RISK OF MATERIAL ADVERSE DEVIATION STUDY NOTE

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INTRODUCTION

National Association of Insurance Commissioner (NAIC) Statements of Actuarial Opinion (SAOs) require that Appointed Actuaries identify the materiality standard and whether there are significant risks or uncertainties that could result in material adverse deviation. Actuarial Standard of Practice (ASOP) No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, states that "(t) The actuary should consider whether there are significant risks and uncertainties that could result in future paid amounts being materially greater than those provided for in the reserves."[1]

MATERIALITY

ASOP No. 36 does not define materiality but includes materiality in the analysis of issues and recommended practices section.

> The actuary should evaluate materiality based on the actuary's professional judgment, any applicable materiality guidelines or standards, and the intended purpose for which the actuary is preparing the statement of actuarial opinion.
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> The actuary should understand which financial values are usually important to the intended users of the statement of actuarial opinion and how those financial values are likely to be affected by changes in the reserves and future payments for losses and loss adjustment expenses. For example, for a statement of actuarial opinion for an insurance company to be used for financial reporting to insurance regulators, materiality might be evaluated in terms of the company's reported reserves or statutory surplus.[2]

ASOP No. 1, *Introductory Actuarial Standard of Practice*, also includes guidance on materiality.

> "Materiality" is a consideration in many aspects of the actuary's work. An item or a combination of related items is material if its omission or misstatement could influence a decision of an intended user. When evaluating materiality, the actuary should consider the purposes of the actuary's work and how the actuary anticipates it will be used by intended users. The actuary should evaluate materiality of the various aspects of the task using professional judgment and any applicable law (statutes, regulations, and other legally binding authority), standard, or guideline. In some circumstances, materiality will be determined by an external user, such as an auditor, based on information not known to the actuary.

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1 Actuarial Standard of Practice No. 36, Adopted December 2010, Updated for Deviation Language Effective May 1, 2011, Section 3.9

2 Actuarial Standard of Practice No. 36, Adopted December 2010, Updated for Deviation Language Effective May 1, 2011, Section 3.6

The guidance in ASOPs need not be applied to immaterial items.[3]

The American Academy of Actuaries (AAA) Task Force on Materiality defines materiality as "An omission, understatement or overstatement in a work product is material if it is likely to affect either the intended principal user's decision-making or the intended principal user's reasonable expectations."[4]

Both ASOP No. 36 and the AAA's Policy Practice Note on Statements of Actuarial Opinion on Property and Casualty Loss Reserves (practice note) include using reported reserves or statutory surplus as a means to determine possible materiality standards. The practice note includes additional examples to consider in the choice of a materiality standard. The following table shows materiality standards that were used in 2019 Property and Casualty SAOs.

Materiality Threshold	# of Records	%
5% of Surplus	46	7.12%
10% of Surplus	320	49.54%
15% of Surplus	52	8.05%
20% of Surplus	188	29.10%
25% of Surplus	9	1.39%
Other percent of Surplus	31	4.80%
Subtotal	646	

Materiality Threshold	# of Records	%
5% of Net Held Reserves	3	1.20%
10% of Net Held Reserves	137	54.58%
15% of Net Held Reserves	89	35.46%
20% of Net Held Reserves	7	2.79%
25% of Net Held Reserves	2	0.80%
Other Percent of Net Held Reserves	13	5.18%
Subtotal	251	

Materiality Threshold	# of Records	%
% of Surplus	646	70.76%
% of Reserves	251	27.49%
Based on Risk-Based Capital Measure	6	0.66%
Other	10	1.10%
Subtotal	913	

Some Appointed Actuaries review multiple materiality standards and then select a materiality standard to use in the SAO. The selected materiality standard should reflect the riskiness and complexity of the company. For example, an Appointed Actuary may review three common materiality standards: 10% of surplus, 10% of held reserves and the difference between the policyholders surplus and the Company Action Level risk-based capital amount. The Appointed Actuary will then select a materiality standard based on the results of those calculations and consideration of the company's financial metrics and key risk factors.

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3 Actuarial Standard of Practice No. 1, Adopted by the Actuarial Standards Board, March 2013, Section 2.6.

4 Materiality Discussion Paper prepared by the American Academy of Actuaries Task Force on Materiality, Professionalism Series, 2006 No. 8, page 1.

Once a materiality standard has been established, the Appointed Actuary can assess whether there is a significant risk of material adverse deviation for the company under consideration.

RISK OF MATERIAL ADVERSE DEVIATION

Two tests that the Appointed Actuary may review in determining whether there is a significant risk of material adverse deviation (RMAD) are (1) the Bright Line Indicator Test and (2) a comparison of the range of reasonable reserve estimates to the sum of held reserves and the materiality standard.

The Bright Line Indicator Test is provided in the NAIC Financial Analysis Handbook. The Bright Line Indicator Test can be used for companies subject to Risk-Based Capital (RBC) reporting requirements. It compares 10 percent of the company's net loss reserves to the difference between RBC total adjusted capital and RBC company action level. "If the Appointed Actuary does not address material adverse deviation, yet ten percent (10%) of the company's net loss reserves is greater than the difference between the Total Adjusted Capital and the company Action Level capital, then comments from the Appointed Actuary should be pursued by the Financial Analyst."[5] The data for the Bright Line Indicator Test comes from the Annual Statement. An example of the Bright Line Indicator Test, below, includes the Annual Statement references.

Row	Item	Source	Amount
(1)	Net Loss Reserves	Liabilities, Surplus and Other Funds, Line 1	14,187,300
(2)	Net LAE Reserves	Liabilities, Surplus and Other Funds, Line 3	2,812,800
(3)	Total Adjusted Capital	Five-Year Historical Data, Line 28	15,666,350
(4)	Authorized Control Level RBC	Five-Year Historical Data, Line 29	2,437,050
(5)	10% of Net Held Reserves	10% x [(1) + (2)]	1,700,010
(6)	Company Action Level RBC	2 x (4)	4,874,100
(7)	Difference between total adjusted capital and company action level RBC	(3) – (6)	10,7922,250
(8)	Bright Line Indicator Test	If (5) > (7) Fails Test	Pass

The Actuarial Opinion Working Group Regulatory Guidance states "RMAD should likely exist when the sum of the materiality standard plus the carried reserves is within the range of reasonable estimates."[6] Data for this Materiality Range Test is found in three sources. Held reserves are provided in the Annual Statement. The materiality standard is included in the Statement of Actuarial Opinion and the range of reasonable estimates may be included in the Actuarial Opinion Summary.

Failing the Materiality Range Test will generally lead to the finding of a significant RMAD. The example

5 AAA's Policy Practice Note on Statements of Actuarial Opinion on Property and Casualty Loss Reserves, December 2022, Page 67.

6 Regulatory Guidance on Property and Casualty Statutory Statements of Actuarial Opinion, Actuarial Opinion Summaries, and Actuarial Reports for the Year 2021 Prepared by the NAIC Actuarial Opinion (C) Working Group of the Casualty Actuarial and Statistical (C) Task Force, September 26, 2022, Section H.3.

below, which has a materiality standard equal to 10% of reserves, includes the references.

Row	Item	Source	Amount
(9)	Materiality Standard	10% x [(1) + (2)]	1,700,010
(10)	Low End of Reasonable Reserves	Actuarial Opinion Summary	15,300,090
(11)	High End of Reasonable Reserves	Actuarial Opinion Summary	19,125,113
(12)	Held + RMAD	(1) + (2) + (9)	18,700,110
(13)	Materiality Range Test	If (12) < (11) Fails Test	Fail

But in many cases, the tests do not offer a clear-cut finding. Restating our previous example, if the range from low to high was a little smaller, the Company would pass the Materiality Range Test.

Row	Item	Source	Amount
(9)	Materiality Standard	10% x [(1) + (2)]	1,700,010
(10)	Low End of Reasonable Reserves	Actuarial Opinion Summary	15,300,090
(11)	High End of Reasonable Reserves	Actuarial Opinion Summary	18,360,108
(12)	Held + RMAD	(1) + (2) + (9)	18,700,110
(13)	Materiality Range Test	If (12) < (11) Fails Test	Pass

While these and other quantitative tests are the first step in determining whether a significant RMAD exists, qualitative considerations must also be part of the determination — passing both tests is not sufficient to conclude that RMAD does not exist. In addition, the Appointed Actuary does not always formally determine a range of reasonable estimates, in which case it would not be possible to apply the Materiality Range Test. Qualitative considerations that could lead to determining an RMAD exists despite passing both tests include, but are not limited to:

- Line(s) of business with long tails or volatility (e.g., workers compensation, general liability, professional liability, auto liability and cyber liability)
- Catastrophes that occur late in the year may not be fully reflected in case reserves due to delays in claims reporting or claim assessment
- Excess insurance claims may exist but are not reported to the (re)insurer until the retention is breached (i.e., the potential for significant pure IBNR amounts)
- Retained limits that are high relative to the annual claim volume
- Retained excess layers that may generate high severity claims that may have low frequency and/or are slow to report

Conversely, one or both quantitative tests could indicate a risk of material adverse deviation, but mitigating factors could lead to a determination of no RMAD. The regulator would consider this a very unusual situation and the Appointed Actuary would need to clearly provide support for this decision. In the end, both qualitative and quantitative considerations should play a role in the Appointed Actuary's determination of significant RMAD.

RMAD IN PRACTICE

Of the SAOs reviewed in a recent study, approximately 30% had a determination that there were significant risks or uncertainties that could result in material adverse deviation. Further, 35.3% of the stock insurers in the sample had a determination that there are significant risks or uncertainties that could result in material adverse deviation, as opposed to 9.8% of the mutual companies. Ultimately, many companies that have a reasonable SAO have a determination by the Appointed Actuary that there is a significant RMAD. The finding of an RMAD is simply to inform a company's Board of Directors that a company's booked reserves may develop beyond the principal user's expectations — determinations that must be made based on consideration of the company's business profile and its financial statements and position.