Casualty Actuarial Society: Casualty Loss Reserve Seminar

Company Specific Risk Factors for SAO Users

Commitment Reyard Numbers



Erich A. Brandt, FCAS, MAAA Gregory W. Fears Jr., ACAS, MAAA, ARM Julie Lederer, FCAS, MAAA Kevin C. Ahlgrim, Ph.D., ASA, MAAA September 12, 2017

Outline of Presentation

- Antitrust notice
- Background on:
 - Erich Brandt
 - Greg Fears
 - Julie Lederer
 - Kevin Ahlgrim
- Risk of Material Adverse Deviation (RMAD) Background
- Regulators perspective on the RMAD disclosures
- Risk of Material Adverse Deviation Research

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- It is the responsibility of all seminar participants to be aware of antitrust regulations, to prevent any written or verbal discussions that appear to violate these laws, and to adhere in every respect to the CAS antitrust compliance policy.

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About the Presenters

- Fellow of the Casualty Actuarial Society
- Graduate of Illinois State University
- 20 years of experience, primarily in commercial lines
- Reserving studies for:
 - Insurance companies (SAO and financial exams)
 - · Captive insurance companies
 - Self-insured entities
- Extensive experience reviewing industry financial statement data and associated trends
- Experience in workers' compensation, liability lines, medical professional liability and commercial automobile

Erich A. Brandt Senior Consulting Actuary Pinnacle Actuarial Resource



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About the Presenters

- Associate of the Casualty Actuarial Society
- B.A., Mathematics Carthage College 2000
- Associate in Risk Management (ARM)
- 16 years of experience, primarily in commercial lines
- Reserving studies for:
 - Insurance companies (SAO and financial exams)
 Captive insurance companies; Self-insured
 - Captive insurance companies; Self-insured entities
- Funding recommendations for emerging coverages
- Experience reviewing industry financial statement data and associated trends
- Risk margin modeling
- Funding & reserving for public entities

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Gregory W. Fears Jr. Consulting Actuary Pinnacle Actuarial Resources



About the Presenters

- Fellow of the Casualty Actuarial Society
- Member of the American Academy of Actuaries
- Chartered Property Casualty Underwriter
- MBA University of Notre Dame
- BS, Mathematics University of Notre Dame
- As a consultant, performed reserving studies and helped prepare SAOs
- As a regulator, assists with analysis and examination of Missouri-domiciled carriers
- Chair of NAIC Actuarial Opinion (C) Working Group

Julie Lederer Property & Casualty Actuary Missouri Department of Insurance



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About the Presenters

- Ph.D., Finance University of Illinois
- M.S., Finance University of Illinois
- B.S., Actuarial Science University of Illinois
- Associate of the Society of Actuaries (ASA)
- Member of the American Academy of Actuaries (MAAA)
- Research interests include fixed income modeling, financial risk management of insurers, subrogation, and actuarial science
- Teaches courses in commercial property insurance, risk management, and analysis of statutory financial statements





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RMAD: Sources for Guidance

- American Academy of Actuaries SAO Practice Note
- NAIC Property and Casualty SAO Instructions
- American Academy of Actuaries Discussion Paper prepared by the Task Force on Materiality
- Actuarial Literature
 - For example: Materiality and ASOP No. 36: Considerations for the Practicing Actuary – CAS Committee on Valuation, Finance and Investments

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Relevant Comments Disclosures

- Materiality standard
- Major risk factors or considerations underlying the significant risks and uncertainties
- Risk of material adverse deviation
- Anticipated salvage and subrogation Discounting
- Voluntary and/or involuntary underwriting pools and associations
- A&E liabilities
- Retroactive, financial & uncollectable reinsurance
- IRIS ratios
- Changes in methods and assumptions
- Extended reporting endorsements
- Long duration contracts

NAIC Statement of Actuarial Opinion (SAO)

- · Risk of Material Adverse Deviation (RMAD)
 - Paragraph in the SAO which identifies:
 - Significant risks or uncertainties that could result in a material
 - adverse deviation (in the actuary's opinion) - Threshold for the RMAD - amount in \$US
 - Standard for the threshold
 - $\label{eq:major_risk} \mbox{Major risk factors or considerations underlying the significant}$ risks and uncertainties

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RMAD Location and Requirements

- · Statement of Actuarial Opinion (SAO)
 - Explanatory paragraph to describe major risk factors
 - 2013: "If such risk exists", include
 - 2014: include regardless of yes/no disclosure
 - 2015: no significant changes
 - 2016: no significant changes
 - Do not include:
 - General, broad statements about risks and uncertainties due to economic changes, judicial decisions, regulatory actions, political or social forces Exhaustive list of all potential sources of risks and uncertainties
 - Explicitly state whether or not the actuary reasonably believes there are significant risks and uncertainties that could result in material adverse deviation

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RMAD Location and 2016 Requirements (cont.)

- Statement of Actuarial Opinion (SAO)
 - Exhibit B: Disclosures
 - Risk of Material Adverse Deviation
 - #5: Materiality standard in \$US
 - #6: Are there significant risks that could result in material adverse deviation? Yes / No / NA $\,$

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Discussion Question

- Do you, as the Appointed Actuary, discuss the materiality threshold with company management?
- What information do you gather?
- Should this be different for groups with several affiliated companies?

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Company-specific risk factors for SAO users

September 12, 2017 Julie Lederer



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Three parts of the RMAD disclosure

- 1. Company-specific risk factors
- 2. Materiality standard
- 3. RMAD conclusion



What we consider in our review

1. Do the risk factors in the SAO align with what we know about the company?

Other sources of risk information:

- Financial exams and analysis
- ORSA summary reports
- AMB credit reports
- 10-Ks
- Notes to Financial Statements



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What we consider in our review

- 2. Are there new risks in this year's SAO?
- 3. Have any risks been removed?



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What we consider in our review

4. How can we use the risk factor disclosures?

Financial analyst Prepare or edit the Insurer Profile Summary Pose follow-up questions to company management	Financial examiner - Write C-level interview questions - Build the risk matrix - Prioritize exam work
Regulatory actuary Review or construct diagnostics Recommend areas of focus for exam team and examination actuary	Examination actuary Write appointed actuary interview questions Choose areas of focus when reviewing actuarial report



Using the risk factor disclosures Large, nationally-significant P&C carrier undergoing a financial exam covering the period from 1/1/14 to 1/1/17 Illustration of the period from 1/1/14 to 1/1/17

Using the risk factor disclosures

In 2016 SAO: "I have identified the major company-specific risk factor as an initiative in the claims department, introduced in the second quarter of 2015, to close claims sooner. The claims initiative has increased the claims settlement rate and reduces the predictive power of paid loss development factors selected using historical data."



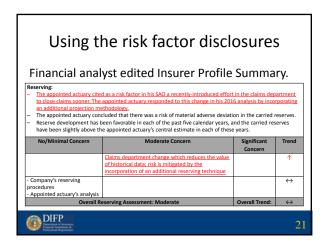
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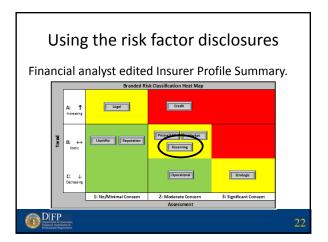
Using the risk factor disclosures

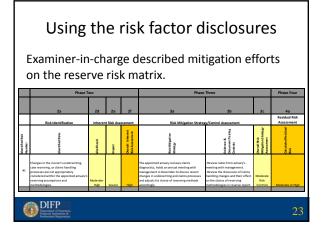
More details in appointed actuary's year-end 2016 report on:

- Annual December meetings with management during which claims department initiatives are discussed
- Review of claim closure diagnostics
- Addition of paid Berquist-Sherman methodology to year-end 2016 analysis









Using the risk factor disclosures

Examiner used SAO disclosures to write interview questions.

Notes from interview of chief claims officer June 5, 2017, 2:00pm CDT

1. The statement of actuarial opinion mentions a recent initiative to close claims sooner. How are you monitoring progress?

-Claims department analyst prepares monthly report that summarizes claims closed during the month (lag from report date to settlement date, ultimate paid value, etc.). A comparison of the reports suggests that the average report-to-settlement time for claims less than \$20,000 decreased from 4 months to 3 months in 2016...



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Using the risk factor disclosures

Regulatory actuary used the disclosures to make a suggestion in the pre-exam memo.

III. Exam Recommendations

- 1. I recommend that the examination actuary review the adjustments the appointed actuary made in his analysis to respond to recent claims handling changes.
- 2. I recommend that the exam team...



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Using the risk factor disclosures

Examination actuary described his review of the added methodology in his report.

V. Review of Methodology

In response to an increase in the rate of claims settlement, the appointed actuary reduced the reliance on the paid loss development method and incorporated a paid Berquist-Sherman technique into his analysis. We reviewed the application of this technique and the selected parameters and found them to be reasonable. For all accident years in total, the ultimate loss based on the Berquist-Sherman method is 6% lower than the ultimate loss based on the paid loss development method. The effect is concentrated in the most recent two accident years...



Discussion question Opinion writers, how do you get information on company-specific risk factors? Risks that could lead to MAD What are the most significant company-specific risk factors to a regulatory user of the opinion? One possible response: Risks that increase the uncertainty in the appointed actuary's estimates and therefore could cause material adverse deviation (MAD) in the carried reserves

Risks that could lead to MAD

Changes in exposure

In one 2016 SAO: "[Company] has begun changing its emphasis from preferred auto to a market segment somewhere between preferred business and non-standard business...Thus, the largest segment we analyzed has recently been and will continue to be subject to a mix shift."



Risks that could lead to MAD

Use of industry data

In one 2016 SAO: "In my analysis of the reserve adequacy for these programs, I used [Company's] loss and ALAE data through December 31, 2016 as well as insurance industry data and loss development patterns that I consider reasonable. The uncertainty of my projections is increased by the need to use these external data."



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Risks that could lead to MAD

Changes in claim handling procedures that reduce the predictive power of historical data

In one 2016 SAO: "Over the past fifteen months, the company has implemented a complete overhaul of its case reserving methodology. This significantly affects the incurred loss development patterns in the company's experience."



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Discussion Question

 The Appointed Actuary is required to include a Relevant Comments paragraph on asbestos and environmental exposures. Are there other risk factors that merit their own Relevant Comments paragraph?



Advice for appointed actuaries

- Keep up the good work. Most SAOs contain an appropriate discussion of company-specific risk factors.
- If there aren't any company-specific risk factors, disclose this in the SAO.
- Include risk factors in the SAO even if there are mitigating effects that blunt the impact (e.g., an adverse development cover that reduces the effect on surplus of upward development).
- Consider providing additional disclosures in the confidential report and Actuarial Opinion Summary.



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Appendix



Glossary

- Actuarial Opinion (C) Working Group: An NAIC working group of the Casualty Actuarial and Statistical (C) Task Force which edits the SAO section of the Annual Statement Instructions
- Branded risk classifications: Risk categories promulgated by the NAIC and used by DOI financial analysts. There are nine branded risks: credit, legal, liquidity, market, operational, pricing/underwriting, reputation, reserving, and strategic.
- COPLFR: The Committee on Property and Liability Financial Reporting, a committee of the American Academy of Actuaries which prepares the annual practice note on P&C SAOs
- DOI: Department of Insurance
- **Insurer Profile Summary**: Regulatory document maintained by the DOI's financial analyst for the legal entity which describes the exposure of the entity to the various branded risks



Glossary

- Regulatory Guidance document: A document prepared by the NAIC Actuarial Opinion (C) Working Group which supplements the NAIC Annual Statement Instructions Property/Casualty (Instructions) in an effort to provide clarity and timely guidance to companies and appointed actuaries regarding regulatory expectations on the actuarial opinion
- Risk assessment matrix: Financial examination tool used to document the risks associated with the insurer's key activities and summarize the conclusions from the examination's testing procedures
- reamp procedures. RMAD: Risk of Material Adverse Deviation. The appointed actuary is asked to state in the SAO whether or not he or she reasonably believes that there are significant risks and uncertainties that could result in material adverse deviation.
- SAO: Statement of Actuarial Opinion, a supplement to the annual statement prepared by a qualified actuary which sets forth his or her opinion related to the reserves within the scope of the SAO.
- **SAO** Instructions: The section of the NAIC's Annual Statement Instructions Property/Casualty that describes the requirements of the actuarial opinion



From 2016 SAO Instructions

- 6. The Appointed Actuary must provide RELEVANT COMMENT paragraphs to address the following topics of regulatory importance.
 - A. Company-Specific Risk Factors

The Appointed Actuary should include an explanatory paragraph to describe the major factors, combination of factors or particular conditions underlying the risks and uncertainties the Appointed Actuary considers relevant. The explanatory paragraph should not include general, broad statements about risks and uncertainties due to economic changes, judicial decisions, regulatory actions, political or social forces, etc., nor is the Appointed Actuary required to include an exhaustive list of all potential sources of risks and uncertainties.



From 2016 SAO Instructions

- 6. The Appointed Actuary must provide RELEVANT COMMENT paragraphs to address the following topics of regulatory importance.
 - B. Risk of Material Adverse Deviation

The Appointed Actuary must provide specific RELEVANT COMMENT paragraphs to address the risk of material adverse deviation. The Appointed Actuary must identify the materiality standard and the basis for establishing this standard. The materiality standard must also be disclosed in U.S. dollars in Exhibit Br. Disclosures. The Appointed Actuary chould must also be disclosed in U.S. dollars in Exhibit B: Disclosures. The Appointed Actuary should explicitly state whether or not he or she reasonably believes that there are significant risks and uncertainties that could result in material adverse deviation. This determination is also to be disclosed in Exhibit B.



From ASOP No. 36, Section 4.2

e. If the actuary reasonably believes that there are significant risks and uncertainties that could result in material adverse deviation, an explanatory paragraph should be included in the statement of actuarial opinion. (See sections 3.6 and 3.9 for guidance on evaluating materiality and adverse deviation.) The explanatory paragraph should contain the amount of adverse deviation that the actuary judges to be material with respect to the statement of actuarial opinion, and a description of the major factors or particular conditions underlying risks and uncertainties that the actuary believes could result in actuarial opinion, and a description of the major factors or particular conditions underlying risks and uncertainties that the actuary believes could result in material adverse deviation. The actuary is not required to include in the explanatory paragraph general, broad statements about risks and uncertainties due to economic changes, judicial decisions, regulatory actions, political or social forces, etc., nor is the actuary required to include an exhaustive list of all potential sources of risks and uncertainties.

Note that ASOP No. 36 only requires a discussion of risk factors if the actuary believes there's a risk of material adverse deviation. The SAO Instructions require a discussion of risk factors regardless of the RMAD conclusion.



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From 2016 Regulatory Guidance

The Instructions were modified in 2014 to require the Appointed Actuary to:

- Describe the major factors, combination of factors or particular conditions underlying the risks and uncertainties that the Appointed Actuary considers relevant to the statutory entity. Examples of possible company-specific risk factors are uncertainty in the tail factors or the need to use industry benchmarks.
- Identify the materiality standard in U.S. dollars, ensuring that such is consistent with the amount shown in Exhibit B: Disclosures. Identify the basis for establishing this standard.
- **Explicitly** state whether he or she believes that there are significant risks and uncertainties that could result in MAD.

Note that the Appointed Actuary is asked to discuss risks whether he or she believes the company is exposed to RMAD. If the Appointed Actuary does not believe that there are ANY company-specific risk factors, the Appointed Actuary should state that.

Regulators generally expect Appointed Actuaries to comment on significant company-specific risk factors that exist prior to the company's application of controls or use of mitigation techniques. The company's risk management behaviors may, however, affect the Appointed Actuary's conclusion on whether there is a significant risk of MAD.



Specific RMAD Paragraph - Risk Factors

- "...exposure to catastrophic weather events and having a concentration of exposure in few states..."
- "...plaintiffs' expanding theories of liability, the risks inherent in major litigation, and inconsistent emerging legal doctrines."
 - In relation to asbestos claims
- "...changes in case reserving practices and the recent increase in claim frequency."

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Specific RMAD Paragraph - Risk Factors

- "...unexpected changes in loss emergence patterns in Auto Liability and General Liability..."
 - "...experience in Auto has been driven by an increase in the frequency of large claims as well as a concentration of business in New York..."
 - "...one contributor to the changes for the large General Liability program is the significant growth in exposure ... which appears to have affected claims handling procedures at the TPA."
 - Good example of risk factor combination
- "Loss development factors ... were based on industry triangles due to the lack of credibility of the Company's historical experience."
 - In relation to variability
- "...mold and construction defect/impaired building materials claims..."

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Major Risk Factors - Disclosure Percentage

			SAO Year		
RMAD Major Risk Factors*	2012	2013	2014	2015	2016
Claims Department Changes (handling, settlement or reserving)	12.2%	9.4%	8.6%	7.0%	10.4%
Long tail Coverage / Line of Business	7.3%	7.5%	2.9%	1.8%	19.4%
Uncertainty	2.4%	3.8%	10.0%	8.8%	1.5%
Asbestos exposure	0.0%	5.7%	8.6%	8.8%	1.5%
Other Mass Tort expsoure	0.0%	3.8%	7.1%	8.8%	4.5%
Asbestos & Environmental (A&E)	9.8%	3.8%	1.4%	0.0%	7.5%
Change in Economy	2.4%	1.9%	8.6%	3.5%	3.0%
Construction defect exposure	4.9%	3.8%	4.3%	3.5%	3.0%
Inflation	0.0%	0.0%	4.3%	8.8%	4.5%
Rapid growth	2.4%	7.5%	0.0%	5.3%	4.5%
Workers Compensation Insurance	4.9%	7.5%	2.9%	1.8%	3.0%
New Line of Business (lack of historical experience)	0.0%	1.9%	2.9%	3.5%	7.5%
Lack of historical experience	0.0%	5.7%	1.4%	1.8%	6.0%
Professional Liability Including Medical Professional Liability	2.4%	1.9%	2.9%	5.3%	1.5%
Environmental exposure	4.9%	3.8%	4.3%	0.0%	0.0%
Asbestos/A&E/Environmental Combination	14.6%	13.2%	14.3%	8.8%	9.0%

*Top 30 Groups with highest 1 year adverse development - Sch P, Part 2

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Transition -	- RMAD	Research
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 Research question: How are actuaries actually reporting on the Risk of Material Adverse Deviation (RMAD)?

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RMAD Paragraph Observations - Basis

- Several companies list multiple options for the RMAD before specifying why they chose a particular measure
 - Selecting the lowest and highest threshold were both observed as well as selections within their range of options
- Focus on selecting a particular measure in relation to riskbased capital adequacy levels
 - Some actuaries listed options for their RMAD threshold and chose the minimum so long as it was less than the reduction that would lead to Company Action Level RBC
- Several companies included purpose and intended use
 - Narrative included for the purpose of solvency monitoring or regulatory review/oversight

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Choosing an RMAD Threshold

Kevin C. Ahlgrim, A.S.A., M.A.A.A., Ph.D.

Associate Professor, Finance, Insurance and Law
Illinois State University
kahlgrim@ilstu.edu



RMAD Disclosures Research

- How is actuarial profession reporting?
- Methodology
 - Review 2015 Statements of Actuarial Opinion (SAOs)
 - Target companies with \$20 million of earned premium (approx. 1,100 affiliated/unaffiliated companies)
- · Initial focus on (objective) disclosures
 - #5: Materiality standard in \$US (and basis)
 - #6: Are there significant risks that could result in material adverse deviation?: Yes / No / NA

Kowin Ablarim

Katie School of Insurance and Financial Services

Other Captured Data

- From 2016
 - Actual reserve development (Schedule P Part 2)
 - Comparison to materiality threshold ("breach"?)
- Supplemental insurer characteristics
 - Organizational type (e.g., stock vs. mutual)
 - Group membership
 - Key financials (PHS, direct/net premiums by LOB)
- (Appointed actuary)
- (Risk factors)

Kevin Ahlgrii

Katie School of Insurance and Financial Services

Part 1: Choosing the Materiality Basis

- Examples include
 - Percentage of surplus (e.g., 10%)
 - Percentage of reserves
 - RBC triggers (% to CAL / ACL)
 - Drop in financial strength ratings
 - (Others are mentioned in COPLFR practice note)

Kevin Ahlerim

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What is "Material"?

 American Academy of Actuaries Task Force on Materiality (2006):

"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."

Kovin Ahlstrin

Katle School of Insurance and Financial Services

Discussion Question

- Who is the "principal user" of SAOs?
- Does it vary for mutual vs. stock insurers?

Kovin Ahldrim

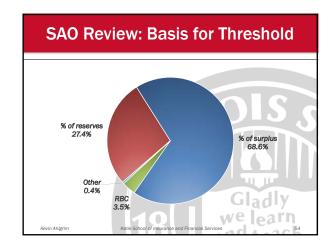
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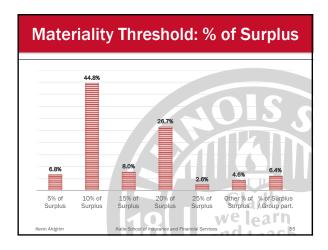
Discussion Question

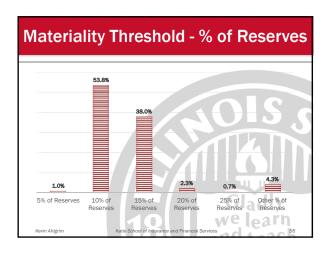
 How would you view two similar companies that use two significantly different RMAD thresholds in their SAOs? For example 5% of surplus versus 20% of surplus.

Kevin Ahlerim

Katie School of Insurance and Financial Services 5.







Choosing a Threshold

- How does an actuary choose materiality threshold?
- Are there insurer specific factors should actuaries consider when selecting a materiality threshold?

Kovin Ahlstrin

Gladly we learn

Which Company Specific Factors Matter?

- For each pair of the following insurers, is there a difference in the materiality of adverse loss development? Would this affect threshold?
- · Assume all other factors are equal
 - Premiums written
 - Use of reinsurance
 - Lines of business
 - Asset distribution
 - Etc.

Kevin Ahlgrii

atie School of Insurance and Financial Services

Materiality of Loss Development (1)

Reserves = \$20 million

A. \$10 million of PHS

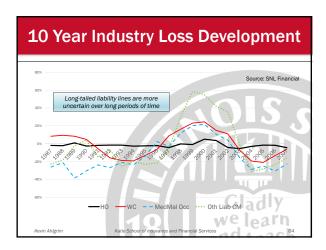
B. \$80 million of PHS

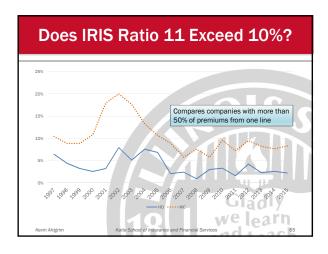
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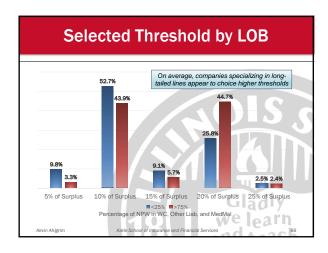
Katie School of Insurance and Financial Services 59

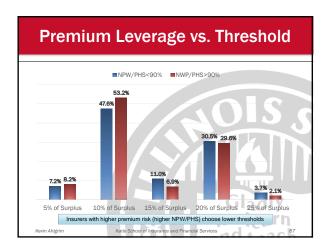
Materiality of Loss Development (2)	
Reserves = \$50 million PHS = \$100 million	
C. Personal auto focus D. Medical malpractice focus	
D. Medical malpractice locus	
Gladly	
Kevin Ahlgrim Katle School of Insurance and Financial Services [60	
Materiality of Loss Development (3)	
Reserves = \$50 million	-
PHS = \$100 million E. No A&E exposure	
F. Significant A&E exposure	
Gladly	
Kevin Ahlgrim Katie School of Insurance and Financial Services Communication (St. 1997)	
Materiality of Loss Development (4)	
Reserves = \$20 million PHS = \$100 million	
Actuarial Opinion Summary Range of Estimates	
G. \$10-45 million H. \$17-24 million	
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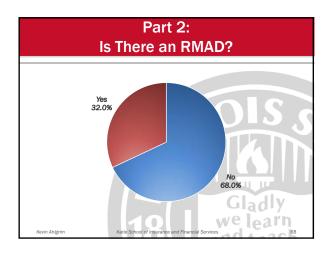
Threshold Choice	e – Regression	n Results
Dependent variable =	Materiality standard = '	% of PHS
Variable	Coefficient (Std Err)	Significance
Intercept	4.1207 (2.4201)	*
LogAssets	0.5550 (0.1738)	***
OrgForm (Stock = 1)	1.5813 (0.5285)	***
Consult = 1	2.4136 (0.4893)	***
%LongTail	0.0172 (0.0063)	***
IRIS2	-0.0050 (0.0030)	*
%Stock	-0.0380 (0.0169)	**
Kevin Ahlgrim Katle School a	f Insurance and Financial Services	ladly learn



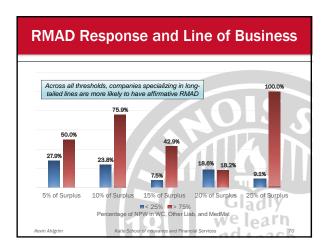


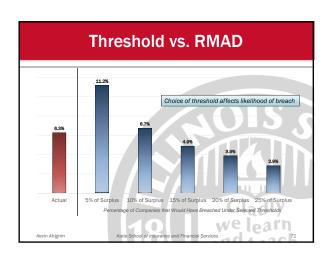






Discussion Question Is an affirmative RMAD a "bad" thing? Glady Mevin Ahlgrim Hate School of Insurance and Financial Services 159



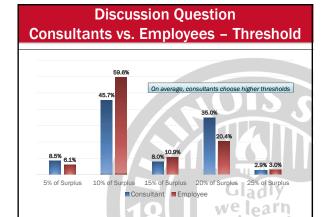


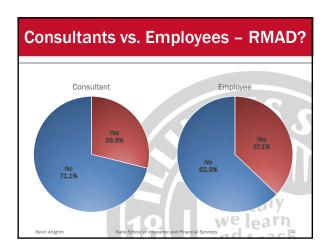
Discussion Question

 When there is significant adverse loss development (IRIS), what steps should the actuary take to satisfy themselves that is won't happen again?

> Gladly we learn

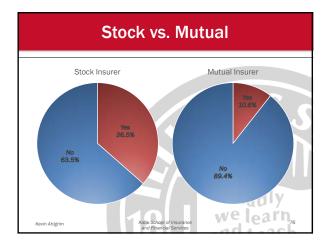
Kevin Ahlerim





Discussion Question Chicken vs. the Egg RMAD disclosure clearly affected by threshold Is there a difference in informational content to regulators? A. Low threshold, Affirmative RMAD B. High threshold, Negative RMAD

we learn



Little guidance is provided on choosing a materiality threshold Evidence suggests that actuaries are considering Their employment status Other risks Line of business Premium leverage Organizational form Kevin Ahlgrim Katie School of Ingurance and Financial Services 77

Specific RMAD Paragraph Disclosures - Materiality

- "Risk of material adverse development in the net loss and loss adjustment expense reserves as of December 31, 2016 is remote, in my opinion due to the reinsurance agreements in place. In my opinion, there is risk of material adverse deviation in the direct and assumed reserve amounts carried by the Company as of December 31, 2016"
- "...stable book of business, strong capital position, low leverage ratio, demonstration of historically adequate reserves..."
- "...the range of reasonable estimates for these liabilities is wide, and the sum of the carried reserves and the materiality standard falls within this range."

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Discussion Question

 What risk factors associated with ceded reserves could cause an actuary to issue a separate RMAD qualifications for Gross versus net reserves?

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Conclusion

- Risk of Material Adverse Deviation (RMAD) Background
- Regulators perspective on the RMAD disclosures
- Risk of Material Adverse Deviation Research
- Questions?

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Thank You for Your Time and Atte	ention
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Commitment Beyond Numbers	ACTUARIAL RESQUECES, INC.