

The Relationship Between Materiality Thresholds and Judgments of Fraud Risk

by Richard A. Bernardi, Associate Professor, School of Business and Economics, State University of New York at Plattsburgh and
Karen V. Pincus, Professor, Department of Accounting, University of Arkansas

Abstract

Researchers and practitioners have long debated the arguments in favor of and against providing specific mathematical materiality guidelines in auditing standards. Yet, there is little empirical evidence about the relationship between materiality thresholds and audit risk judgments in the absence of such guidelines. In this study, 152 Big Six managers evaluated materiality and risk for an audit simulation based on an actual case where material fraud was undetected. The auditor subjects were allowed to choose the evidence they would examine before reaching a decision. The major findings of the study are that while auditor materiality judgments differ, these differences were not statistically significantly related to either fraud risk judgments or the amount of evidence the auditors chose to examine before rendering their judgments. This empirical evidence does not support the need for specific quantitative guidance in accounting standards related to materiality. However, other considerations (such as concern for legal liability) could also have an impact on the advisability of providing specific quantitative guidance for setting materiality thresholds.

Introduction

The notions of risk and materiality are two of the most fundamental building blocks of auditing theory and practice. These notions take on added importance in the context of fraud detection, where the auditor's task may be further complicated by the auditee's attempt to misrepresent accounting numbers and where auditors who fail to detect material fraud may bear large litigation costs. In many nations, the investing public has grown increasingly vocal about their expectation that an audit should provide assurance concerning the absence of fraud in financial reporting (e.g., Cook, 1990; Mitchell, 1992; Public Oversight Board, 1993).

International Auditing Standard #11 asserts that audits should be planned and conducted "taking into consideration the risk of material misstatement of the financial information caused by fraud or error" [IAS #11, paragraph 11]. Yet, in these standards, the crucial concept of materiality is only abstractly defined as something important enough to matter to users of financial statements:

Materiality refers to the magnitude or nature of a misstatement (including an omission of financial information) either individually or in the aggregate that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would have been influenced or his decision affected, as a result of the misstatement. [IAS #25, paragraph 5]

Courts of law also have defined materiality abstractly. For example, the U. S. courts have defined materiality in cases such as *SEC v. Texas Gulf Sulphur*:

The basic test of materiality . . . is whether a reasonable man would have attached importance . . . in determining his choice of action in the transaction in question.

Although conceptually sound, these definitions offer no practical guidance as to how auditors should set materiality thresholds. Some countries--including Australia, Fiji, New Zealand and South Africa--recommend specific mathematical materiality guidelines in their auditing standards. Yet most countries--including the United Kingdom and other countries in the European Union and the United States--do not provide specific mathematical guidance for determining materiality in their auditing standards.

The chief argument against providing specific guidance for determining materiality is that materiality decisions are dependent on both quantitative and qualitative factors. For example, a 1975 Discussion Memorandum by the U. S.'s Financial Accounting Standards Board delineated seven types of factors that should influence materiality decisions: (1) environmental factors, (2) enterprise-related factors, (3) accounting policies, (4) uncertainty concerning valuation or realizability of assets or concerning future events, (5) circumstances surrounding a matter and its characteristics, (6) magnitude and financial effect of a matter in relation to other recorded amounts, statement presentation and disclosure, and (7) cumulative financial effects of matters not judged individually material [FASB, 1975]. Only the last two of these categories are subject to quantification. Overreliance on quantitative materiality thresholds could potentially lead to a dysfunctional discounting of qualitative considerations.

The chief argument in favor of providing specific mathematical guidance for determining materiality in auditing standards is that in the absence of specific quantitative standards, auditor judgments may lack consistency due to differing judgments about the magnitude of an error or omission considered to be material. The Accountants International Study Group [1974, p. 28] argued that users of financial statements would benefit from knowing specific quantitative materiality thresholds:

Guidelines would facilitate comparability and eliminate greatly diverse results under similar circumstances. . . . It is an obligation of the accountant to all users of financial statements to narrow areas of diversity and encourage meaningful comparisons.

In an increasingly litigious environment, there is also some concern that the lack of specific guidance could expose auditors to inconsistent court judgments. Jennings, Kneer and Reckers [1987] asked 56 judges, 90 attorneys and 121 CPAs to evaluate materiality for one of four cases involving inventory losses, eminent domain, lawsuits and bribes. Another sample of 50 CPAs, 55 bank loan officers, 46 credit managers and 50 Chartered Financial Analysts were asked to make materiality judgments for the same four cases, plus a fifth case involving losses from a discontinued product line. The results of both studies revealed a lack of consensus among the various groups as to the magnitude of a material error. Statistically significant differences in group means and relatively large variances were observed, leading the authors to call for standards that provide specific quantitative guidance for establishing materiality thresholds.

Additionally, in real world rather than experimental settings, some court judgments have hinged on a judge or jury's quantitative assessment of what constitutes a material error. For example, Carmichael [1969, p. 61] notes a U. S. case where such assessments were crucial to the court's decision and further argues that such court decisions support the need for accounting standards to provide specific quantitative guidance for evaluating materiality:

One of the noteworthy features of the BarChris case was the court's judgment on the materiality of errors in the financial statements. The court decided that errors in the income statement which caused the increase in earnings to be 197% instead of the reported increase of 227% were not material. On the other hand, errors in the balance sheet which caused the current ratio to be 1.6 instead of the reported 1.9 were found to be material. Even though the court's decision was a well-reasoned one, the striking feature of the case is that a nonaccountant had to make an accounting judgment without benefit of any guidelines from the accounting profession. The conclusion seems inescapable that there is a real and extremely serious need for materiality guidelines developed by the accounting profession.

This study examines several issues related to auditor judgments of materiality and risk in a fraud detection situation. In an experiment, 152 Big Six managers evaluated materiality and risk for a case based on an actual case where material fraud went undetected. While materiality judgments did differ, these differences were not statistically significantly related to the auditors' fraud risk judgments or the amount of evidence the auditors chose to examine before rendering their judgments. This empirical evidence does not support the need for specific quantitative guidance in accounting standards related to materiality. The research questions and research design are discussed in the next two sections, followed by a presentation and discussion of the results of the study.

Research Questions

Despite the lack of specific quantitative guidance in the standards of many nations for setting materiality thresholds, the research and practice literature contain a number of articles posing or documenting working "rules of thumb" auditors can use to determine whether an item is quantitatively material to the financial statements. For example, Holstrum and Messier [1982] reviewed a large body of empirical research on materiality and concluded that auditors treat items as material at some point between 5% of net income and 10% of net income. Leslie [1985] reviewed the U. S. and Canadian literature and interviewed U. S. and Canadian accountants and concluded that four rules of thumb predominated in determining quantitative materiality: (1) 5% of pre-tax net income; (2) 0.5% of total assets; (3) 1% of total equity; and (4) 0.5% of total revenues.

Leslie also noted that the Canadian Institute of Chartered Accountants (CICA) had recommended a fifth potential rule of thumb. The CICA [1965] proposed a sliding scale mathematical measure of materiality based on a declining percentage of gross profit as gross profit increased. This rule of thumb defined the materiality threshold as:

- (1) 2% to 5% of gross profit if gross profit is no more than \$20,000;

- (2) 1% to 2% of gross profit if gross profit is between \$20,000 and \$1,000,000;
- (3) 0.5% to 1% of gross profit if gross profit is between \$1,000,000 and \$100,000,000;

and

- (4) 0.5% of gross profit if gross profit exceeds \$100,000,000.

Finally, Leslie suggested a sixth rule of thumb: taking the average of the four most common simple rules of thumb and the proposed CICA sliding scale. Leslie argued that the "blend" of these five rules would reduce the impact of large revenue or net income fluctuations, because assets and equity tend to be more stable over time.

In the absence of quantitative guidance in auditing standards, many accounting firms have provided specific guidance for setting materiality thresholds for their own audit clients. For example, during the 1980s, Peat Marwick International, one of the world's largest public accounting firms, developed a quantitative materiality standard for its practice. The standard, known as "audit gauge," was developed based on a statistical study of Peat Marwick International audit clients. The standard has been updated over time to take into account inflation and other factors. Audit gauge is based on either assets or revenues, whichever is greater, according to the following mathematical form [Elliott, 1983]:

$$\text{Audit gauge} = 1.6 \times (\text{greater of assets or revenues})^{2/3}$$

The form of the audit gauge equation, raising assets or revenues to the $2/3$ power, embodies a sliding scale.

Warren and Elliott [1986] surveyed CPAs at 60 firms concerning planning materiality used on audits. Their results support the use of sliding scale measures based on revenues, pretax income or net income, approximated by the following formulas:

- (1) $.038657 \times (\text{revenues})^{.867203}$
- (2) $.146924 \times (\text{pretax income})^{.942554}$

and

- (3) $.271762 \times (\text{net income})^{.894640}$.

Pany and Wheeler [1989] applied the ten rules-of-thumb materiality measures suggested by Leslie, Peat Marwick International, and Warren and Elliott to data for 330 U. S. companies representing 25 industries listed in Standard and Poor's Compustat database for the years 1977 to 1986. They found that for manufacturers, wholesalers and retailers, revenue and pretax income rules of thumb produced the highest materiality thresholds, while gross profit and audit gauge measures produced the lowest materiality thresholds. For financial, service and utilities firms, the total assets rules of thumb

(including gauge when appropriate) tended to produce the highest materiality thresholds. There were significant differences in calculated materiality amounts within each industry using the ten rules of thumb and there were instabilities over time and across industries, with audit gauge providing the most stable results of the ten measures. They also noted that setting materiality at a very low level implied more audit work and setting materiality at a very high level implied less audit work, thus expressing the concern that inconsistencies in materiality judgments could lead to inconsistent auditor conclusions. Pany and Wheeler concluded that in the absence of specific mathematical guidance, auditors might find using Leslie's blended method "provides a more stable, as well as defensible, calculation."

Pany and Wheeler's study was based on industry-wide data; other prior studies also combined data across a number of firms. However, in practice, materiality decisions must be made for specific audit clients. In addition, prior studies which have asked auditors to make materiality decisions for specific audit cases have typically used only limited amounts of information and focused exclusively on the materiality judgment. Thus, prior research has provided little empirical evidence about whether observed differences in materiality judgments impact audit risk assessments or the scope of the audit. Without such evidence, arguments about the need for quantitative guidance in auditing standards remain speculative.

In this study, we examine how auditors' materiality thresholds compare to the ten rules of thumb applied to a specific client case. In addition, we examine whether differences in materiality thresholds affect risk judgments. Specifically, our research questions are:

- Q1: When asked to make a materiality judgment for a specific case, do auditors make quantitative materiality judgments consistent with the ten common rules of thumb?
- Q2: Are auditors' quantitative materiality judgments related to their prior expectations of the risk of fraud?
- Q3: Are auditors' quantitative materiality judgments related to the amount of evidence examined?
- Q4: Are auditors' quantitative materiality judgments related to their post-audit judgment of the risk of fraud at the specific client audited?

Research Design

This research used an auditing case study based on an actual audit where material fraud was not detected by the auditors (Pincus, 1990) as the basis for an experimental examination of audit judgment in a fraud detection situation. The experiment consisted of a simulated audit in a laboratory setting administered to 494 practicing auditors (152 managers and 342 seniors) from five Big Six firms in nine states of the United States.

However, the research questions of interest here are examined only for the 152 manager subjects, as the materiality threshold judgment can be made by managers at all the participating firms, but cannot be made by seniors at some of the firms. Bernardi (1994) and Bernardi and Arnold (1994) report other results of this study based on the full sample.

The case involved the continuing audit of a restaurant client. Subjects were asked to take the role of an auditor at a year-end review of the audit work and were given a background description of the client and the client's inventory account. They were then allowed to choose from a large set of available information the additional information they would examine before reaching a decision about the fairness of presentation of inventory.

The available information included a number of red flags for potential fraud and some audit evidence that could lead subjects to discover the misstatement, but the fraud was subtle and in the real case was missed by the auditors. The inventory account being examined had an unaudited value of \$6,572,135; the account was misstated by \$742,000 due to management fraud, but this was not revealed to the subjects. Applicable U. S. auditing standards, including *Statements on Auditing Standards* #47 and #53, do not include any quantitative standards for materiality. However, the amount of the misstatement exceeded all ten materiality rules of thumb used in the study.

Facts in the case included information that could be used to calculate a quantitative materiality threshold, including: (1) total assets were \$35,770,004, (2) total equity was \$12,233,341; (3) gross revenues were \$57,275,966, (4) gross profit was \$23,483,146; (5)

Table 1
CALCULATED MATERIALITY THRESHOLDS
USING THE TEN RULES OF THUMB

RULE OF THUMB FOR QUANTIFYING MATERIALITY	MATERIALITY THRESHOLD FOR THIS CASE
5% of pretax income	\$211,921
0.5% of total assets	\$178,850
1% of total equity	\$122,333
0.5% of total revenues	\$286,380
0.6% of gross profit	\$140,899
Leslie's blend of 5 rules of thumb (average of first five)	\$188,077
Audit gauge	\$237,881
.038657 X (revenues) ^{.867203}	\$206,521
.146924 X (pretax income) ^{.942554}	\$259,173
.271762 X (net income) ^{.894640}	\$147,415

income before taxes was \$4,238,422 ; and (6) net income was \$2,568,484. Table 1 summarizes the numerical results from applying the ten rules of thumb. The ten rules of thumb for judging quantitative materiality provided numerical responses ranging from a low of approximately \$122,000 to a high of approximately \$286,000. Consistent with the empirical findings of Pany and Wheeler, the highest materiality estimates were based on pretax income and revenues; the lowest estimates were based on total equity and gross profit.

After their audit decisions were made, subjects were asked to provide their estimates of the probability of fraud at one or more clients their firm audits locally (used as a measure of prior expectations) and the probability of fraud at the client in the case. Responses to these two questions were provided on a 0 (no chance) to 100 (absolute certainty) scale.

Subjects were also asked to specify how large an error in the client's inventory account would need to be before it would be considered material. Responses to this question were selected from nine categories, as materiality judgments are expected to be rounded amounts, rather than precise dollar cutoffs. The categories ranged from a low of "less than \$50,000" to a high of "more than \$400,000," with each intervening category covering a \$50,000 materiality range. All ten of the rules of thumb fell within the four middle range categories of the response scale.

Results

Q1: Consistency of Judgments with Rules of Thumb

The first research question was: When asked to make a materiality judgment for a specific case, do auditors make quantitative materiality judgments consistent with the ten common rules of thumb?

Table 2 below summarizes the results. Of the 152 managers, 114 (75%) made materiality judgments that fell within the ranges containing the ten rules of thumb. Thirteen subjects (8.6%) set materiality at a lower (more conservative) level than any of the rules of thumb. Twenty-five subjects (16.4%) set higher (less conservative) thresholds for materiality than any of the ten rules of thumb.

To the extent that auditor materiality judgments cleave to the rules of thumb, there is less chance of inconsistent judgments. In this study, three-quarters of the subjects judged materiality to be within the range encompassed by the ten rules of thumb. Of those outside this range, 8.6% set a more stringent materiality standard, implying the possibility that these auditors might want to conduct more audit work or make audit adjustments at a lower dollar level than the majority. However, almost twice as many subjects (16.4%) set a less stringent materiality standard, implying the possibility that these auditors might want to conduct less audit work or waive some adjustments at a higher dollar level than the majority.

For the remaining research questions, the subjects were classified into three groups: (1) those who set a more conservative materiality threshold than any of the ten rules of

Table 2
REPORTED MATERIALITY LEVELS
IN RELATION TO RULES OF THUMB

MATERIALITY LEVEL	RELATED RULES OF THUMB FOR QUANTIFYING MATERIALITY	NUMBER OF SUBJECTS	PERCENT OF SUBJECTS
\$50,000 or less		3	2.0%
\$50,001 - \$100,000		10	6.6%
\$100,001 - \$150,000	1% of total equity (\$122,333) 0.6% of gross profit (\$140,899) .271762 X (net income) ⁸⁹⁴⁶⁴⁰ (\$147,415)	20	13.1%
\$150,001 - \$200,000	0.5% of total assets (\$178,850) Leslie's blend of 5 rules of thumb (\$188,077)	22	14.5%
\$200,001 - \$250,000	.038657 X (revenues) ⁸⁶⁷²⁰³ (\$206,521) 5% of pretax income (\$211,921) KPMG audit gauge (\$237,881)	57	37.5%
\$250,001 - \$300,000	.146924 X (pretax income) ⁹⁴²⁵⁵⁴ (\$259,173) 0.5% of total revenues (\$286,380)	15	9.9%
\$300,000 - \$350,000		10	6.6%
\$350,001 - \$400,000		2	1.3%
Over \$400,000		13	8.5%
TOTALS		152	100%

thumb ($n = 13$); (2) those who set a materiality threshold that fell within the range of the rules of thumb ($n = 152$); and (3) those who set a less conservative materiality standard than any of the rules of thumb ($n = 25$). Comparisons between these groups were made using the General Linear Model (GLM) procedure, an ANOVA type analysis that is best suited to situations when there are unequal numbers of observations for the classes (SAS Institute, 1985). To test for any possible loss of information due to this collapsing of nine categories into three groups, an analysis was also done using the original nine materiality categories, but in no case were the results changed.

Q2: Materiality and Prior Expectations

The second research question was: Are auditors' quantitative materiality judgments related to their prior expectations of the risk of fraud? Logically, we would expect an inverse relationship between materiality and risk; that is, we would see lower materiality levels in conjunction with higher prior expectations of fraud.

The subjects' prior expectations, measured as the assessed probability of fraud at one or more clients that their firm audits locally, ranged from 0 (no chance) to 100 (absolute certainty), with a modal value of 10 and a mean value of 22.9. Nine subjects (6.0%) chose the extreme value of 100 as their prior probability, indicating they were certain that material fraud existed at one or more clients their firm audits locally. Four subjects chose the opposite extreme value of 0 as their prior probability, indicating they were certain there was no client they audited locally where there was material fraud. Without these thirteen subjects who expressed certainty, the mean prior probability drops from 22.9% to 18.0%.

As can be seen in Table 3, the auditors' prior expectations were not related to their materiality ranges, with no significant difference between the grand mean and the average probabilities of auditors with materiality thresholds more conservative, less conservative or within the rules-of-thumb range. Consistent with expectations, the highest average probability was at the lowest (most conservative) materiality level. But the lowest average probability was for the range that included the rules-of-thumb, rather than the higher (less stringent) range.

This finding of no significant difference in prior expectations between materiality groups does not change if the results are examined using all nine of the materiality level categories, rather than the three groups shown in Table 3. The highest prior expectations, averaging 32.0, were among the subjects with materiality levels between \$100,001 and \$150,000; the lowest prior expectations, averaging 17.4, were among the subjects with materiality levels between \$150,001 and \$200,000. The finding of no statistically significant relationship is also unchanged if we omit the 13 managers who had an extreme prior probability of 100 or 0, indicating they were certain that material fraud did or did not exist at one or more clients their firm audits locally.

Table 3
MATERIALITY JUDGMENTS AND PRIOR EXPECTATIONS

MATERIALITY LEVEL	NUMBER OF SUBJECTS	PRIOR PROBABILITY OF FRAUD	
		MEAN	STANDARD DEVIATION
<i>More conservative than the rules of thumb range</i>	13	26.6	33.0
<i>Within the rules of thumb range</i>	114	22.1	26.7
<i>Less conservative than the rules of thumb range</i>	25	24.5	29.2
Overall	152	22.9	27.8

Note: Based on the GLM procedure, the reported differences are not statistically significant ($p = .4605$).

Q3: Materiality and Amount of Evidence Examined

The third research question was: Are auditors' quantitative materiality judgments related to the amount of evidence examined? This question was explored by noting the number of pieces of additional information a subject chose to examine (beyond the background information provided to all subjects) before reaching a decision about the case. As can be seen in Table 4, the results were in the predicted direction, with the most conservative materiality threshold group examining more evidence than those within the rules-of-thumb range. Also as expected, the least conservative materiality threshold group examined less evidence than either of the other groups.

However, these differences were not statistically significant at conventional levels. Thus, the tendency of subjects with more stringent materiality standards to examine more evidence did not lead to significant differences on average between the groups. When the data were analyzed omitting the thirteen subjects who had expressed certainty (100 or 0) as their prior probability of fraud at one or more clients their firm audits locally, the results were that the average number of pieces of additional information examined changed only slightly from 23.8 to 24.1. There was still no significant difference between the groups.

Table 4
MATERIALITY JUDGMENTS AND AMOUNT OF EVIDENCE EXAMINED

MATERIALITY LEVEL	NUMBER OF SUBJECTS	PIECES OF ADDITIONAL INFORMATION EXAMINED	
		MEAN	STANDARD DEVIATION
<i>More conservative than the rules of thumb range</i>	13	24.2	8.8
<i>Within the rules of thumb range</i>	114	23.4	8.4
<i>Less conservative than the rules of thumb range</i>	25	25.4	7.6
Overall	152	23.8	8.3

Note: Based on the GLM procedure, the reported differences are not statistically significant ($p = .6692$).

Q4: Materiality and Risk Judgments

The final research question was: Are auditors' quantitative materiality judgments related to their post-audit judgment of the risk of fraud at the specific client audited? As can be seen in Table 5, while the average probability of fraud was higher (31.5) for those subjects within or below the rules-of-thumb range than for those subjects with higher materiality thresholds (29.8), this difference was not statistically significant.

Thus, the tendency of subjects with more stringent materiality standards to make more conservative fraud risk assessments did not lead to significant differences on average between the groups. When the data were analyzed omitting the thirteen subjects who had expressed certainty (100 or 0) as their prior probability of fraud at one or more clients their firm audits locally, the results were that the mean post-audit probability of fraud decreased from 31.2 to 29.5. The post-audit probabilities for the three groups were: (1) an average of 34.5 (standard deviation = 28.7) for the more conservative group; (2) an average of 29.6 (standard deviation = 28.0) for the group with materiality thresholds within the range of the ten rules-of-thumb examined; and (3) an average of 26.7 (standard deviation = 25.2) for the less conservative group. However, once again, while the results were in the predicted direction, the differences were not significant at conventional levels.

Table 5
MATERIALITY JUDGMENTS AND POST-AUDIT FRAUD PROBABILITIES

MATERIALITY LEVEL	NUMBER OF SUBJECTS	POST-AUDIT PROBABILITY OF FRAUD	
		MEAN	STANDARD DEVIATION
<i>More conservative than the rules of thumb range</i>	13	31.5	27.4
<i>Within the rules of thumb range</i>	114	31.5	29.5
<i>Less conservative than the rules of thumb range</i>	25	29.8	28.1
Overall	152	31.2	29.1

Note: Based on the GLM procedure, the reported differences are not statistically significant ($p = .9643$).

Discussion of Results

This research provides empirical evidence consistent with arguments in the research and practice literature that in the absence of quantitative guidance in auditing standards for setting materiality thresholds, there may be inconsistent materiality judgments between auditors. Materiality thresholds set by auditors in this study ranged from a low of under \$50,000 to a high of over \$400,000. Even so, the majority of auditors set their materiality thresholds within a range encompassing estimates developed using ten common rules of thumb for quantifying materiality. These rules of thumb may set *de facto* guidance for auditors even in the absence of mandated standards.

The major finding of this study is that there is no evidence to support the next link in the argument often put forth for quantitative standards: that inconsistencies in materiality thresholds might have an adverse impact on audit judgments. Although there was relatively high variability in risk judgments and the amount of evidence examined, there were no statistically significant differences between the most conservative group, the majority group that set their materiality thresholds within the range of ten common rules of thumb for quantifying materiality, and a less conservative group that set their thresholds higher than any of the rules of thumb. Thus, the empirical evidence in this study does not support the need for standard-setters to provide specific guidance for quantitative measures of materiality.

While this evidence provides a useful addition to the ongoing international debate over quantitative materiality standards, no one study can possibly settle the debate, particularly on the negative side. However, further empirical studies of materiality and risk judgments for realistic audit cases could help provide a preponderance of evidence that would be helpful to researchers, practitioners and policy-makers alike. Given the prior research (e.g., Pany and Wheeler 1989) showing a wide range of results within and between industries when applying common rules of thumb for quantifying materiality, we suggest that it would be especially useful to choose cases to study that cover a variety of industry groups (in addition to the restaurant industry used for this study).

Moreover, even under the assumption that a larger body of research supports the empirical findings of this study, there are additional arguments in favor of quantitative standards that need to be considered. For example, even if audit judgments are not adversely impacted by the typical range of inconsistencies in materiality thresholds, it is still possible that legal liability costs could be reduced if materiality standards were clearer. One potential line of future research would be to conduct court or jury simulations of cases used to study auditors' materiality and risk judgments. Do the juries react differently when provided with the results of the rules of thumb for quantifying materiality than when they are given no quantitative guidance?

The opportunity for international research should also be considered as the debate is international in scope and the need for harmonization is likely to arise at some point. With appropriate care for international differences, experiments using the same audit case could compare risk assessments and the amount of evidence examined by auditors in countries with auditing standards that do provide quantitative guidance for setting materiality thresholds versus auditors in those countries which do not provide such standards.

End notes

1. At all of these firms, either managers or partners may make materiality decisions.
2. These two papers focus on the relationship between moral development and audit judgments. Bernardi (1995) found that high-moral-development managers detected fraud at a higher rate than low-moral-development managers when these auditors were provided with information on client integrity and competence. Bernardi and Arnold (1994) found that moral development was related to materiality estimates, with high-moral-development managers setting more stringent materiality thresholds. Bernardi and Arnold (1994) also found that auditors provided with information that client integrity and competence was low estimated materiality at a lower threshold than other auditors.

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