

# Mechanics of Pricing & How To Speak Like An Actuary

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**Glatfelter**  
INSURANCE GROUP®  
An **AIG** company

# Terminology

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- Loss Ratio
- Loss Development
- Trend
- Frequency
- Severity
- On-level

# Pricing

## General

$$\text{Price} = \text{Cost} + \text{Profit}$$

## Insurance

$$\text{Premium} = \text{Losses} + \text{Expenses} + \text{UW Profit}$$

# Raw Loss Ratios

<u>Year</u>	<u>Raw Loss</u>	<u>Premium</u>	<u>Raw Loss Ratio</u>
2020	25.7	48.0	54%
2021	38.0	53.0	72%
2022	31.6	58.0	54%
2023	30.3	62.0	49%
2024	22.2	68.0	33%
Total	147.8	289.0	51%

Raw Loss = Incurred Loss

This is the current amount of loss that is known and has either been paid or had reserves set aside to pay

# Loss Development

*Claims cost more the longer they are open*

<u>Year</u>	<u>Raw Loss</u>	<u>Premium</u>	<u>Raw Loss Ratio</u>
2020	25.7	48.0	54%
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Total	147.8	289.0	51%

# Loss Development

*Claims cost more the longer they are open*

Year	Premium	Age								
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
2016	43.0	9.7	16.1	21.8	26.9	29.3	31.2	33.2	33.2	33.2
2017	43.5	9.5	14.1	17.9	19.3	19.7	20.7	21.8	22.6	
2018	44.0	15.3	23.2	27.0	31.1	33.8	34.9	36.7		
2019	45.0	12.2	19.1	23.9	28.5	32.0	36.7			
2020	48.0	9.5	14.7	19.8	24.3	25.7				
2021	53.0	12.9	21.3	29.7	38.0					
2022	58.0	16.1	24.7	31.6						
2023	62.0	16.3	30.3							
2024	68.0	22.2								

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2016	43.0	9.7	16.1	21.8	26.9	29.3	31.2	33.2	33.2	33.2
2017	43.5	9.5	14.1	17.9	19.3	19.7	20.7	21.8	22.6	?
2018	44.0	15.3	23.2	27.0	31.1	33.8	34.9	36.7	?	?
2019	45.0	12.2	19.1	23.9	28.5	32.0	36.7	?	?	?
2020	48.0	9.5	14.7	19.8	24.3	25.7	?	?	?	?
2021	53.0	12.9	21.3	29.7	38.0	?	?	?	?	?
2022	58.0	16.1	24.7	31.6	?	?	?	?	?	?
2023	62.0	16.3	30.3	?	?	?	?	?	?	?
2024	68.0	22.2	?	?	?	?	?	?	?	?

	60%	30%	20%	8%	8%	6%	1%	0%
Age-to-Age	1.60	1.30	1.20	1.08	1.08	1.06	1.01	1.00
Age-to-Ult	3.12	1.95	1.50	1.25	1.16	1.07	1.01	1.00

# Loss Development

*Claims cost more the longer they are open*

Year	Premium	Age								
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
2016	43.0	9.7	16.1	21.8	26.9	29.3	31.2	33.2	33.2	33.2
2017	43.5	9.5	14.1	17.9	19.3	19.7	20.7	21.8	22.6	22.6
2018	44.0	15.3	23.2	27.0	31.1	33.8	34.9	36.7	37.1	37.1
2019	45.0	12.2	19.1	23.9	28.5	32.0	36.7	38.9	39.3	39.3
2020	48.0	9.5	14.7	19.8	24.3	25.7	27.8	29.5	29.8	29.8
2021	53.0	12.9	21.3	29.7	38.0	41.0	44.3	47.0	47.5	47.5
2022	58.0	16.1	24.7	31.6	37.9	40.9	44.2	46.9	47.4	47.4
2023	62.0	16.3	30.3	39.4	47.3	51.1	55.2	58.5	59.1	59.1
2024	68.0	22.2	35.5	46.2	55.4	59.8	64.6	68.5	69.2	69.2

Year	Ultimate Loss	Premium	Ult Loss Ratio
2020	29.8	48.0	62%
2021	47.5	53.0	90%
2022	47.4	58.0	82%
2023	59.1	62.0	95%
2024	69.2	68.0	102%
Total	253.0	289.0	88%

	60%	30%	20%	8%	8%	6%	1%	0%
Age-to-Age	1.60	1.30	1.20	1.08	1.08	1.06	1.01	1.00
Age-to-Ult	3.12	1.95	1.50	1.25	1.16	1.07	1.01	1.00



# Ultimate Loss Ratios

<u>Year</u>	<u>Ultimate Loss</u>	<u>Premium</u>	<u>Ult Loss Ratio</u>
2020	29.8	48.0	62%
2021	47.5	53.0	90%
2022	47.4	58.0	82%
2023	59.1	62.0	95%
2024	69.2	68.0	102%
Total	253.0	289.0	88%

# Trend – Severity

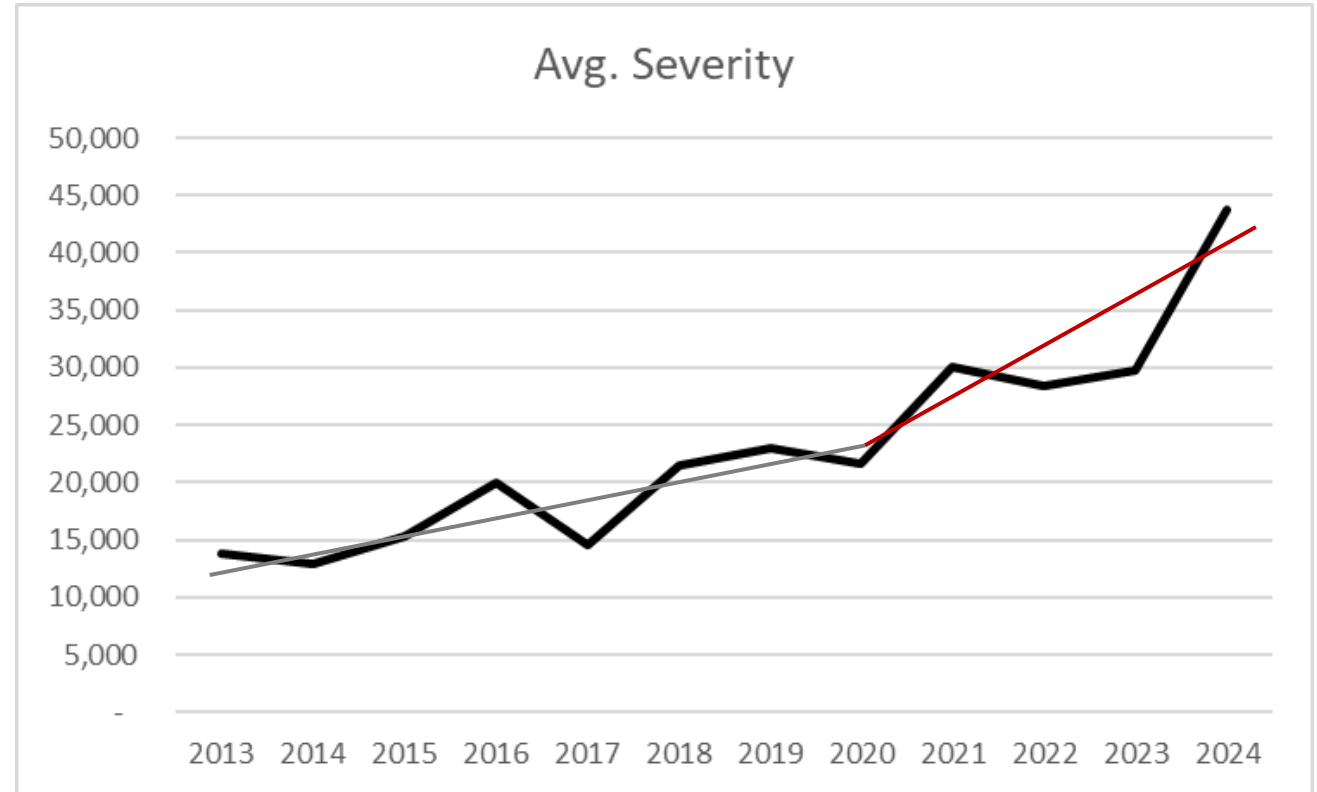
*Claims cost more today than they did in the past*

<u>AY</u>	<u>Avg. Severity</u>
2013	13,869
2014	12,850
2015	15,314
2016	20,041
2017	14,631
2018	21,513
2019	23,054
2020	21,618
2021	30,104
2022	28,449
2023	29,737
2024	43,751

Average AL claim cost  
10 years ago was  
**\$12k-\$15k.**

In '21-'23 it was  
**double** at about **\$30k**

2024 is highest year  
yet at **over \$40k**



2013 to 2020: +7% per year  
2020 to 2024: +9% per year

# Trended Losses

<u>Year</u>	<u>Ultimate Loss</u>		<u>Trend</u> <u>Factor</u>		<u>Trended</u> <u>Ult Loss</u>
2020	29.8		1.54		45.9
2021	47.5	X	1.41	=	67.1
2022	47.4		1.30		61.4
2023	59.1		1.19		70.2
2024	69.2		1.09		75.4
Total	253.0				319.9

# On-leveled Premium

*Rates are higher today than they were in the past*

<u>Year</u>	<u>Rate Change</u>	<u>Premium</u>		<u>On-level</u> <u>Factor</u>		<u>On-leveled</u> <u>Premium</u>
2020	5.0%	48.0		1.44		69.2
2021	8.0%	53.0		1.37		72.8
2022	7.0%	58.0	X	1.27	=	73.7
2023	9.0%	62.0		1.19		73.7
2024	9.0%	68.0		1.09		74.1
Total		289.0				363.5

# Trended, On-leveled, Ultimate Loss Ratios

<u>Year</u>	<u>Trended</u> <u>Ult Loss</u>	<u>On-leveled</u> <u>Premium</u>	<u>Trended, On-level</u> <u>Ult Loss Ratio</u>
2020	45.9	69.2	66%
2021	67.1	72.8	92%
2022	61.4	73.7	83%
2023	70.2	73.7	95%
2024	75.4	74.1	102%
Total	319.9	363.5	88%

# Trended, On-leveled, Ultimate Loss Ratios

<u>Year</u>	<u>Trended</u> <u>Ult Loss</u>	<u>On-leveled</u> <u>Premium</u>	<u>Trended, On-level</u> <u>Ult Loss Ratio</u>
2020	45.9	69.2	66%
2021	67.1	72.8	92%
2022	61.4	73.7	83%
2023	70.2	73.7	95%
2024	75.4	74.1	102%
Total	319.9	363.5	88%
Target Loss Ratio:			60%
Indication:			+47%

# QUESTIONS?

# Thank you!

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