Multilocation Audit Risks

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Abstract

Multilocation audits (MLAs) pose unusual risks for external auditors. Recent lawsuits against auditors manifest these risks. Despite the complexity and risk, there is little existing research and/or professional guidance that address MLA issues. This sparsity is especially surprising given that most companies of medium and large size conduct business activities in multiple locations. The purpose of this paper is to identify risks that exist in a MLA environment that do not necessarily exist in a single-location audit. The MLA risk framework was developed by 1) identifying risk factors specific to MLAs that we believe are important in audit planning, 2) evaluating the risk factors through interviews with MLA experts, 3) examining the policy and procedure manuals of public accounting firms, and 4) relating the risk factors to the audit risk model. The paper is intended to provide a framework for future research related to MLAs.

Introduction

On August 17, 1992, Phar-Mor Inc. filed for Chapter 11 bankruptcy protection. This news was extremely surprising given Phar-Mor's reported earnings during the preceding three years. Reports allege that Phar-Mor was the victim of a massive management fraud. Central to the alleged fraud is the value of the inventory at Phar-Mor's 300 stores. Inventories were materially overstated, allowing the company to show non-existent profits over the preceding three years. Generally accepted auditing standards require that auditors observe a company's year-end inventory count. When many locations are involved it is common for auditors to select a sample of locations to observe inventory and perform other audit tests. It would have been prohibitively expensive for Coopers & Lybrand to visit all 300 Phar-Mor locations. David McLean, an attorney for Coopers & Lybrand, said that Phar-Mor executives "made bloody sure there was nothing wrong with

the inventory in the stores we checked. The manipulation was in other stores we didn't go to." (Stern, 1992).

Companies with large numbers of locations pose unusual risks for external auditors. By "location" we mean a definable, physically separable segment of the entity regardless of organizational form. For example, a location might be a plant, a division, or a subsidiary (with sub-locations of its own). The separability of the location, for our purposes, would relate to its audit implications, i.e., whether assets were situated at the location or accounting processes and/or decisions were conducted there. Unfortunately, there is little explicit guidance from auditing research or professional standards for auditors to follow in dealing with these risks.

The purpose of this paper is to develop a framework of multilocation audit (MLA) risks. The framework was developed by 1) identifying risk factors specific to MLAs that we believe are important in audit planning, 2) evaluating the

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risk factors through interviews with MLA experts and 3) examining the policy and procedure manuals of public accounting firms. The framework is intended to serve as a starting point for future research related to MLAs.

The remainder of the paper is divided into four sections. The first section discusses the importance of MLA issues including a review of the existing literature. The second section describes the MLA risk factors. Section three is a presentation and discussion of the interview results and the contents of participating firms' policy and procedure manuals. The paper concludes with a discussion of future research that is needed to increase general understanding of MLAs.

Literature Review

MLAs warrant research attention for at least three reasons: 1) the need for better MLAs, evidenced by a number of highly publicized alleged audit failures that involve multilocation issues, 2) the absence of professional guidance, even though many MLA clients are very complex, and 3) little prior research that addresses the first two issues.

Need for Better MLAs

Anecdotal information suggests the need for more effective and efficient MLAs. Public accounting firms are under increasing scrutiny as a result of a large number of highly publicized audit failures in recent years. Some of these alleged audit failures appear to be connected to MLA issues. In addition to the Phar-Mor case mentioned in the introduction, ZZZZ Best Carpet and Doughties Foods are examples of alleged audit failures with MLA implications.

ZZZZ Best auditors were deceived by the company's CEO, when making visits to the site of a large insurance restoration project. Similar projects made up a material portion of ZZZZ Best's reported earnings. The highly

material insurance restoration projects were largely fictitious. Subsequent investigations indicated that the CEO spent over a million dollars to deceive the auditors by "renting" a building under construction.

The inventories of one of Doughtie's divisions were overstated by an ambitious Division Manager. Subsequent investigation indicated that the company's consolidated net income had been overstated by 15 percent in 1980 and 39 percent in 1981, as a result of the Division Manager's inventory overstatement scheme. (Knapp, 1993). Anecdotal information suggests that MLA issues exist with regard to other alleged audit failures.

Professional Guidance

Furthermore, auditing standards and textbooks do not provide any specific guidance for MLAs. SAS 47 discusses overall audit risk and materiality, but does not address the subject any differently for single-location audits and MLAs (AICPA, 1983). In addition, the Canadian Institute of Chartered Accountants commissioned a study on the extent of audit testing. One of the conclusions of this research study is that there is no authoritative guidance provided on the extent of testing decisions for multilocation audits (CICA, 1984). Auditing textbooks are also lacking in their coverage of auditing in a multilocation environment. Aldersley and Leslie (1984) comment on the lack of attention to MLAs in the academic and professional literature: "It is surprising that this matter has received so little attention when one considers this problem is encountered on most audits of medium and large entities." (Aldersley and Leslie, 1984).

Prior Research

To date three fundamental MLA issues have been addressed by published research studies. First, sample size issues: the number of locations that should be visited and the appropriate

sample size for the locations visited are addressed by Leslie (1981), Godfrey (1983), Aldersley and Leslie (1984), and Kim et al. (1987). Second, the usefulness of cross-sectional analytical procedures to identify problem locations are addressed by Aldersley and Leslie (1984) and Neter (1981). Third, research in internal auditing has focused on the audit resource allocation problem (Patton, et al. 1983; Boritz, 1986; Boritz, 1983; Knechel, 1991). These studies comprise the published research projects dealing explicitly with the multilocation audit environment.

These studies address issues that are very important to auditing in a multilocation environment; however, the studies do not explore many of the risks faced by auditors in a MLA setting nor do they address the relationship between these risk factors and auditor decisions in planning and carrying out a MLA.

Identification of MLA Risk Factors

One important part of planning a MLA is to allocate audit effort among the various locations of the consolidated entity. The auditor must determine the level of effort to exert at specific locations. The level of testing performed at a given location can vary. For example, the auditor may decide only to perform analytical procedures for some locations, or to perform numerous detailed audit tests at other locations considered more critical to the consolidated financial statements. There are a number of factors likely to influence the auditor's planning decisions related to effort to exert at specific locations. This section identifies nine risk factors unique to MLAs.

The nine risk factors were identified based on a search of the professional literature, prior experience with MLAs, and discussions with practitioners and other researchers who have considered MLA issues. We believe that these factors are unique to MLAs and we expect them to have a significant impact on audit plan-

ning. The risk factors are as follows: 1) Degree of centralization of accounting records and decision-making, 2) Diversity of locations, 3) Special reporting requirements, 4) Effectiveness of internal controls, 5) Effectiveness of internal audit function, 6) Number of locations, 7) Proximity of locations, 8) Dollar value distribution and 9) Global operations. Each of these is discussed next.

Risk Factor 1: Degree of Centralization

The degree of centralization influences audit risk along at least two important dimensions. First, the degree of centralization of the accounting information system influences MLA risk. Second, the degree of centralization of managerial decision-making also affects MLA risk.

The nature of the accounting information system has a unique effect on audit risk in a MLA. At one extreme a multilocation company could maintain decentralized accounting records. Each location could be responsible for tracking its own operating performance. Each location could be responsible for billing and collecting receivables, making payments of their own obligations, and performing the related record-keeping, perhaps even using software and hardware different from other locations. At the end of each accounting period the decentralized records from each location could be combined into a single set of financial statements upon which an audit opinion is to be rendered. In this case, significant audit testing would be required at many of the individual locations in order to collect sufficient competent evidence to render an opinion on the financial statements. At the other extreme, a company might maintain centralized accounting records at a single headquarters location. Results from operating performance of all locations could be processed at a single location. Control over certain assets, such as cash, receivables, and marketable securities could also be centralized. Processing and payment of payables could also be centralized. While fixed assets

would be located at many locations, record-keeping and accounting for these fixed assets could take place at a single, centralized location. Thus, the audit could be conducted almost exclusively at a single headquarters location, with the exception of certain verification tests (e.g., inventory, fixed assets) that would be conducted at selected locations.

The degree of centralization of managerial decision-making and control over assets also influences audit risk. If decision-making and control are centralized, it is easier for the auditor to obtain important information about the company's current status, intentions, and future directions thereby reducing risk. However, if decisions are dominated by a single person, then the risk of misstatement is greater (AICPA, 1988a). This dominance could exist at outlying locations or at one central location.

The level of centralization of accounting systems and decision-making is likely to vary within and between companies. Auditors must select an appropriate mix of testing required at each location and at the headquarters location, based on professional judgment. Generally, however, decentralized accounting systems and managerial decision-making are associated with greater audit risk than centralized accounting systems and decision-making.

Risk Factor 2: Diversity of Locations

Multilocation entities can take different forms. Some multilocation entities have a single line of business. For example, McDonalds operates a single line of business, with thousands of similar locations all over the world. Other entities operate multiple lines of business each with multiple locations. For example, PepsiCo operates many different subsidiaries in different lines of business, each with multiple locations.

The addition of a separate line of business compounds the difficulty of an audit beyond simply increasing the quantity of audit work.

SAS 22 requires that the auditor obtain a reasonable understanding of the client's industry (AICPA, 1978).

An additional line of business greatly increases the scope of an audit. The more diverse the lines of business, the greater the cost required to obtain the necessary expertise. In addition, systems may differ across lines of business, reducing the potential audit leverage that can be obtained from testing internal controls. (See Risk Factor 4) All other things equal, there is greater audit risk associated with entities operating multiple lines of business.

Risk Factor 3: Special Reporting Requirements

Audit reports required by entities with multiple subsidiaries vary substantially. Some entities with multiple subsidiaries require separate audit reports for some subsidiaries in addition to an audit report for the consolidated entity. Foreign subsidiaries are often subject to statutory requirements for a separate audit report. Separate reports are also needed for individual subsidiaries that obtain their own financing. Other entities do not require separate audit reports for subsidiaries. The parent may secure financing for all and, therefore, only require a single audit report for the consolidated entity.

Auditors are responsible for each opinion rendered. The auditor bears additional risk for each audit opinion rendered. If the auditor is required to render an opinion on several segments in addition to the consolidated entity, more evidence is required. The auditor must not only be confident that the financial statements of the conglomerate are fairly stated, but that the financial statements of the individual subsidiaries are fairly stated. Materiality levels for individual subsidiaries are smaller (and therefore require more evidence) than materiality levels for the consolidated entity. Therefore, it requires considerably less effort for the auditor of a large conglomerate to obtain sufficient evidence to render an opinion on the consolidated financial

statements only than to render opinions on the parent and each segment. The greater the number of audit reports required, the greater overall audit risk.

Risk Factor 4: Effectiveness of Internal Controls

As with single-location audits, audit risk is inversely related to the strength of internal controls. Stronger internal controls mean less risk of material misstatement, and may therefore allow the auditor to visit fewer locations than if controls are weak.

However, the strength of internal controls may vary from one location to another. Internal control procedures may not be the same from one location or segment to another. Different business segments may have different means of maintaining controls over assets and accounting records. The addition of different types of internal control systems adds additional complexity to the audit. SAS 55 requires the auditor to obtain an understanding of the client's internal control structure (AICPA, 1988b). To the extent that there are multiple internal control structures for the same client, there is greater complexity in this task.

Even when internal controls are relatively standard across locations and segments, the level of compliance with internal controls may vary from one location or segment to another. The task of evaluating compliance with established controls is complicated by the advent of multiple locations. Evaluating internal control strength is further complicated by the fact that compliance may vary by transaction cycle within the same organization. The auditor must evaluate compliance at an appropriate number of locations, commensurate with the size and nature of the auditee.

Risk Factor 5: Effectiveness of Internal Audit Function

Multilocation companies generally em-

ploy internal audit departments as an important part of their internal control structure. External auditors may rely on internal auditors in multilocation audits, both as an internal control and to provide direct assistance. In a single-location audit environment, auditors can more easily compensate for a lack of internal auditing than in a multilocation environment. Multilocation clients with large, competent, and objective internal audit departments greatly reduce the risk born by their external auditors.

Risk Factor 6: Number of Locations

The number of locations in a MLA may vary from a few locations to thousands of locations. If the number of locations is small, then each location is likely to be material to the consolidated financial statements, all other things being equal. Conversely, when the number of locations is large, it is less likely that a single location would have a material impact on the consolidated financial statements. Therefore, the number of locations is inversely related to audit risk.

Risk Factor 7: Proximity of Locations and Transferability of Assets

Close proximity of client locations increases the possibility that assets may be transferred between locations. For example, close proximity makes possible the switching of inventory from one location to another, in between inventory observations. One example of inventory switching occurred in what is now referred to as the "salad oil scandal." This fraud involved a number of different schemes to fool auditors. One scheme used was to pump large quantities of salad oil underground during the lunch hour from tanks examined by the auditors in the morning to tanks that were to be examined in the afternoon. Another frequently cited example is a financial institution that moves securities among branches to falsely establish the validity of overstated amounts. Close proximity of locations increases the risk of certain types of

fraud.

Interviews and Policy and Procedure Manuals

Risk Factor 8: Distribution of Dollar Values Between Locations

Information Gathering Procedures

For each account balance of interest in a particular MLA engagement, there is a distribution of dollar values across locations. In some situations, a few locations may contain a large percentage of a recorded account balance. In others, the recorded value of an account balance may be evenly distributed across the different locations. Where there is an uneven distribution, the auditor is able to test a large percentage of the recorded value by visiting a small number of locations. It is more costly to audit when the dollar values are evenly distributed among many locations because more locations must be visited to obtain required levels of assurance; however, it is less likely that a material error will occur because it would have to be the aggregate of errors across many locations. Generally speaking, even distributions between many locations are associated with lower audit risk than if a higher percentage of the dollar value is concentrated at a few locations.

Figure 1 contains a summary of the foregoing discussion. Each of the risk factors is listed in the center bar. Attributes of companies associated with high risk are listed at the top of the figure. Attributes of companies associated with low risk are listed at the bottom of the figure.

The nature of these risk factors may vary within the same entity. For example, the distribution of dollar values in accounts receivable population may be concentrated at a few locations, while the distribution of dollar values in inventory may be relatively similar across all locations. Similarly, the strength of internal controls may vary for different accounts and locations. Therefore, examination of these risk factors must begin at the account level.

The risk factors identified in the previous section were evaluated by conducting interviews with MLA experts. Six experts representing five Big 6 firms and one other large international firm, were interviewed using a structured list of questions. Each interview was recorded and transcribed. The results of the interviews were summarized in a single document which was returned to the participants. Participants were asked to read the summary and indicate whether they agreed or disagreed with the summary for each question. Minor modifications were made to the summary based on participants' comments. The participants had an average of 12.1 years experience in public accounting (a high of 18 years and a low of 7 1/2 years). Participants were selected, in most cases, by the respective office managing partner on the basis of their experience with multilocation clients. The participants included 1 manager, 4 senior managers and 1 partner. All six had extensive experience with many multilocation clients.

In addition, each participant was asked to supply us with the sections of their firm's policy and procedure manual related to MLA engagements. Two of the participants were unable to comply with this request because firm permission to supply the manuals was denied. The four manuals obtained were examined to determine their consistency with the MLA risk factors identified earlier.

The contents of the policy and procedure manuals tended to focus on three primary issues: 1) communication between practice offices in various locations, 2) factors influencing audit planning and which locations to emphasize, and 3) procedures for selecting locations and projecting sample results. Each of these issues is discussed next, followed by a discussion of implications of the issues raised by the interviews

and the policy and procedure manuals.

Delegating responsibility and coordination between offices

All four of the manuals obtained focused on specifying responsibilities between the primary office and supporting offices. The manuals emphasize the importance of communication between offices and often specify the types of communications that should take place between the practice offices involved in the MLA. For example, the primary office is responsible to communicate to the supporting office the scope of the engagement, staffing requirements, and reports required for the engagement. The engagement partner in the primary office has ultimate responsibility for the engagement. The manuals also explain the responsibilities of the supporting office to alert the primary office to special circumstances or errors that might affect the overall conduct of the audit and to be responsive to requests from the primary office.

Identifying which locations to emphasize.

Some (but not all) of the manuals specified factors that should be considered in selecting segments or locations for greater emphasis. The factors mentioned include:

- * Extent to which the segments are important in relation to critical audit objectives.
- * Results of prior audits (e.g., where problems were encountered in the past).
- * Profitability of the segments relative to expectations.
- * Extent to which centralized controls are applied by the head office.
- * Extent of accounting information, including computerized aspects, with respect to the segments available at the head office and the results of review of that information.
- * Degree of uniformity of the internal control structure.
- * Locations and significance of EDP opera-

tions.

- * Extent of coverage by the internal auditors.
- * Significance of the portion of the assets and liabilities of the entity or contribution to its results controlled or accounted for by the location.
- * The extent of intercompany transactions.

Selecting a sample from and projecting sample results to a population at multiple locations

Some (but not all) of the manuals comment on projecting sample results to a population at multiple locations. A two-stage sampling approach can be employed in which the auditor selects a representative sample of locations in the first stage, and then from each of these locations selects a representative sample of items to test. Sample size is adjusted upward so that total sample size for the sampled locations will be large enough to permit reliable conclusions for the entire population.

Implications

Global Operations Risk Factor

Results of the interviews and the contents of the policy and procedure manuals are generally consistent with the risk factors identified earlier. However, the responses and procedure manuals indicated the need to add one additional MLA risk factor: global operations. Respondents indicated that differences in language, culture, and accounting and auditing standards increases the risk associated with global MLAs. The risk associated with a client's global operations is also alluded to in the participating firms' policy and procedure manuals. All of the manuals specify the importance of communication between primary and secondary offices. Accounting and auditing rule diversity across locations also adds additional risk to MLA engagements. Finally, respondents indicated that some parts of the world are risky places to conduct business. Unstable governments and economic conditions create risk for MLA clients.

Figure 1

Multilocation Audit Risk Factors

Fee Negotiation

The results also suggested that audit fees may be negotiated on a global basis for some large international audit clients. The fee is then allocated to local offices on the basis of work performed. This raises the (non-audit) risk that the extent of procedures performed at a given location may be driven more by the economics of a centrally mandated fee allocation than by the audit risks that exist at a given location.

Importance of Internal Control

In addition, the interviews and manuals suggest that internal control strength is especially important for MLAs because the cost of collecting substantive evidence is magnified in a MLA. Strong controls may allow the auditor to reduce the number of locations to be visited. Respondents also indicated that control strength can vary by location. One respondent asked the question, "How can controls at locations be relied upon unless they are tested each year?"

Surprise Visits

Finally, it may be especially important in MLA's for auditors to vary audit procedures over time. Recent occurrences of management fraud suggest that fraud perpetrators are "getting wise" to auditors. They know enough about how audits are planned to hide their frauds where auditors will not find them. Use of "same-as-last-year programs" may be less useful in detecting fraud than procedures that are varied from one audit to the next. Whenever possible, it is probably best that the client not know in advance which locations will be visited. In addition, randomized visitation of locations may be superior to a rotating schedule. Perhaps perpetrators of management fraud know that auditors are most likely to visit large locations. Therefore, it may also be advisable for auditors to perform substantive tests at some smaller locations.

The MLA Audit Risk Model

In this section we take the risk factors developed through our literature review and validated through interviews and review of manuals and combine them with the audit risk model specified in SASs 39 and 47 (AICPA, 1981; AICPA, 1983). In developing the resultant MLA audit risk model, we discuss how the MLA risk factors interact in the context of the model.

The Audit Risk Model

SASs 39 and 47 set forth the following model:

$$AR = f(IR, CR, DR) \quad (1)$$

where,

AR is desired audit risk

IR is assessed inherent risk

CR is assessed control risk

DR is detection risk, determined as a function of AR, IR and CR, where the functional relationship is multiplicative

The audit risk model has been subject to a fair amount of study and comment (see, for example, Cushing and Loebbecke 1983; Kinney 1983). Our purpose is not to debate the issues raised by other researchers, but rather to use the model as a framework for considering MLA risk factors.

Relationship of MLA Risk Factors to the Audit Risk Model

In a MLA environment, the auditor must not only deal with the same inherent, control and detection risks that exist in a single-location audit, but must also address additional MLA risks. We believe the MLA risk factors, however, can be appropriately classified in accordance with the components of the audit risk model, as follows:

<u>Audit Model Component</u>	<u>MLA Audit Risk Factor</u>
Audit risk	Special reporting requirements (SR)
Inherent risk	Diversity of locations (DL) Global operations (GO) Number of locations (NL) Proximity of locations (PL) Dollar value distribution (DD)
Control risk	Centralization (CN) Effectiveness of controls (CE) Effectiveness of internal audit (IA)

Thus, the MLA audit risk model would be shown as:

$$AR = f(SR, IR, CR, DR) \quad (2)$$

where,

$$IR = f(DL, GO, NL, PL, DD) \quad (3)$$

$$CR = f(CN, CE, IA) \quad (4)$$

In this model, audit risk is set at the desired level, and the desired level is effected by special reporting requirements as well as normal considerations. In other words, if multiple reports are required, this would have the effect of requiring a lower aggregate audit risk at the level of the consolidated financial statements.

Inherent risk would be a function of single-audit factors and MLA factors as specified. The important consideration here is that the effect of factors on overall inherent risk is that they are *additive*. That is, the presence of each factor increases inherent risk, and they do not offset each other in any way.

Control risk would also be a function of single-audit factors and MLA factors; however, the relationship of the factors is that they are *compensatory*. That is, a weakness in one factor can be offset by a strength in another (e.g., weak location controls can be compensated by strong internal audit).

Future Research

We believe that the MLA risk model developed in this paper should serve as a starting point for future research related to MLA issues. This section contains a discussion of a number of specific MLA issues that could be addressed by future research.

Analytical Procedures

SAS 56 indicates that "expectations developed at a detailed level generally have a greater chance of detecting misstatement of a given amount than do broad comparisons.... Comparisons by location or line of business will usually be more effective than company-wide comparisons (AICPA, 1988c). Generally the risk that material misstatement could be obscured by offsetting factors increases as a client's operations become more complex and more diversified. Disaggregation helps reduce this risk."

Prior research in analytical procedures has primarily examined aggregate financial statement account balances. Studies that have used disaggregated data tend to examine monthly time-series data (examples include Wild, 1987; Wheeler and Pany, 1990; Knechel, 1986; Kinney, 1978; Kinney, 1979). For these studies, financial statement balances are disaggregated by time period as opposed to by location. Exceptions are Neter (1980) and Aldersley and Leslie

(1984). Additional research is needed to examine the usefulness of cross-sectional applications of analytical procedures that break down an organization's financial statement balances by location. Future research should also examine the relative usefulness of combining time-series and cross-sectional methods of conducting analytical procedures.

Decision Research

MLAs represent a potentially rich area of future research in behavioral decision making. MLAs can serve as an important setting from which a number of behavioral decision theories can be explored in greater depth. As indicated by Hogarth (1993), a number of topics could be "illuminated by studies in accounting settings thereby increasing both our knowledge of behavioral decision theory and accounting."

For example, MLAs represent a decision environment that is substantially more complex than the decision environment of a SLA. Hogarth (1993) suggests that a key result of behavioral research is that responses are sensitive to different aspects of the task environment. MLAs provide a setting that is considerably different than a SLA on many dimensions. Rigorous examination of these alternative settings may help push forward behavioral researchers' understanding of decision environments.

International Issues

MLAs involving global companies provide another significant opportunity for future research. Needles et al. (1991) provides an overview of the differences in auditing standards that exist between countries. The training and experience of practitioners, the nature of financial accounting principles, the nature of auditing standards and the attest function all vary from one country to another. Though there are broad similarities in what independent accountants actually do when conducting audits, additional research is needed to alleviate problems associated

with differences in the auditing function throughout the world (Pomerantz 1985). Research is needed to assess the impact of these numerous differences on the public accounting profession. In addition, the impact of cultural and language differences between countries also represent a potentially fruitful area for future MLA research.

Specific Practice Problems

The MLA setting represents a complex practice issue that provides opportunities for research that will contribute to improving audit efficiency and effectiveness. Understanding the nature of MLAs should allow researchers to focus on specific practice problems and conduct research projects to contribute to their solution. Examples of these might include: How to assess and control audit risk more effectively; how to organize a MLA to assure effective communication; how to allocate materiality among locations; and how to more effectively detect management fraud.

Conclusion

The current study presents a risk model for MLAs. The model was developed by identifying risk factors specific to MLAs, evaluating the risk factors through interviews with MLA experts and by examining the policy and procedure manuals of public accounting firms, and by relating the risk factors to the audit risk model.

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