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Steven M. Glover  
glover@byu.edu

Jonathan T. Liljegren

Douglas F. Prawitt

William F. Messier

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# JOURNAL OF ACCOUNTANCY

AUDITING

## Component Materiality for Group Audits

BY STEVEN M. GLOVER, DOUGLAS F. PRAWITT, JONATHAN T. LILJEGREN AND WILLIAM F. MESSIER JR.  
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Determining overall group materiality and materiality levels for individual components is becoming more of a hot-button issue as the number and complexity of large and international group audits increases. Auditing standards and other professional materials offer little practical guidance on the topic.

Internal and peer reviews and regulatory inspections have revealed a variety of approaches in this area. In some instances, reviews have discovered potentially troubling practices. Our conversations with regulators and practitioners indicate an intense and growing interest in the development of conceptually sound guidance. This article outlines a practical approach that group engagement partners can consider in establishing or evaluating component materiality.

### **GUIDANCE IN THE AUDITING STANDARDS**

A group audit is performed on an entity with multiple locations or components, such as subsidiaries, with separately audited financial information included in consolidated or group financial statements. To properly plan the nature and extent of audit procedures for the group audit, the group engagement partner, who is the lead auditor for the consolidated entity, must determine group overall materiality and establish or approve appropriate materiality levels for the individual components. The component materiality level helps guide the component auditors in planning and performing audit procedures to achieve the desired level of audit risk at each component such that the group auditor achieves the desired level of group overall audit risk on the consolidated financial statements.

U.S. auditing standards (AU section 312 and PCAOB's Auditing Standard no. 5, paragraphs B10–B16 of Appendix B) provide a list of factors to consider in determining the extent of testing on a multicomponent audit. However, these standards don't provide specific practical guidance on establishing component-level planning materiality, one of the principal factors used to determine the extent of testing.

The International Auditing and Assurance Standards Board (IAASB) recently released a revised and redrafted International Standard on Auditing (ISA) 600, Special Considerations—Audits of Group Financial Statements (Including the Work of Component Auditors), to provide additional guidance to group engagement partners. Paragraphs 21–23 and A42–A46 of ISA 600 provide guidance to help inform group engagement partner materiality decisions. Paragraph A43 provides the following guidelines regarding component materiality:

1. To reduce the risk that the aggregate of detected and undetected misstatements in the group financial statements exceeds the materiality level for the group financial statements as a whole, the component materiality level is set lower than the group materiality level.
2. Different materiality levels may be established for different components.
3. The component materiality level need not be an arithmetical portion of the group materiality level and, consequently, the aggregate of the component materiality levels may exceed the group materiality level.

Using the following examples, we hope to provide additional practical guidance to help group engagement partners navigate these guidelines

### **AGGREGATE COMPONENT MATERIALITY**

Aggregate component materiality is the sum of the individual component materiality amounts. ISA 600 implies two extreme endpoints for the measure of aggregate component materiality, one of which would generally be considered unnecessarily conservative and the other overly aggressive. [Exhibit 1](#) illustrates the two extremes for an example company.

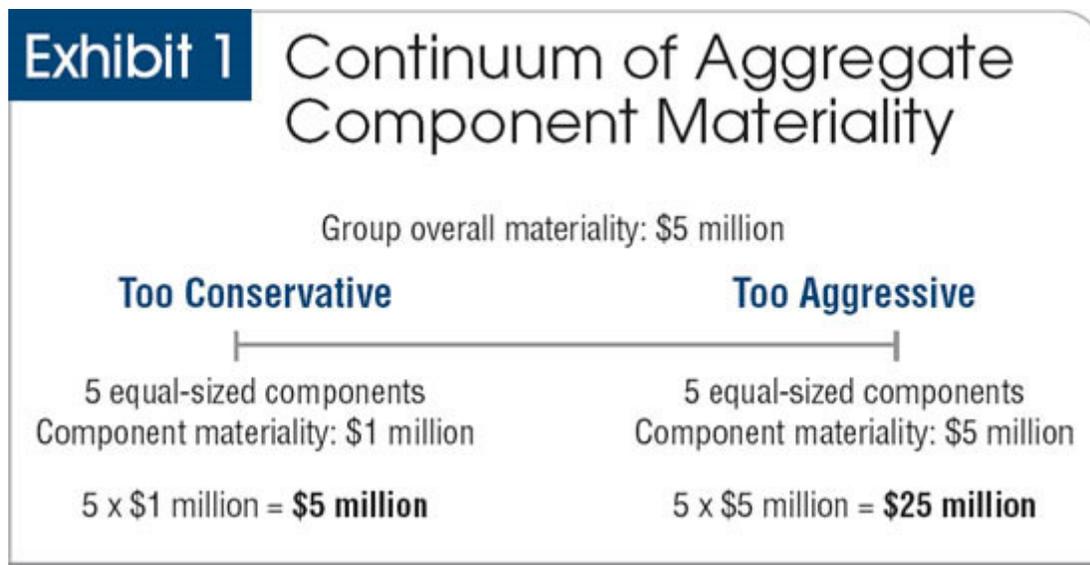
On the conservative extreme of the continuum, the group engagement partner could allocate an arithmetical portion of group overall materiality to each component, in which case aggregate component materiality is equal to group overall materiality. For example, given a group overall materiality of \$5 million, \$1 million is allocated to each of five equal-sized components.

On the aggressive end of the continuum, the group engagement partner could set materiality for each component at nearly the group overall materiality figure, resulting in an aggregate component materiality that far exceeds group overall materiality. For example, given a group overall materiality of \$5 million, approximately \$5 million is allocated to each of five equal-sized components.

Allocating full group materiality to each component results in an unacceptably high risk of audit failure. To illustrate this, assume that the desired audit risk at each component is 5%. Since each component is allocated the full amount of group overall materiality, the risk of an undetected material misstatement at the group level is the likelihood that any one of the five components has an undetected material misstatement, which is about 23% ( $1 - (0.95)^5$ ). Note that aggregate component materiality can exceed group overall materiality for many of the same reasons that the aggregate of tolerable misstatement allocated to account balances can exceed overall materiality in a financial statement audit.

Conversely, allocating an arithmetic portion—a simple proportion—of group overall materiality would generally result in over-auditing because the achieved audit risk at the group level would be extremely low.

While ISA 600 implies it is appropriate for group engagement partners to avoid the extreme endpoints of the continuum shown in [Exhibit 1](#), it does not spell out how to determine a reasonable and justifiable level of aggregate component materiality between these two extremes.



### MAXIMUM AGGREGATE COMPONENT MATERIALITY

Aggregate component materiality can be expressed as a multiple of group overall materiality. Using [Exhibit 1](#), the conservative extreme indicates a multiple of 1 ( $\$5 \text{ million} \div \$5 \text{ million} = 1$ ), whereas the aggressive extreme indicates a multiple of 5 ( $\$25 \text{ million} \div \$5 \text{ million} = 5$ ). We developed a probabilistic model to generate multiples that can be applied to calculate a reasonable upper bound for aggregate component materiality based on the group overall materiality level and the number of components (for a complete description of the model, click [here](#)).

The multiples derived from the model to determine the *maximum aggregate component materiality* (MACM) are presented in [Exhibit 2](#). We refer to these MACM multiples as benchmark multiples.

Our set of benchmark multiples assumes that the group engagement partner has used appropriate professional judgment to determine the number of significant components to which MACM will be allocated, including removing any insignificant components that are immaterial in aggregate and that are of sufficiently low risk (in accordance with ISA 600, paragraphs A50–A53).

To determine the upper bound suggested by the model, the group engagement partner multiplies group overall materiality by the appropriate benchmark multiple from the table and then uses the calculated MACM as a reference point in establishing component materiality levels or evaluating the component materiality levels proposed by component auditors.

Returning to our example of a group audit with five components, applying the benchmark multiple of 2.5 to group overall materiality of \$5 million yields an MACM of \$12.5 million—a reasonable upper bound available for allocation to the components. See the sidebar, “Approaches for Allocating MACM,” for additional examples using the benchmark multiples to calculate MACM.

It is important to note that in evaluating audit results, the aggregate of known and projected misstatements from all components cannot exceed group overall materiality. Thus, even though the total amount of materiality allocated to the components (\$12.5 million

in our example) can exceed group overall materiality (\$5 million in our example), evaluation of the aggregated known and projected audit differences for the consolidated entity is conducted using group overall materiality.

## Exhibit 2 Benchmark Multiples

Number of significant components to which MACM will be allocated	Multiple applied to group overall materiality to determine maximum aggregate component materiality (MACM)
2	1.5
3–4	2.0
5–6	2.5
7–9	3.0
10–14	3.5
15–19	4.0
20–25	4.5
26–30	5.0
31–40	5.5
41–50	6.0
51–64	6.5
65–80	7.0
81–94	7.5
95–110	8.0
111–130	8.5
131+	9.0

**ADDITIONAL GUIDELINES FOR ESTABLISHING COMPONENT MATERIALITY**

Now that we have determined a reasonable level of aggregate component materiality, the question becomes how to allocate this amount to components. In practice, it’s common for the component materiality levels to vary due to differing component sizes, statutory audit requirements, risk characteristics and country-specific guidelines. The group engagement partner allocates the MACM to the significant components using either proportional or weighted allocation techniques.

An example of a weighted allocation technique is to take the square root of a component’s revenues and divide it by the sum of the square roots of each component’s revenues. The result is multiplied by MACM to determine materiality for that component.

The proportional or weighted allocation techniques provide group engagement partners with a preliminary allocation strictly based on size. The preliminary allocation is then adjusted as appropriate based on each component’s risk characteristics. The sidebar provides examples of how both of these allocation techniques can be used.

When there are different-sized components or required limits on the amount of materiality that can be allocated to some components, as in statutory audits, the following guidelines help ensure that the allocation achieves the desired level of audit risk at the group level:

1. Each component should receive an allocation that is less than group overall materiality (see ISA 600, paragraph A43).
2. The aggregate component materiality for the largest components is generally kept within the benchmark multiple for that number of components. For example, if a group is composed of three large components and 35 relatively small components, the group engagement partner would not likely allocate more than two times group overall materiality in aggregate to the three large components, based on the suggested benchmark multiple associated with three components.

While the approach we suggest will help inform the group engagement partner’s judgment, we stress that because of the complexity and subjectivity of the variables involved, no single “correct” or “optimal” solution is possible. Auditors should apply appropriate

professional judgment and follow local standards when establishing the materiality allocation for each component. ♦

## Approaches for Allocating MACM

These examples allocate MACM to components based on revenues; other financial bases could also be used.

### Company 1

Number of Components		5		
Benchmark Multiple		2.5		
Group Overall Materiality		1,000,000		
Maximum aggregate component materiality based on benchmark multiples (MACM)		2,500,000		
		1	2	3
	Component Revenues	Proportional Allocation of MACM	Weighted Allocation of MACM*	Component Materiality
1	60,000,000	750,000	622,847	700,000
2	50,000,000	625,000	568,579	600,000
3	40,000,000	500,000	508,553	500,000
4	30,000,000	375,000	440,420	400,000
5	20,000,000	250,000	359,601	300,000
Aggregate Component Materiality		2,500,000	2,500,000	2,500,000

See “Illustrative weighted

allocation formula for component materiality” below.

In this example, the group engagement partner multiplies the benchmark multiple of 2.5 (the multiple pertaining to five components—see Exhibit 2) by the group overall materiality of \$1 million to determine the maximum aggregate component materiality, which is \$2.5 million.

For a simple proportional allocation of MACM (column 1), divide component revenues by total revenues, and multiply by MACM (for example to compute the allocation for component 5:  $250,000 = 2,500,000 \times 20,000,000 \div 200,000,000$ ).

For a weighted allocation of MACM (column 2), first take the square root of each component’s revenues and then take the sum of the square roots of all individual components’ revenues to compute the denominator for the weighted allocation formula (see illustrative weighted allocation formula on page 46). The square root of each component’s revenues is divided by the denominator and is then multiplied by MACM to determine the weighted allocation (for example, to compute component 5’s allocation:  $359,601 = 2,500,000 \times 4,472 \div (7,746 + 7,071 + 6,324 + 5,477 + 4,472)$ ).

After considering the potential allocation approaches, the engagement partner established the final component materiality levels shown in column 3.

### Company 2

Number of Components		5		
Benchmark Multiple		2.5		
Group Overall Materiality		2,650,000		
Maximum aggregate component materiality based on benchmark multiples (MACM)		6,625,000		
Component Revenues		1 Proportional Allocation of MACM	2 Weighted Allocation of MACM*	3 Component Materiality
1	250,000,000	3,125,000	2,292,471	2,100,000
2	150,000,000	1,875,000	1,775,340	1,600,000
3	100,000,000	1,250,000	1,498,886	1,100,000
4	20,000,000	250,000	648,409	500,000
5	10,000,000	125,000	458,494	300,000
Aggregate Component Materiality		6,625,000	6,625,000	5,600,000

\* See below, "Illustrative weighted allocation formula for component materiality."

The significant size differences among the components of Company 2 preclude using strictly proportional or weighted allocations of the maximum aggregate component materiality (MACM). Under a simple proportional allocation approach (column 1), the largest component would have been allocated more than group overall materiality, which violates ISA 600. The allocation guidelines in the article also suggest that the aggregate allocation of materiality to the largest components not exceed the level indicated by the benchmark multiples. Thus, the three largest components should receive no more than two times group overall materiality (in this case, \$5.3 million).

However, a proportional allocation of MACM would result in \$6.25 million in aggregate being allocated to the three largest components, and the weighted allocation of MACM would result in \$5,518,097 in aggregate being allocated to the three largest components. Therefore, considering the risk characteristics of the components, the materiality allocations shown in the component materiality column (3) would be appropriate.

**Illustrative weighted allocation formula for component materiality**

$$\text{Component } i \text{ materiality} = \text{Maximum aggregate component materiality (MACM)} \times \frac{\sqrt{\text{Amount of component } i \text{ revenues}^\dagger}}{\sum_{j=1}^{\text{Number of components}} \sqrt{\text{Amount of component } j \text{ revenues}^\dagger}}$$

† Other appropriate, stable financial bases or measures could similarly be used by auditors in the weighted allocation formula

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**Web site**

AICPA's Auditing Standards Board, <http://tinyurl.com/3qyu5x>.

OTHER RESOURCES

**Web site**

PCAOB, [www.pcaob.org](http://www.pcaob.org)

**Publication**

ISA 600, *Special Considerations—Audits of Group Financial Statements (Including the Work of Component Auditors)*, [www.ifac.org/store](http://www.ifac.org/store).

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EXECUTIVE SUMMARY

■ **Regulator inspections and firms' quality reviews have revealed** a variety of methods used by group engagement partners in determining component materiality and have identified potentially troubling matters with some of the current approaches.

■ **International Auditing Standard (IAS) no. 600, *Special Considerations—Audits of Group Financial Statements (Including the Work of Component Auditors)***, defines a continuum of materiality amounts that conceivably could be allocated to components. A reasonable, practical approach is allocating overall materiality to components while avoiding the extremes of the continuum.

■ **Benchmark multiples are suggested as reasonable upper bounds** for group engagement partners to consider when evaluating the appropriateness of aggregate component materiality and component materiality allocations. These multiples are based on a simple probabilistic model that takes into account the number of components to which overall materiality is to be allocated and audit risk at the component and group levels.

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**Steven M. Glover**, CPA, Ph.D., and **Douglas F. Prawitt**, CPA, Ph.D., are professors of accounting at Brigham Young University. Prawitt is also a member of the Auditing Standards Board. Their e-mail addresses, respectively, are [glover@byu.edu](mailto:glover@byu.edu) and [prawitt@byu.edu](mailto:prawitt@byu.edu). **Jonathan T. Liljegren** is a recent graduate of Brigham Young University. He works for PricewaterhouseCoopers in the Washington, D.C., Metro office. His e-mail address is [jonathan.liljegren@byu.net](mailto:jonathan.liljegren@byu.net). **William F. Messier Jr.**, CPA, DBA, is a professor of accounting at the University of Nevada–Las Vegas. His e-mail address is [bill.messier@unlv.edu](mailto:bill.messier@unlv.edu). He is a former ASB member.