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2022 GENERAL RATE APPLICATION
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MPI to calculate a revised rate indication, substituting pure premium trends proposed by Oliver Wyman for the combined frequency and severity trends used by MPI to determine the overall rate indication.

And use the same pure premium trends for all claim categories for each coverage and distribute the pure premium trend to severity and frequency as you best see fit.

RESPONSE:

MPI used the selected future pure premium trend rates in section 5.1, table 2 of the Oliver Wyman report. Ultimates for accident years 2023/24 through 2025/26 were adjusted such that the pure premium trend rate equaled the selected trend rates. 2022/23 was then adjusted proportionally to align with the adjustments for the later accident years. For this exercise 2021/22 was unadjusted. The figures below show the pure premium trends in the rate update after adjusting for the pure premium trend rates selected in the Oliver Wyman report. The large pure premium trend rates in collision, comprehensive, and property damage in 2022 are a result of updating 2021 actual experience, which has been favourable resulting in lower pure premiums. 2022 is assumed to return back to 'normal' resulting in a one time large increase.

Figure 1 2022 GRA Rate Update - Pure Premium Trend Rates

Line No.	Accident Insurance Year	Weekly Indemnity	ABO Indexed	ABO NonIndexed	Bodily Injury	Collision	Comprehensive	Property Damage
1	2022	1.04%	0.49%	0.60%	3.76%	23.29%	23.16%	17.84%
2	2023	0.94%	0.37%	0.49%	3.66%	2.78%	3.52%	-0.16%
3	2024	0.93%	0.36%	0.49%	3.66%	2.77%	3.52%	-0.57%
4	2025	0.93%	0.34%	0.49%	3.66%	2.76%	3.52%	-0.61%

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Figure 2 Oliver Wyman - Pure Premium Trend Rates

Line No.	Accident Insurance Year	Weekly Indemnity	ABO Indexed	ABO NonIndexed	Bodily Injury	Collision	Comprehensive	Property Damage
1	2022	0.00%	0.00%	-1.88%	1.00%	21.98%	20.24%	19.28%
2	2023	0.00%	0.00%	-1.88%	1.00%	0.62%	0.00%	0.00%
3	2024	0.00%	0.00%	-1.88%	1.00%	0.62%	0.00%	0.00%
4	2025	0.00%	0.00%	-1.88%	1.00%	0.62%	0.00%	0.00%

Figure 3 Impacts to Ultimates from Oliver Wyman Pure Premium Trend Rates

Line No.	Accident Insurance Year	Weekly Indemnity	ABO Indexed	ABO NonIndexed	Bodily Injury	Collision	Comprehensive	Property Damage	Total
1		(\$000)							
2	2022	(\$1,014)	(\$335)	(\$806)	(\$156)	(\$5,041)	(\$2,532)	\$506	(\$9,378)
3	2023	(\$1,992)	(\$609)	(\$1,584)	(\$317)	(\$15,486)	(\$6,354)	\$578	(\$25,764)
4	2024	(\$3,036)	(\$888)	(\$2,368)	(\$488)	(\$26,452)	(\$10,395)	\$826	(\$42,801)
5	2025	(\$4,149)	(\$1,172)	(\$3,158)	(\$671)	(\$37,952)	(\$14,665)	\$1,092	(\$60,675)

Please see Figure 4, which shows the major classification required rates.

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Figure 4 Rating Year 2022/23 Major Classification Required Rate Changes - Breakeven Rates Adjusted for DSR Discount Changes

Line No.	Coverage	Overall	Private Pass	Comm	Public	Motor-Cycle	Trailer	ORV
1	22/23 Units	1,232,900	847,100	47,600	12,000	19,000	226,700	80,500
2	Claims	687.70	910.06	677.41	1,766.86	699.30	43.29	5.03
3	Claims Expense	127.58	168.83	125.67	327.78	129.73	8.03	0.93
4	Road Safety	10.12	13.48	13.48	13.48	13.48	0.00	0.00
5	Operating Expense	69.71	92.84	92.84	92.84	92.84	0.00	0.00
6	Regulatory/Appeal	3.64	4.85	4.85	4.85	4.85	0.00	0.00
7	Commission: Vehicle	34.57	45.67	34.52	86.46	34.24	2.58	0.24
8	Prem Tax: Vehicle	27.66	36.54	27.61	69.16	27.39	2.06	0.19
9	Comm & Prem Tax: Driver	3.18	4.24	4.24	4.24	4.24	0.00	0.00
10	Commission Flat Fee	5.09	6.77	6.77	6.77	6.77	0.00	0.00
11	Reins: Casualty	1.24	1.65	1.65	1.65	1.65	0.00	0.00
12	Reins: Catastrophe	11.82	12.86	12.86	12.86	0.00	12.86	0.00
13	Fleet Rebates	14.75	20.06	20.06	20.06	0.00	0.00	0.00
14	Anti-Theft Discount	1.09	1.59	0.00	0.00	0.00	0.00	0.00
15	Driver Prem	52.33	69.69	69.69	69.69	69.69	0.00	0.00
16	Service Fees	23.91	31.84	31.84	31.84	31.84	0.00	0.00
17	Req Rate (Raw)	921.91	1,217.90	920.42	2,305.48	912.95	68.82	6.39
18	Req Rate (Bal)	911.29	1,203.87	909.82	2,278.92	902.43	68.03	6.32
19	21/22 Average Rate	888.61	1,165.69	867.47	2,145.95	905.89	73.36	7.02
20	Major Class Drift	5.3%	6.3%	5.4%	0.9%	0.2%	5.0%	0.0%
21	22/23 Average Rate	936.00	1,238.68	914.18	2,165.08	907.47	77.00	7.02
22	Without Rate Change							
23	Full Cred Req Change	-2.6%	-2.8%	-0.5%	5.3%	-0.6%	-11.7%	-10.0%
24	Applied for Change	0.0%	0.0%	-0.4%	5.7%	2.8%	-11.7%	-10.0%
25	Credibility		99.3%	88.8%	66.7%	76.0%	97.4%	93.1%
26	Cred Wtd Change		0.0%	-0.3%	3.8%	2.1%	-11.4%	-9.3%
27	Cred Wtd Req Rate		1,238.87	911.24	2,247.93	926.64	68.26	6.37
28	Cred Wtd Req Rate (Bal)	935.90	1,239.39	911.63	2,248.87	927.03	68.29	6.37
29	Cred Wtd Change (Bal)		0.1%	-0.3%	3.9%	2.2%	-11.3%	-9.3%

MPI has an extensive claims forecasting process where it analyzes frequency and severity at a detailed level. To select one trend (for each coverage) for forecasting is an oversimplification and imprudent methodology. As an example, Comprehensive claims are comprised of several different perils such as hail, theft, vandalism, glass, and other. These claims are very different from each other in both frequency and severity. MPI separates these claims in order to identify underlying trends within these

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perils. Furthermore, each of these perils are split into repair and total loss claims as changes in the growth of repair claims differ from total loss claims which are dependent on the actual cash value of the vehicle. As such, by selecting one trend to apply to all of these claims, greatly diminishes the value and quality of the MPI forecasting methodology.

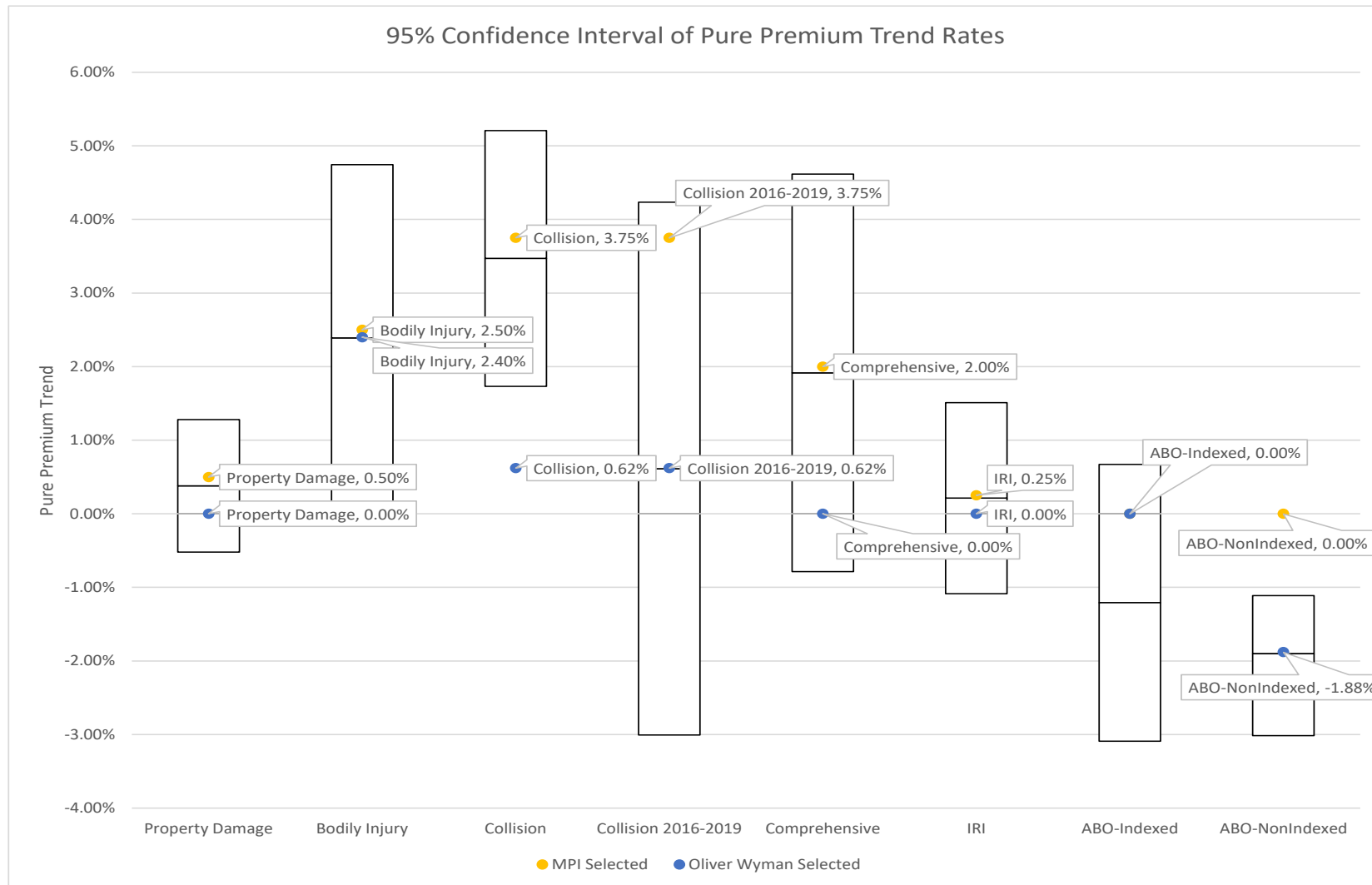
In the Oliver Wyman's report, a p-value is used to determine if a trend is statistically significant, i.e. it is unlikely to happen by chance if the true trend rate is equal to 0.0%. While this is the correct use of p-value to determine if a trend is statistically significant, in situations where the trend is not statistically significant, it is an improper use of the test, i.e. to assume that the trend rate is in fact 0.0%. Oliver Wyman is using the p-value in hypothesis testing. A hypothesis is proposed, in this case, that the true trend rate is equal to 0.0%. This is called the null hypothesis. A test is then conducted to try and prove the null hypothesis incorrect, i.e. the trend rate is not equal to 0.0%. When the p-value is less than 0.05, it is considered statistically unlikely that the results shown could have arisen from a trend rate equal to 0.0%. Therefore, the null hypothesis is rejected and it's concluded that the true trend rate differs from 0.0%. However, when the p-value is greater than 0.05 the test has failed to reject the null hypothesis, that is, it cannot conclude that the true trend rate is in fact 0.0%. This logical fallacy is also known as an argument from ignorance. There is insufficient evidence to prove that the true trend rate differs from 0.0%, therefore it must be 0.0%.

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Figure 5 shows a range of possible trend rates that could produce the observed pure premiums by chance. This is also known as a confidence interval, specifically a 95% confidence interval. In other words, the true trend rate is within the bars 19 of 20 times. Oliver Wyman's report correctly states that when the trend rate of 0.0% is within these confidence bands, the trend rate is not statistically significant. However, it would be incorrect to say that 0.0% is a best estimate. A best estimate will typically be in the form of an average over a specified period. MPI has selected a trend rate around the best estimate (close to the center of the box). Deviating far from the best estimate introduces bias into the forecast. Oliver Wyman's selections introduce a negative bias and therefore cannot be used as a best estimate.

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Figure 5 95% Confidence Interval of Pure Premium Trend Rates



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It is not clear as to why a collision trend of 0.62% was selected in the Oliver Wyman report when in fact, it is not statistically significant (p -value = 0.542, page 15). This contradicts what appears in section 5.2 of the report, Statistical Significance.

The p -value indicates the probability that the coefficient would have occurred by chance if the true value of the coefficient were 0. The typical threshold for accepting a coefficient is a p -value less than or equal to 0.05. That is, coefficients are statistically significant if there is a less than 5% chance that we would observe the value by chance. When the p -value exceeds 0.05, we conclude that the model could not discern a statistically significant trend.