system. It involves examination of transaction amounts and descriptions, account balance details, "work-ups" to support account balances, and data appearing on various types of reconciliations. *Supporting Documentation—Externally Prepared* involves comparisons of accounting data with evidence obtained *outside* the client's accounting system. It includes reference to confirmations, invoices, cancelled checks, test counts, and checks of mathematical accuracy. *Scan* involves a cursory review of transactions or the details supporting balances, in a search for unusual items or obvious errors. This category may be contrasted with analytical review, which involves entire account balances or other aspects of overall activity.
>
> The category "General Procedures" includes reviews of accounting policies and procedures, legal letters, and minutes of boards of directors' meetings. "Estimates of value" includes both auditors' estimates and their evaluations of clients' estimates involving, for example, uncollectible accounts, net realizable value of inventory, losses on discontinued operations, and contingent losses.

4. See Davis et al. [1967], Hubbard and Bullington [1972], Sauls [1970, 1972], Sorkin [1978], and Warren [1974, 1975].

5. From article referenced in footnote (2). Nine errors excluded where no specific cause was identified, and ten additional errors excluded which were considered to be intentional. The following comments apply to the categories.

> The first category, *Personnel Problems*, refers to such things as turnover, new or inexperienced client employees, carelessness, incompetence, and time pressures. A related category, *Insufficient Accounting Knowledge*, includes errors caused by insufficient awareness of general accounting concepts, promulgated accounting principles, and specific accounting policies of the client. The category of *Judgment Errors* refers to items that had to be estimated because exact dollar amounts could not be determined, e.g., estimates of uncollectible accounts, obsolete inventory, and contingencies. Insufficient information at year-end, as well as "poor" or "unreasonable" estimates

based on adequate information, were cited by the auditors as the major causes of problems in this category. *Cut-off or Accrual errors* refers to incomplete, poorly-executed, or omitted cut-off or accrual procedures at year-end. The *Mechanical Errors* category refers to procedural errors—e.g., posting, coding, keypunching, footing and calculation—made by employees considered normally to be competent and conscientious. *Inadequate Control, Follow-up or Review* procedures includes errors caused by failure to perform, for example, reviews of old account balances for collectibility, follow-ups of reconciliation differences, and established internal control procedures. The *Miscellaneous* causes category includes, for example, errors that the auditors ascribed to coordination or communication problems, the use of outside service bureaus, the use of estimated amounts instead of actual amounts, differences between client accounting policies and generally accepted accounting principles, misunderstanding of contract terms, and inability to handle unusual items properly.

Of the above errors, the ten classified as *intentional* were considered by the auditors to have been purposely caused by client management or employees. In some cases the auditors were confident of this interpretation; in others, they only suspected that the errors were intentional.

6. From the article referenced in footnote 2.

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